APPENDIX 9

Traffic Impact Analysis

MILLCREEK PROMENADE TRAFFIC IMPACT ANALYSIS (REVISED)

City of Menifee

January 18, 2019

gandini

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

MILLCREEK PROMENADE TRAFFIC IMPACT ANALYSIS (REVISED)

City of Menifee

January 18, 2019

prepared by

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EXECUTIVE SUMMARY

This section summarizes the existing traffic conditions, project impacts, and the proposed mitigation measures.

ANALYSIS METHODOLOGY

The analysis of the traffic impacts from the proposed Millcreek Promenade development and the assessment of the required mitigation measures were based on an evaluation of the existing and forecast traffic conditions in the vicinity of the site with and without the project. The following analysis years are considered in this report:

- Existing Conditions (2018)
- Existing Plus Project (Buildout)[1]
- Existing Plus Ambient Growth
- Existing Plus Ambient Growth Plus Project (Phase 1)
- Existing Plus Ambient Growth Plus Cumulative Without Holland Road Overpass
- Existing Plus Ambient Growth Plus Project (Buildout) Plus Cumulative Without Holland Road Overpass
- Existing Plus Ambient Growth Plus Plus Cumulative With Holland Road Overpass
- Existing Plus Ambient Growth Plus Project (Buildout) Plus Cumulative With Holland Road Overpass

Existing intersection traffic conditions were established through AM and PM peak hour intersection turning movement counts obtained by Kunzman Associates, Inc. from August 2017 and January 2018 while schools were in session (see Appendix C).

Project trips for all future projections were estimated using the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

Roadway segments are considered to operate at an acceptable Level of Service when the average daily traffic volumes do not exceed the roadway capacities as specified by the roadway classification.

The technique used to assess the capacity needs of an intersection is known as the intersection delay methodology (see Appendix D) based on the Highway Capacity Manual – Transportation Research Board Special Report 209. To calculate delay, the traffic volumes using the intersection is compared with the capacity of the intersection.

The intersection Level of Service is compared to the criteria defined by the City for all scenarios analyzed. Where feasible, improvements in accordance with the local jurisdiction's General Plan are added to future scenarios.

For deficient intersections, anticipated traffic mitigation at the time of the project opening with full occupancy was combined into a summary of mitigation requirements. The mitigation 'pro-rata' responsibility for the proposed development was estimated based on the percent of the increase in traffic volumes from the Existing traffic conditions to the Opening Year traffic conditions that was attributed to the project generated trips.

DEFINITION OF DEFICIENCY AND SIGNIFICANT IMPACT

The traffic impact analysis methodology is consistent with the City of Menifee Public Works Department Traffic Impact Analysis Guidelines (August 2015). The City of Menifee was contacted for input on the scope of the study and information on other developments.

[1] The existing plus project conditions has been analyzed to comply with the Sunnyvale West Neighborhood Association v. City of Sunnyvale CEQA court case. This scenario assumes the full development of the proposed project and full absorption of the proposed project trips on the circulation system at the present time.

Roadway Segment Level of Service Criteria

In accordance with the City of Menifee General Plan Draft Environmental Impact Report (September 2013), the City has adopted the County of Riverside criteria for roadway segments.

The City has established, as a Citywide target, a Level of Service C on all City maintained roads and conventional State Highways, except that a Level of Service D could be allowed on at any combination of Major Arterials, Expressways, or conventional State Highways as specified in the County of Riverside Congestion Management Plan, 2011.

Intersection Level of Service Criteria

In accordance with the City of Menifee General Plan, Level of Service D or better shall be maintained on all City maintained except that a Level of Service E could be allowed on designated Economic Development Corridors if the project supports transit-oriented development and pedestrian communities. Level of Service E may also be used at constrained intersections in close proximity to the I-215 Freeway, such as Haun Road/Newport Road, Bradley Road/McCall Boulevard, Antelope Road/Scott Road, and Haun Road/Scott Road.

Significant Impact Criteria

In accordance with the City of Menifee Traffic Impact Study Guidelines (August 2015) and consultation with City of Menifee Transportation Department staff, if a pre-project condition is at or better than the minimum acceptable Level of Service and the addition of project trips results in unacceptable Level of Service, a direct significant impact is forecast to occur. If the pre-project condition is Level of Service E or F and the project adds 50 or more peak hour trips to the intersection, then a cumulative significant impact is forecast to occur.

EXISTING CONDITIONS

The project site is currently vacant and no significant trips are being generated. Adjacent land uses include single-family detached residential dwelling units to the north, vacant/storage facility to the east, and vacant to the south and west.

The study intersections currently operate at acceptable Levels of Service during the peak hours for Existing traffic conditions, except for the following study intersection that currently operates at an unacceptable Level of Service during the peak hours:

Haun Road (NS) at:
- Garbani Road (EW) - #11

EXISTING TRAFFIC SIGNAL WARRANTS

The peak hour volume traffic signal warrant is currently satisfied at the following study intersections for Existing traffic conditions (see Appendix E):

Bradley Road (NS) at:
- Craig Avenue/Linda Lee Drive (EW) - #3

Haun Road (NS) at:
- Holland Road (EW) - #10
- Garbani Road (EW) - #11

The unsignalized intersections have been evaluated for traffic signals using the California Department of Transportation Warrant 3 Peak Hour traffic signal warrant analysis, as specified in the California Manual on Uniform Traffic Control Devices (2014 Edition).

TRAFFIC IMPACTS

Project Description

The project site is located south of Garbani Road between Sherman Road and Haun Road. Access to the commercial component of the project is proposed to be provided via full access to Haun Road at the north and central accesses, restricted access (right turns in/out only) at the south access on Haun Road, and restricted access (right turns in/out only) to Garbani Road. Access to the multi-family residential component of the project is proposed to be provided via full access to Sherman Road and Garbani Road. Access to the restaurant and industrial components of the project is proposed to be provided via full access to Haun Road. Access to the single-family residential component of the Millcreek Promenade project is proposed to be provided via full access to Sherman Road and Haun Road.

The project site is proposed to be developed with 210 multi-family housing dwelling units, 204 single-family detached residential dwelling units, 38,400 square feet of industrial park, 122,727 square feet of commercial retail, and 8,000 square feet of high-turnover (sit-down) restaurant. The build out year for the project is 2022. Phase 1 includes the commercial retail, industrial park, and high-turnover (sit-down) restaurant components of the proposed project and is anticipated for an Opening Year of 2020.

The proposed development for Phase 1 (2020) is projected to generate a total of approximately 6,764 daily vehicle trips of which 264 will occur during the AM peak hour and 619 of which occur during the PM peak hour.

The proposed development at Buildout (2022) is projected to generate a total of approximately 9,881 daily vehicle trips of which 486 will occur during the AM peak hour and 907 of which occur during the PM peak hour.

Future Level of Services

For Existing Plus Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Bradley Road (NS) at:
- Craig Avenue/Linda Lee Drive (EW) - #3

Haun Road (NS) at:
- Holland Road (EW) - #10
- Garbani Road (EW) - #11

The study intersections are projected to operate at acceptable Levels of Service for Existing Plus Project traffic conditions, with improvements.

For Existing Plus Ambient Growth traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Haun Road (NS) at:
- Garbani Road (EW) - #11

For Existing Plus Ambient Growth Plus Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Bradley Road (NS) at:
Craig Avenue/Linda Lee Drive (EW) - #3

Haun Road (NS) at:
Holland Road (EW) - #10
Garbani Road (EW) - #11

The study intersections are projected to operate at acceptable Levels of Service for Existing Plus Ambient Growth Plus Project traffic conditions, with improvements.

For Existing Plus Ambient Growth Plus Cumulative – Without Holland Road Overpass traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Bradley Road (NS) at:
Holland Road (EW) - #2

Haun Road (NS) at:
Newport Road (EW) - #9
Holland Road (EW) - #10
Garbani Road (EW) - #11
Scott Road (EW) - #15

For Existing Plus Ambient Growth Plus Project Plus Cumulative – Without Holland Road Overpass traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Bradley Road (NS) at:
Holland Road (EW) - #2
Craig Avenue/Linda Lee Drive (EW) - #3

Sherman Road (NS) at:
Garbani Road (EW) - #4

Haun Road (NS) at:
Newport Road (EW) - #9
Holland Road (EW) - #10
Garbani Road (EW) - #11
Scott Road (EW) - #15

The study intersections are projected to operate at acceptable Levels of Service for Existing Plus Ambient Growth Plus Project Plus Cumulative – Without Holland Road Overpass traffic conditions, with improvements.

For Existing Plus Ambient Growth Plus Cumulative – With Holland Road Overpass traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Haun Road (NS) at:
Holland Road (EW) - #10
Garbani Road (EW) - #11

Hanover Lane (NS) at:
Holland Road (EW) - #24

For Existing Plus Ambient Growth Plus Project Plus Cumulative – With Holland Road Overpass traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Haun Road (NS) at:
Holland Road (EW) - #10
Garbani Road (EW) - #11

Hanover Lane (NS) at:
Holland Road (EW) - #24

The study intersections are projected to operate at acceptable Levels of Service for Existing Plus Ambient Growth Plus Project Plus Cumulative – With Holland Road Overpass traffic conditions, with improvements.

FUTURE TRAFFIC SIGNAL WARRANTS

Traffic signals are projected to be warranted at the following additional study intersections for Existing Plus Project traffic conditions (see Appendix E):

Haun Road (NS) at:
North Project Access (EW) - #12
Central Project Access (EW) - #13

The unsignalized intersections have been evaluated for traffic signals using the California Department of Transportation Warrant 3 Peak Hour traffic signal warrant analysis, as specified in the California Manual on Uniform Traffic Control Devices (2014 Edition).

PROJECT IMPROVEMENTS

On-site improvements and improvements adjacent to the site will be required in conjunction with the proposed development to ensure adequate circulation within the project itself (see Figure 56).

Construct Sherman Road from Garbani Road to the south project boundary at its ultimate half-section width including landscaping and parkway improvements in conjunction with development. This north-south roadway is classified as a Collector/Interconnected Local (2 lanes) on the City of Menifee General Plan Circulation Element and as a Class III Bike Routes on the City of Menifee General Plan Proposed Bikeway and Community Pedestrian Network. Therefore, a community trail and bicycle specific signage shall be provided.

Construct Garbani Road from Sherman Road to Haun Road at its ultimate half-section width including landscaping and parkway improvements in conjunction with development. This east-west roadway is classified as a Major (4 lanes, divided) on the City of Menifee General Plan Circulation Element and as a Community On-Street Bike Lanes (Class II) on the City of Menifee General Plan Proposed Bikeway and Community Pedestrian Network. Therefore, a community trail/sidewalk and an on-street striped bicycle lane shall be provided.

Construct Haun Road from Garbani Road to the south project boundary at its ultimate half-section width including landscaping and parkway improvements in conjunction with development. This north-south roadway is classified as a Major (4 lanes, divided) on the City of Menifee General Plan Circulation Element and as a Community Off-Road Bike Trail (Class I) on the City of Menifee General Plan Proposed Bikeway and Community Pedestrian Network. Therefore, a community trail/sidewalk and an off-street bicycle path shall be provided.

Signalize the internal intersection directly west of the Haun Road and Central Project Access intersection including coordination and overlap with the traffic signal at the intersection of Haun Road and Central Project Access.

The project site should provide sufficient parking spaces to meet City of Menifee parking code requirements in order to service on-site parking demand.

On-site traffic signing/striping should be implemented in conjunction with detailed construction plans for the project site.

Sight distance at the project accesses shall comply with standard California Department of Transportation and City of Menifee sight distance standards. The final grading, landscaping, and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed and approved as consistent with this measure prior to issuance of grading permits.

As is the case for any roadway design, the City of Menifee should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

The following project-specific measures are recommended to provide access for the project site:

Sherman Road (NS) at:

Garbani Road (EW) - #4

- Construct northbound shared left/through/right turn lane

Multi-Family Residential Access (EW) - #5

- Construct northbound shared through/right turn lane
- Construct southbound shared left/through lane
- Construct westbound shared left/right turn lane

Single-Family Residential Access (EW) - #6

- Construct northbound shared through/right turn lane
- Construct southbound shared left/through lane
- Construct westbound shared left/right turn lane

Multi-Family Residential Access (NS) at:

Garbani Road (EW) - #7

- Construct northbound shared left/right turn lane
- Construct westbound left turn lane

Commercial Access (NS) at:

Garbani Road (EW) - #8

- Construct northbound right turn lane

Haun Road (NS) at:

North Project Access (EW) - #12

- Construct northbound left turn lane
- Construct additional southbound share through/right turn lane
- Construct eastbound shared left/right turn lane
- Install traffic signal

Central Project Access (EW) - #13
- Construct northbound left turn lane
- Construct additional southbound shared through/right turn lane
- Construct eastbound left turn lane
- Construct eastbound right turn lane
- Install traffic signal

South Project Access (EW) - #14
- Construct eastbound right turn lane

PROJECT PHASING

The project site is proposed to be developed with 210 multi-family housing dwelling units, 204 single-family detached residential dwelling units, 38,400 square feet of industrial park, 122,727 square feet of commercial retail, and 8,000 square feet of high-turnover (sit-down) restaurant. The build out year for the project is 2022. Phase 1 includes the commercial retail, industrial park, and high-turnover (sit-down) restaurant components of the proposed project and is anticipated for an Opening Year of 2020.

For Phase 1, project frontage improvements include all of Haun Road and Garbani Road from Haun Road west to the residential boundary line adjacent to the project site. For Buildout, project frontage improvements include all of Haun Road, Garbani Road, and Sherman Road adjacent to the project site.

MITIGATION MEASURES

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for Without Holland Overpass traffic conditions:

Bradley Road (NS) at:

Holland Road (EW) - #2
- Construct northbound right turn lane

Craig Avenue / Linda Lee Drive (EW) - #3
- Install traffic signal

Sherman Road (NS) at:

Garbani Road (EW) - #4
- Construct southbound left turn lane

Haun Road (NS) at:

Newport Road (EW) - #9
- Restripe southbound shared through/right turn lane to right turn lane
- Install southbound right turn overlap
- Install eastbound right turn overlap
- Construct additional westbound right turn lane with overlap

Holland Road (EW) - #10
- Install traffic signal

Garbani Road (EW) - #11
- Restripe southbound right turn lane to shared through/right turn lane
- Construct westbound left turn lane
- Install traffic signal

Scott Road (EW) - #15
- Construct additional southbound left turn lane
- Install westbound right turn overlap

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for With Holland Overpass traffic conditions:

Haun Road (NS) at:

Holland Road (EW) - #10

- Construct northbound right turn lane
- Construct westbound left turn lane
- Construct additional westbound through lane
- Construct westbound right turn lane
- Install traffic signal

Garbani Road (EW) - #11

- Restripe southbound right turn lane to shared through/right turn lane
- Install traffic signal

Hanover Lane (NS) at:

Holland Road (EW) - #24

- Install traffic signal

Participate in specified City development fees to fund local roadway improvements that will be required as a result of the growth that development creates. The Western Riverside Council of Governments administers the Transportation Uniform Mitigation Fee (TUMF) for regional transportation improvements.

1. INTRODUCTION

PURPOSE OF REPORT AND STUDY OBJECTIVES

The purpose of this traffic impact analysis is to evaluate the development of the proposed Millcreek Promenade project. This traffic impact analysis presents the study methodology, analysis, findings, recommendations, and supporting data.

The study objectives include (1) documentation of Existing traffic conditions in the vicinity of the site; (2) analysis of Existing Plus Project traffic conditions; (3) evaluation of Existing Plus Ambient Growth Plus Project traffic conditions; and (4) evaluation of Existing Plus Ambient Growth Plus Project Plus Cumulative traffic conditions; and (5) determination of on-site and off-site improvements needed to achieve City of Menifee Level of Service requirements.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided within Appendix A.

PROJECT LOCATION

The project site is located south of Garbani Road between Sherman Road and Haun Road. Figure 1 shows the project location map.

LAND USE AND INTENSITY

The project site is proposed to be developed with 210 multi-family housing dwelling units, 204 single-family detached residential dwelling units, 38,400 square feet of industrial park, 122,727 square feet of commercial retail, and 8,000 square feet of high-turnover (sit-down) restaurant. The build out year for the project is 2022. Phase 1 includes the commercial retail, industrial park, and high-turnover (sit-down) restaurant component of the proposed project and is anticipated for an Opening Year of 2020.

ZONING AND LAND USE CATEGORY

Existing Zoning: EDC-SG

Proposed Zoning: R-2, R-3, I-P, and C-1

SITE PLAN

Figure 2 illustrates the project site plan.

PHASING AND TIMING

The build out year for the project site is 2022. Phase 1 includes the industrial park, commercial retail, and high-turnover (sit-down) restaurant components of the proposed project and is anticipated for an Opening Year of 2020.

SITE ACCESS

The project site is proposing two accesses on Sherman Road, two accesses on Garbani Road, and three accesses on Haun Road.

The project accesses shall be constructed in conjunction with the proposed project.

Access Restrictions

Access to the commercial component of the project is proposed to be provided via full access to Haun Road at the north and central accesses, restricted access (right turns in/out only) at the south access on Haun Road, and restricted access (right turns in/out only) to Garbani Road.

Access to the multi-family residential component of the project is proposed to be provided via full access to Sherman Road and Garbani Road.

Access to the restaurant and industrial components of the project is proposed to be provided via full access to Haun Road.

Access to the single-family residential component of the Millcreek Promenade project is proposed to be provided via full access to Sherman Road and Haun Road.

Haun Road Driveway Spacing

The distance between Garbani Road and the proposed North Project Access is approximately 637 feet. The distance between the proposed North Project Access and the proposed Central Project Access is approximately 708 feet. The County of Riverside Roadway Design Requirements (Standard No. 114) states that a Major Highway (Haun Road's classification) shall have intersection intervals at a minimum distance of 660 feet. The distance between Garbani Road and the proposed North Project Access is deficient by 23 feet. However, both the Haun Road and Garbani Road intersection and the Haun Road and North Project Access intersection are recommended for traffic signalization and the southbound shared through/right turn lane 95th percentile queue length at the North Project Access is less than the distance between the intersections. Therefore, with these improvements and based on the results of the analysis, it is anticipated that sufficient driveway spacing will be provided.

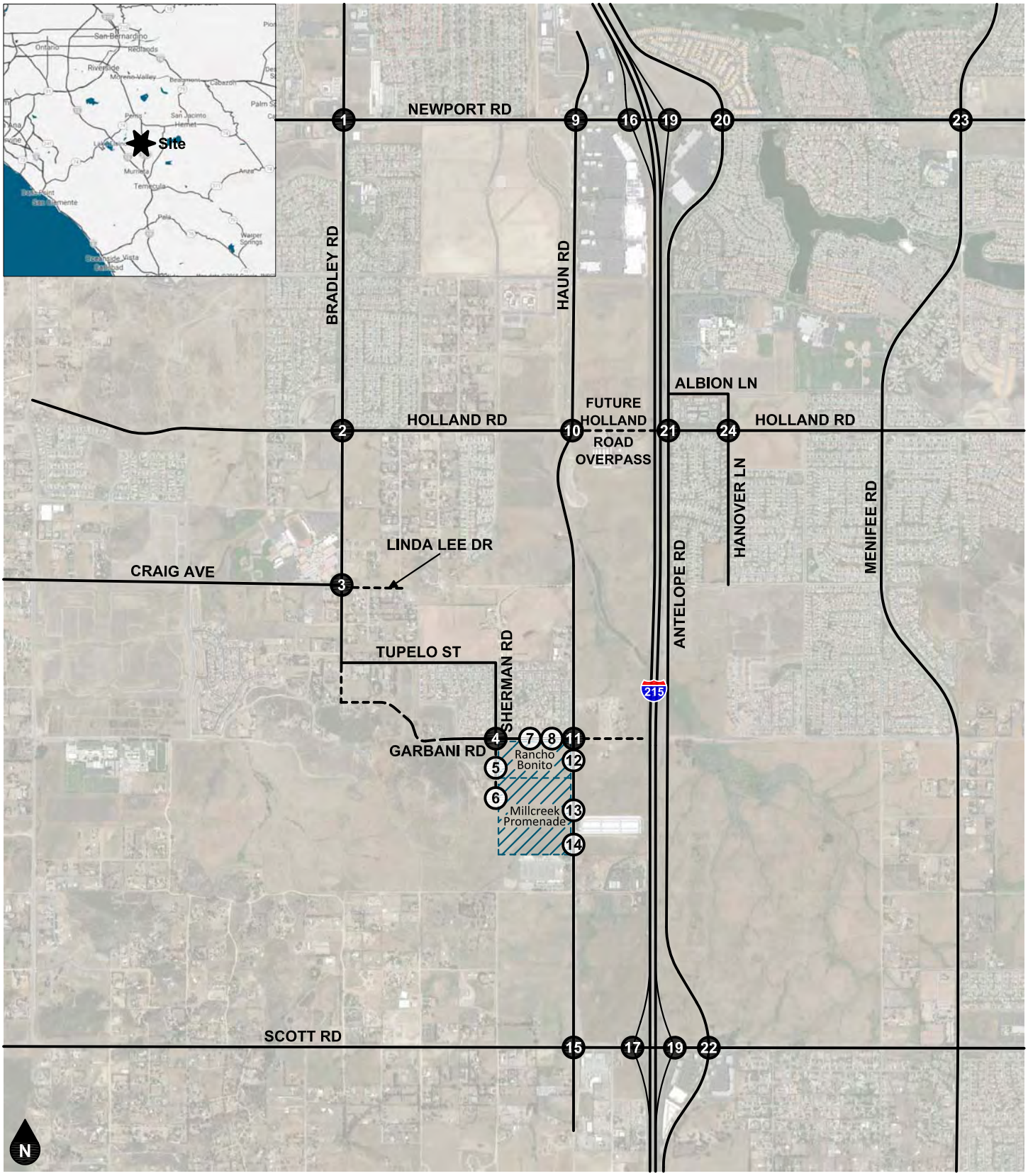
GARBANI ROAD FRONTAGE IMPROVEMENTS

Garbani Road is classified as a Major roadway on the City of Murrieta General Plan Circulation Element. The City of Murrieta has accepted the project applicants request to shift the centerline of Garbani Road north by approximately 9 feet in order to create a Modified Major roadway. A General Plan Amendment is not needed since the project will maintain the minimum curb width of a Major roadway.

GARBANI ROAD INTERCHANGE

The City of Murrieta General Plan Circulation Element shows a future freeway interchange on Garbani Road and the I-215 Freeway. Currently, there are no concrete plans for when this freeway interchange will be constructed and operational as the California Department of Transportation has not completed a Project Study Report for this interchange. Since there are not any approved designs and the traffic implications have not yet been analyzed, it is not possible to quantitatively assess this future interchange. Furthermore, the likelihood that this future freeway interchange would be constructed and operational by the Year 2022 build out of this project is minimal.

It can be reasonably assumed that when this Garbani Road Interchange is constructed and operational at some future date, it would draw regional traffic away from the Newport Road and Scott Road Interchanges. Local traffic would also be drawn away from roadways within the vicinity of the project site since a new point of access across the I-215 Freeway would be established at Garbani Road. With this reallocation of traffic throughout the roadway network, it can be reasonably inferred that traffic operations at the study area roadway segments and intersections would become more efficient and a reduction in volumes/delay would result.



Legend

(#) Study Intersection

(#) Project Driveway

Figure 1
Project Location Map

Figure 2
Site Plan

2. EXISTING CONDITIONS

STUDY AREA

Pursuant to discussions with the City of Menifee Transportation Department staff (see Appendix B), the study area includes the following:

Study Intersections	Jurisdiction
Bradley Road (NS) at:	
Newport Road (EW) - #1	City of Menifee
Holland Road (EW) - #2	City of Menifee
Craig Avenue/Linda Lee Drive (EW) - #3	City of Menifee
Sherman Road (NS) at:	
Garbani Road (EW) - #4	City of Menifee
Multi-Family Residential Access (EW) - #5	City of Menifee
Single-Family Residential Access (EW) - #6	City of Menifee
Multi-Family Residential Access (NS) at:	
Garbani Road (EW) - #7	City of Menifee
Commercial Access (NS) at:	
Garbani Road (EW) - #8	City of Menifee
Haun Road (NS) at:	
Newport Road (EW) - #9	City of Menifee
Holland Road (EW) - #10	City of Menifee
Garbani Road (EW) - #11	City of Menifee
North Project Access (EW) - #12	City of Menifee
Central Project Access (EW) - #13	City of Menifee
South Project Access (EW) - #14	City of Menifee
Scott Road (EW) - #15	City of Menifee
I-215 Freeway SB Ramps (NS) at:	
Newport Road (EW) - #16	California Dept. of Transportation
Scott Road (EW) - #17	California Dept. of Transportation
I-215 Freeway NB Ramps (NS) at:	
Newport Road (EW) - #18	California Dept. of Transportation
Scott Road (EW) - #19	California Dept. of Transportation
Antelope Road (NS) at:	
Newport Road (EW) - #20	City of Menifee
Holland Road (EW) - #21	City of Menifee
Scott Road (EW) - #22	Cities of Menifee/Murrieta
Menifee Road (NS) at:	
Newport Road (EW) - #23	City of Menifee
Hanover Lane (NS) at:	
Holland Road (EW) - #24 (With Holland Road Overpass Scenario Only	City of Menifee

Area Roadway System

Existing roadways within the study area include Bradley Road, Sherman Road, Haun Road, Antelope Road, Menifee Road, Newport Road, Holland Road, Craig Avenue/Linda Lee Drive, Tupelo Street, Garbani Road, and Scott Road.

Bradley Road: This north-south two lane undivided to four lane divided roadway is classified as a Secondary (4 lanes, undivided) north of Newport Road and as a Major (4 lanes, divided) south of Newport Road on the City of Menifee General Plan Circulation Element. This roadway is identified for future improvements to increase multi-modal access and is classified as a Subregional Route – On-Street Bike Lanes (Class II) north of Holland Road, as a Community On-Street Neighborhood Electric Vehicle/Bike Lanes (Class II) between Holland Road and Craig Avenue, and as a Community On-Street Bike Lanes (Class II) south of Craig Avenue. It currently carries approximately 2,700 to 12,000 vehicles per day in the study area.

Sherman Road: This north-south two lane undivided roadway is classified as a Collector/Interconnected Local (2 lanes) on the City of Menifee General Plan Circulation Element. This roadway is identified for future improvements to increase multi-modal access and is classified as a Class III Bike Routes. It currently carries approximately 2,400 vehicles per day in the study area.

Haun Road: This north-south two lane undivided to four lane divided roadway is not classified north of Newport Road and as a Major (4 lanes, divided) south of Newport Road on the City of Menifee General Plan Circulation Element. This roadway is identified for future improvements to increase multi-modal access and is classified as a Community Off-Road Bike Trail (Class I) north of Wickerd Road and as a Subregional Route – On-Street Bike Lanes (Class II) south of Wickerd Road. It currently carries approximately 2,500 to 32,900 vehicles per day in the study area.

Antelope Road: This north-south two lane undivided to four lane divided roadway is classified as a Secondary (4 lanes, undivided) north of Newport Road and as a Major (4 lanes, divided) south of Newport Road on the City of Menifee General Plan Circulation Element. This roadway is identified for future improvements to increase multi-modal access and is classified as a Community On-Street Neighborhood Electric Vehicle/Bike Lanes (Class II) north of Craig Avenue and as a Community On-Street Bike Lanes (Class II) south of Craig Avenue. It currently carries approximately 6,400 to 22,500 vehicles per day in the study area.

Menifee Road: This north-south two lane undivided to four lane divided roadway is classified as an Arterial (4 lanes, divided) on the City of Menifee General Plan Circulation Element. This roadway is identified for future improvements to increase multi-modal access and is classified as a Community On-Street Bike Lanes (Class II). It currently carries approximately 12,000 to 13,200 vehicles per day in the study area.

Newport Road: This east-west four lane divided to six lane divided roadway is classified as an Urban Arterial (6 lanes, divided) on the City of Menifee General Plan Circulation Element. This roadway is identified for future improvements to increase multi-modal access and is classified as a Community On-Street Bike Lanes (Class II). It currently carries approximately 33,600 to 57,600 vehicles per day in the study area.

Holland Road: This east-west two lane undivided to four lane divided roadway is classified as a Major (4 lanes, divided) on the City of Menifee General Plan Circulation Element. This roadway is identified for future improvements to increase multi-modal access and is classified as a Community On-Street Bike Lanes (Class II) south of Craig Avenue west of Sherman Road and east of Haun Road and as a Subregional Route – On-Street Bike Lanes (Class II) between Bradley Road and Haun Road. It currently carries approximately 100 to 10,800 vehicles per day in the study area.

Craig Avenue/Linda Lee Drive: This east-west two lane undivided roadway is classified as a Collector/Interconnected Local (2 lanes) on the City of Menifee General Plan Circulation Element. This roadway is identified for future improvements to increase multi-modal access and is classified as a Class III Bike Routes. It currently carries approximately 100 to 3,600 vehicles per day in the study area.

Tupelo Street: This east-west two lane undivided roadway is not classified on the City of Menifee General Plan Circulation Element. This roadway is identified for future improvements to increase multi-modal access and is classified as a Community Hiking/Biking Trail Opportunity. It currently carries approximately 2,600 vehicles per day in the study area.

Garbani Road: This east-west two lane undivided to three lane undivided roadway is classified as a Major (4 lanes, divided) on the City of Menifee General Plan Circulation Element. This roadway is identified for future improvements to increase multi-modal access and is classified as a Community On-Street Bike Lanes (Class II). It currently carries approximately 2,500 vehicles per day in the study area.

Scott Road: This east-west two lane undivided to four lane divided roadway is classified as a Major (4 lanes, divided) on the City of Menifee General Plan Circulation Element. This roadway is identified for future improvements to increase multi-modal access and is classified as a Subregional Route – On-Street Bike Lanes (Class II). It currently carries approximately 14,300 to 35,200 vehicles per day in the study area.

Existing Travel Lanes and Intersection Controls

Figure 3 identifies the Existing roadway conditions for study roadways. The Existing number of through lanes for roadways and the intersection controls are identified.

EXISTING TRAFFIC

Existing Traffic Volumes

Figure 4 depicts the Existing average daily traffic volumes. The Existing average daily traffic volumes were obtained from manual 24-hour tube counts, the 2016 Traffic Volumes on California State Highways by the California Department of Transportation, and factored from peak hour intersection turning movement counts (see Appendix C) by Kunzman Associates, Inc. using the following formula for each intersection leg:

PM Peak Hour (Approach + Exit Volume) x 12 = Daily Leg Volume.

This is a conservative estimate and may overestimate the average daily traffic volumes.

Existing intersection traffic conditions were established through AM and PM peak hour intersection turning movement counts obtained by Kunzman Associates, Inc. from August 2017 and January 2018 while schools were in session (see Appendix C) and shown on Figures 5 and 6, respectively. The AM and PM peak hour traffic volumes were identified by counting the two-hour periods from 7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM. Explicit peak hour factors have been calculated using the data collected for this effort as well.

Roadway Segment Level of Service

Roadway segments are considered to operate at an acceptable level when the daily traffic volumes do not exceed the average daily traffic volumes as specified by the roadway classification. The County of Riverside average daily traffic volume as specified by the roadway classification and these values are shown in Table 1[1].

As shown in Table 2, the study roadway segments currently operate within acceptable Levels of Service for Existing traffic conditions, except for the following study roadway segments that currently operate at unacceptable Levels of Service:

Haun Road, from Newport Road to Holland Road
Haun Road, from Holland Road to Garbani Road
Haun Road, from Garbani Road to Scott Road

[1] The roadway segment capacity thresholds represent the theoretical maximum two-way average daily traffic volumes that any given roadway is able to accommodate within one day, given typical peak hour characteristics. Generally, roadway segment analysis is performed for planning purposes only and is affected by such factors as the number of intersections (spacing, configuration and control features), degree of access control, roadway grades, design geometrics (horizontal and vertical alignments), sight distance, vehicle mix (truck and bus traffic), and bicycle/pedestrian traffic. Roadway segments benefit from on-going traffic signal progression timing adjustments that maximize green time during peak traffic demands.

Scott Road, from west of Haun Road to Haun Road
Scott Road, from I-215 Freeway to Antelope Road

Intersection Delay

The technique used to assess the capacity needs of an intersection is known as the intersection delay methodology (see Appendix D) based on the Highway Capacity Manual – Transportation Research Board Special Report 209. To calculate delay, the traffic volumes using the intersection is compared with the capacity of the intersection.

The Existing delay and Level of Service for intersections in the vicinity of the project are shown in Table 3. The study intersections currently operate at acceptable Levels of Service during the peak hours for Existing traffic conditions, except for the following study intersection that currently operates at an unacceptable Level of Service during the peak hours:

Haun Road (NS) at:
Garbani Road (EW) - #11

Existing delay worksheets are provided in Appendix D.

Existing Traffic Signal Warrants

Traffic signals appear to currently be warranted at the following study intersections for Existing traffic conditions (see Appendix E):

Bradley Road (NS) at:
Craig Avenue/Linda Lee Drive (EW) - #3

Haun Road (NS) at:
Holland Road (EW) - #10
Garbani Road (EW) - #11

The unsignalized intersections have been evaluated for traffic signals using the California Department of Transportation Warrant 3 Peak Hour traffic signal warrant analysis, as specified in the California Manual on Uniform Traffic Control Devices (2014 Edition).

AREAWIDE CIRCULATION

City General Plan and Circulation Element

Figure 7 shows the current City of Menifee General Plan Circulation Element. Both existing and future roadways are included in the Circulation Element of the General Plan and are graphically depicted on Figure 7. This figure shows the nature and extent of arterial highways that are needed to nominally serve the ultimate development depicted by the land use element of the General Plan. The City of Menifee General Plan roadway cross-sections are illustrated on Figure 8.

Transit Service

The study area is currently served by the Riverside Transit Agency Routes 40, 61, and 74 along Bradley Road, Routes 61 and 74 along Antelope Road, Route 74 along Menifee Road, Routes 61 and 74 along Newport Road, and Route 61 along Scott Road. The existing bus routes provided within the study area are shown on Figure 9. Haun Road and Garbani Road are shown as having potential on-road transit service in the future as depicted in the City of Menifee General Plan Circulation Element.

Bikeway Network

The current City of Menifee General Plan includes the bikeway network as described in this section. The City of Menifee bike paths are illustrated on Figure 10. As shown on Figure 10, Haun Road is a Community Off-Road Bike Trail (Class I) adjacent to the project site. Haun Road maintains this classification from north of Newport Road to Wickerd Road where it transitions to a Subregional Route – On-Street Bike Lanes (Class II) to Keller Road. Garbani Road adjacent to the project site is classified as a Community On-Street Bike Lanes (Class II).

Newport Road and Scott Road are the primary east-west roadways providing access to/from the project site on a more regional basis. Newport Road is classified as a Community On-Street Bike Lanes (Class II) and Scott Road is classified as a Subregional Route – On-Street Bike Lanes (Class II).

Neighborhood Electric Vehicle Network

The current City of Menifee General Plan includes the neighborhood electric vehicle network as described in this section. The City of Menifee neighborhood electric vehicle network is illustrated on Figure 10.

Existing Pedestrian Facilities

Existing pedestrian facilities adjacent to the project site are shown on Figure 11.

Table 1

Roadway Segment Daily Capacities

Roadway Classification	Number of Lanes	Maximum Two-Way Volume (ADT)[1, 2]		
		LOS C	LOS D	LOS E
Collector	2	10,400	11,700	13,000
Secondary	4	20,700	23,300	25,900
Major	4	27,300	30,700	34,100
Arterial	4	29,600	33,400	37,000
Mountain Arterial	2	12,900	14,500	16,100
Mountain Arterial	4	25,500	28,700	31,900
Urban Arterial	6	45,000	50,600	56,300
Urban Arterial	8	69,000	78,000	87,000
Expressway	4	53,000	58,000	64,000
Expressway	6	79,000	87,000	95,000
Expressway	8	106,000	119,000	132,000
Freeway	4	80,000	91,000	100,000
Freeway	6	102,000	123,000	132,000
Freeway	8	136,000	164,000	176,000
Freeway	10	169,000	205,000	220,000
Ramp[3]	1	16,000	18,000	20,000

Level of Service	Volume to Capacity Ratio
A	0.000 - 0.600
B	0.601 - 0.700
C	0.701 - 0.800
D	0.801 - 0.900
E	0.901 - 1.000
F	>1.000

Notes:

(1) Source: City of Menifee Traffic Impact Analysis Guidelines (August 2015)/Riverside County Transportation Department.

(2) Average Daily Traffic Volume; LOS = Level of Service

(3) Ramp capacity is shown as a one-way volume.

Table 2
Existing Roadway Segment Capacity Analysis

Roadway	Segment		Menifee Roadway Standards[1]			Existing Conditions				Capacity Threshold	LOS[5]
	From	To	Classification	Lanes	Capacity	Lanes	Capacity[2]	ADT[3]	V/C[4]		
Garbani Road	Haun Road	Sherman Road	Major	4	34,100	3	25,500	2,516	0.10	Acceptable	A
Tupelo Street	Sherman Road	Bradley Road	**Unclassified**	2	13,000	2	13,000	2,580	0.20	Acceptable	A
Sherman Road	Tupelo Street	Garbani Road	**Collector**	2	13,000	2	13,000	2,437	0.19	Acceptable	A
Haun Road	Newport Road	La Piedra Road	**Major**	4	34,100	4	34,100	14,320	0.42	Acceptable	A
	La Piedra Road	Holland Road	Major	4	34,100	3	25,500	15,628	0.61	Acceptable	B
	Holland Road	Garbani Road	Major	4	34,100	2	13,000	10,560	0.81	Approaches Capacity	D
	Garbani Road	Scott Road	Major	4	34,100	2	13,000	12,301	0.95	Approaches Capacity	E
Bradley Road	Newport Road	Holland Road	**Major**	4	34,100	4	34,100	10,484	0.31	Acceptable	A
	Holland Road	Tupelo Street	Major	4	34,100	2	13,000	5,456	0.42	Acceptable	A
Scott Road	West of Haun Road	Haun Road	Urban Arterial	6	56,300	2	13,000	14,297	1.10	Potentially Exceeds Capacity	F
	Haun Road	I-215 Freeway	Urban Arterial	6	56,300	3	28,100	23,858	0.85	Approaches Capacity	D
	I-215 Freeway	Antelope Road	Urban Arterial	6	56,300	3	28,100	35,206	1.25	Potentially Exceeds Capacity	F
Newport Road	West of Bradley Road	Bradley Road	Urban Arterial	6	56,300	4	37,500	34,394	0.92	Approaches Capacity	E
	Bradley Road	Haun Road	**Urban Arterial**	6	56,300	6	56,300	43,798	0.78	Acceptable	C
	Antelope Road	Menifee Road	**Urban Arterial**	6	56,300	6	56,300	44,308	0.79	Acceptable	C
	Menifee Road	East of Menifee Road	**Urban Arterial**	6	56,300	6	56,300	33,579	0.60	Acceptable	A

Notes:

(1) The City of Menifee roadway maximum capacity at Level of Service "E" (see Table 1). **Bold** denotes roadway is currently built at its ultimate cross-section width.

(2) Maximum capacity at Level of Service "E" based on existing number of lanes. Ultimate standard capacity is only assumed if the roadway is constructed at its ultimate cross-section width, including design improvement features (lane width, shoulder width, bike lanes or medians).

(3) ADT = Average Daily Traffic

(4) V/C = Volume to Capacity Ratio.

(5) LOS = Level of Service

Table 3
Existing Intersection Delay and Level of Service

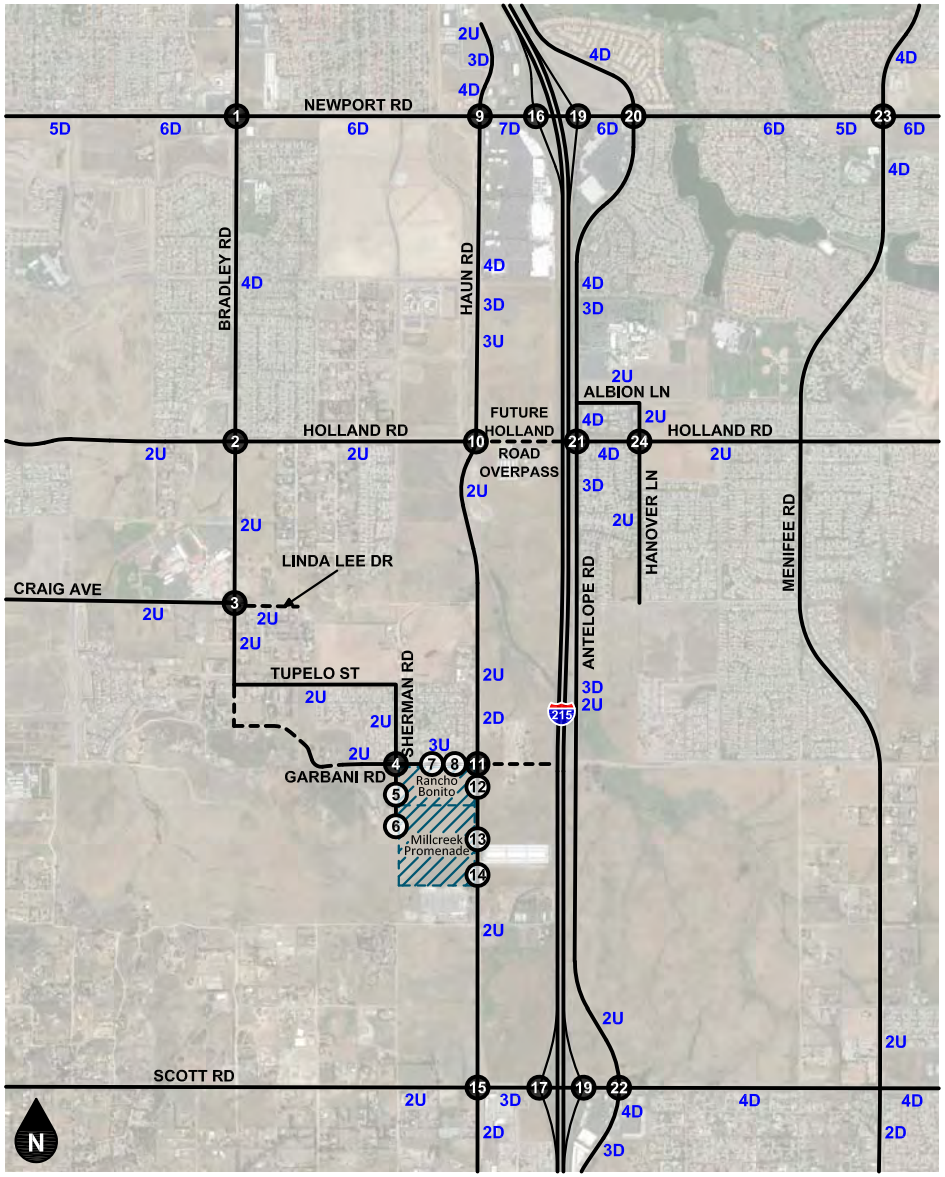
Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Bradley Road (NS) at:															
Newport Road (EW) - #1	TS	1	1	1>	1	1.5	0.5	1	2.5	0.5	2	3	1	28.9-C	20.3-C
Holland Road (EW) - #2	TS	1	0.5	0.5	1	1	1	1	0.5	0.5	1	1	d	36.6-D	15.9-B
Craig Avenue / Linda Lee Drive (EW) - #3	AWS	0	<1>	0	0.5	0.5	1	0	<1>	0	0	<1>	0	21.7-C	8.4-A
Sherman Road (NS) at:															
Garbani Road (EW) - #4	AWS	0	0	0	0.5	0	0.5	0.5	0.5	0	0	1	1	16.3-C	7.8-A
Haun Road (NS) at:															
Newport Road (EW) - #9	TS	2	1	2>	2	1.5	0.5	2	3	1	2	2.5	0.5	23.5-C	32.8-C
Holland Road (EW) - #10	AWS	1	0.5	0.5	1	1	1	1	1	1	0	<1>	0	24.7-C	19.4-C
Garbani Road (EW) - #11	CSS	1	0.5	0.5	1	1	1	1	0.5	0.5	0	<1>	0	240.6-F	27.0-D
Scott Road (EW) - #15	TS	1	1	1	1.3	0.3	0.3	1	0.5	0.5	1	1	1	32.0-C	18.8-B
I-215 Freeway SB Ramps (NS) at:															
Newport Road (EW) - #16	TS	0	0	0	1.5	0	1.5	0	4	1>>	0	3	1>>	9.0-A	12.6-B
Scott Road (EW) - #17	TS	0	0	0	1	0.5	0.5	0	1	1	1	1	0	22.5-C	25.5-C
I-215 Freeway NB Ramps (NS) at:															
Newport Road (EW) - #18	TS	1.5	0	1.5	0	0	0	0	3	1>>	0	4	1>>	9.5-A	18.7-B
Scott Road (EW) - #19	TS	0.5	0.5	1	0	0	0	1	1	0	0	1	1	21.1-C	26.0-C
Antelope Road (NS) at:															
Newport Road (EW) - #20	TS	2	1	1	2	0.5	1.5	2	3	d	2	2.5	0.5	30.1-C	41.2-D
Holland Road (EW) - #21	TS	0	2	d	1	2	0	0	0	0	1.5	0	1.5	9.1-A	8.9-A
Scott Road (EW) - #22	TS	2	1	1	1	1	1	1	1.5	0.5	1	1.5	0.5	33.3-C	28.9-C
Menifee Road (NS) at:															
Newport Road (EW) - #23	TS	2	2	1>	1	2	1>	2	1.5	0.5	2	3	1	26.0-C	21.6-C

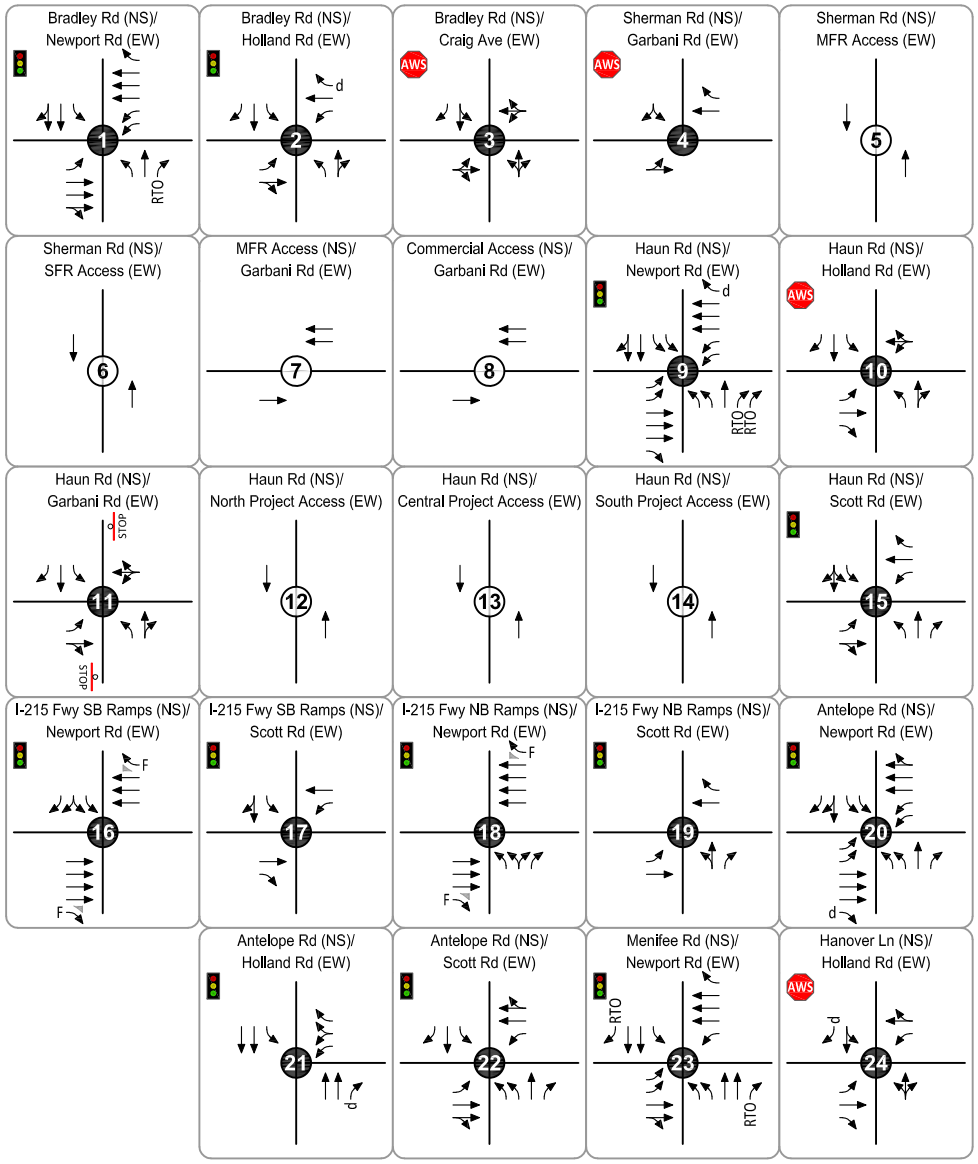
Notes:

(1) When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = De Facto Right Turn; > = Right Turn Overlap; >> = Free Right Turn; <1> = Shared Left/Through/Right Turn Lane

(2) Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 6.00-00. Per the 2010 Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, the delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

(3) TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop

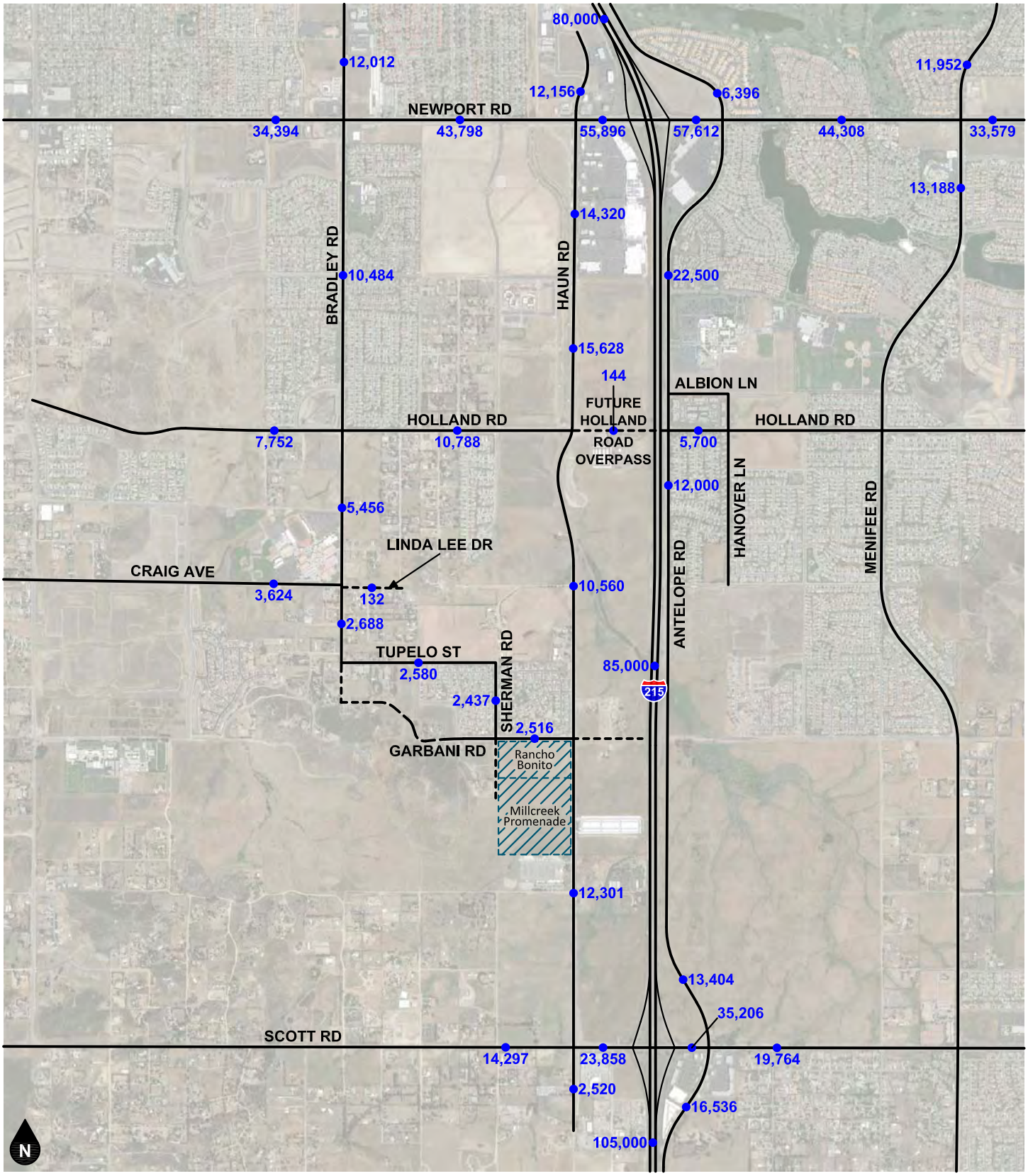




Legend

- Traffic Signal
- All Way Stop
- Stop Sign
- #D #-Lane Divided Roadway
- #U #-Lane Undivided Roadway
- Existing Lane
- RTO Right Turn Overlap
- F Free Right Turn Lane
- d De Facto Right Turn Lane

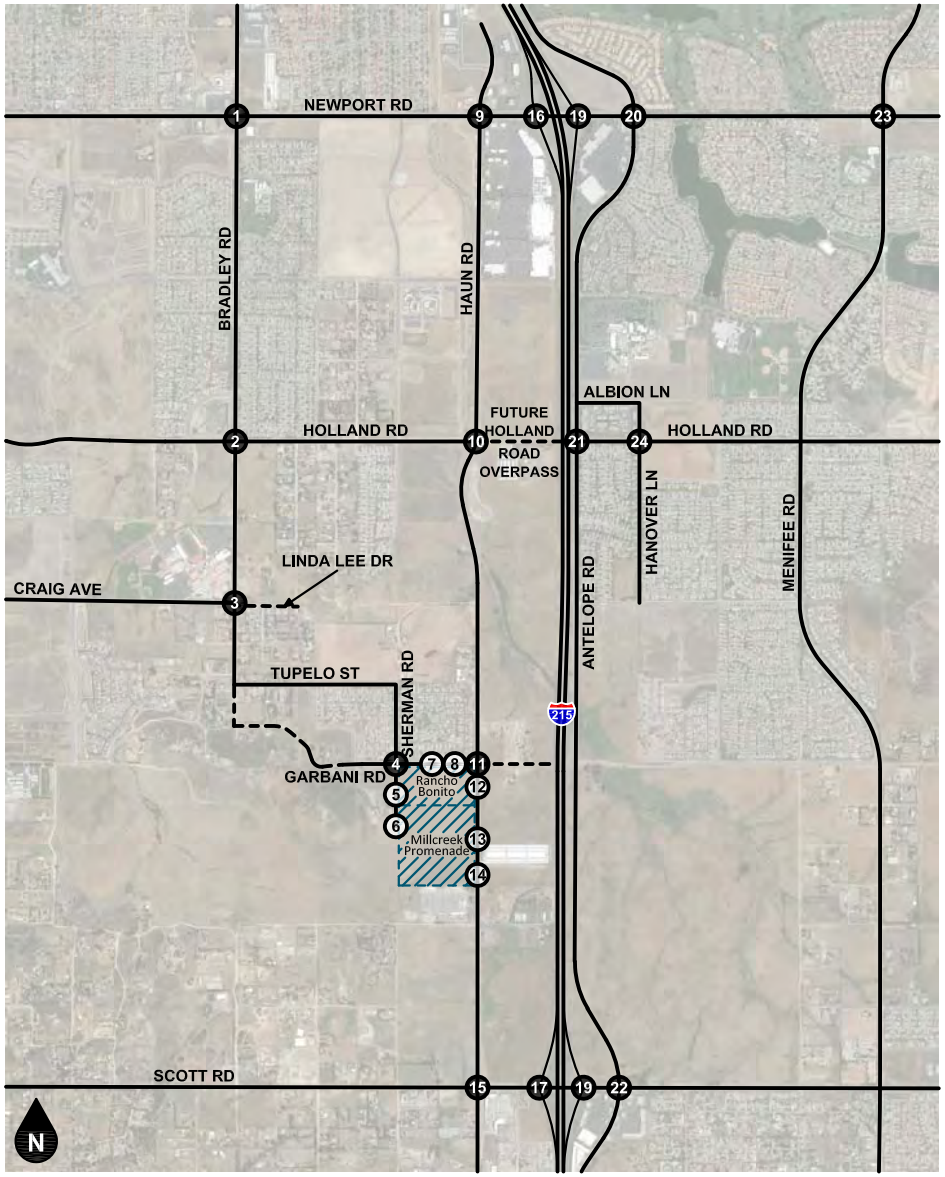
Figure 3
Existing Lane Geometry and Intersection Traffic Controls

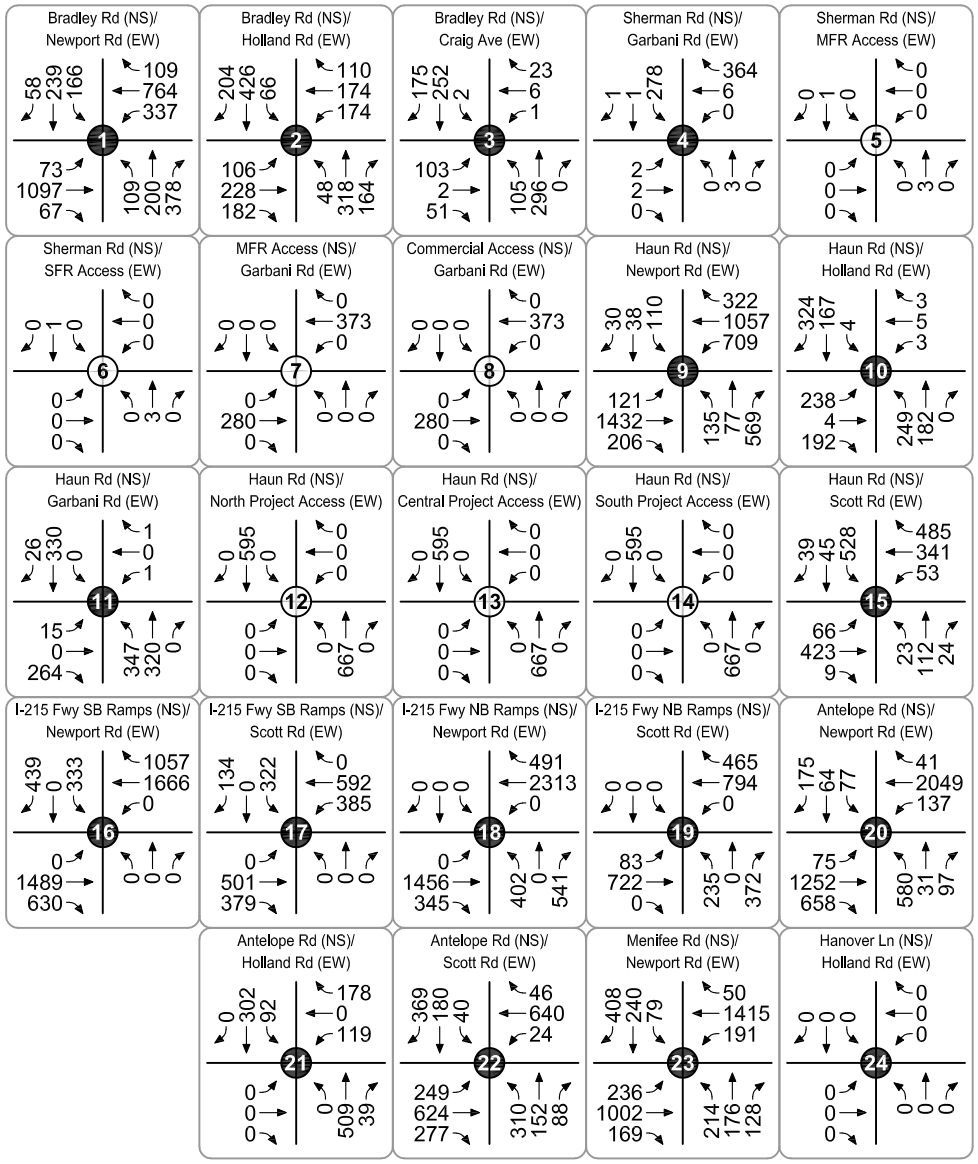


Legend

●## Vehicles Per Day

Figure 4
Existing Average Daily Traffic Volumes





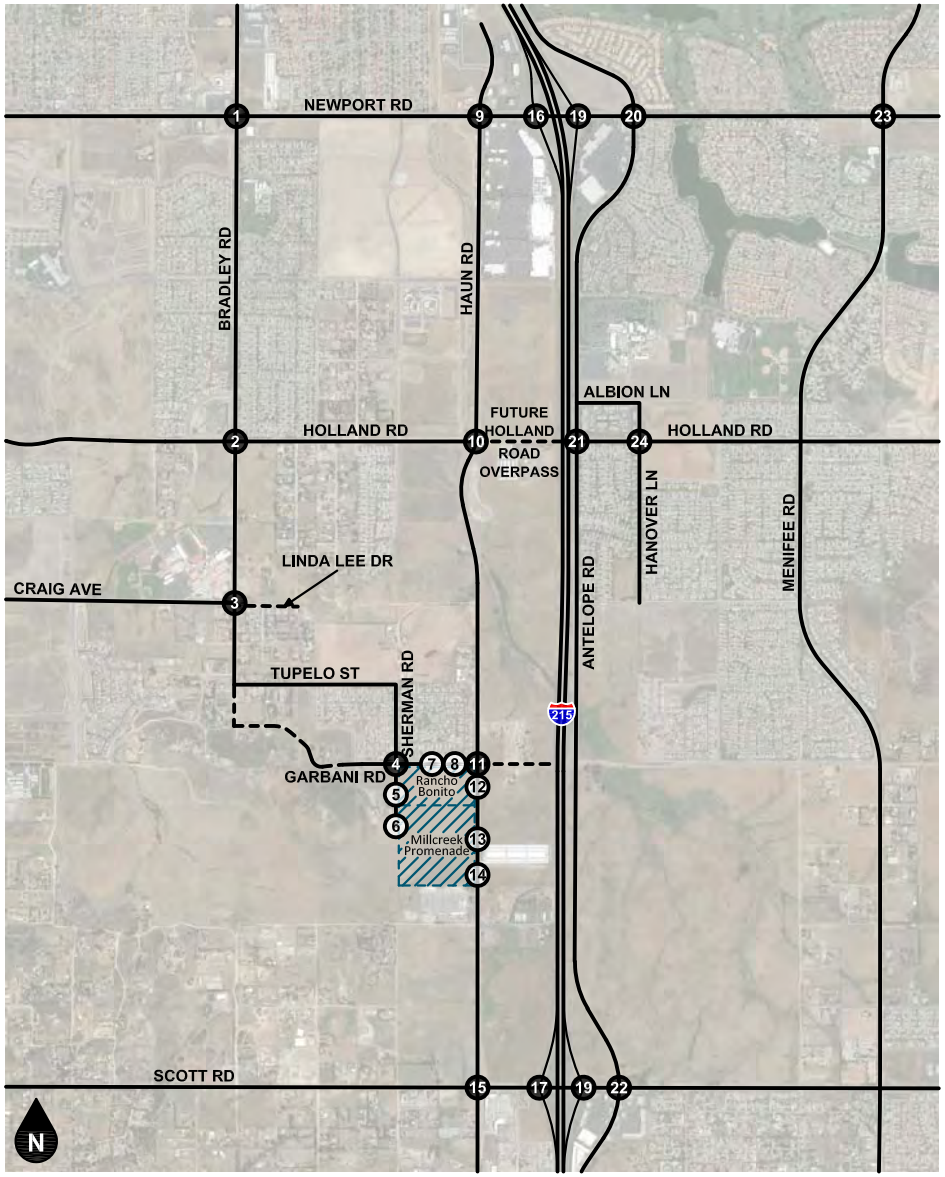
Legend

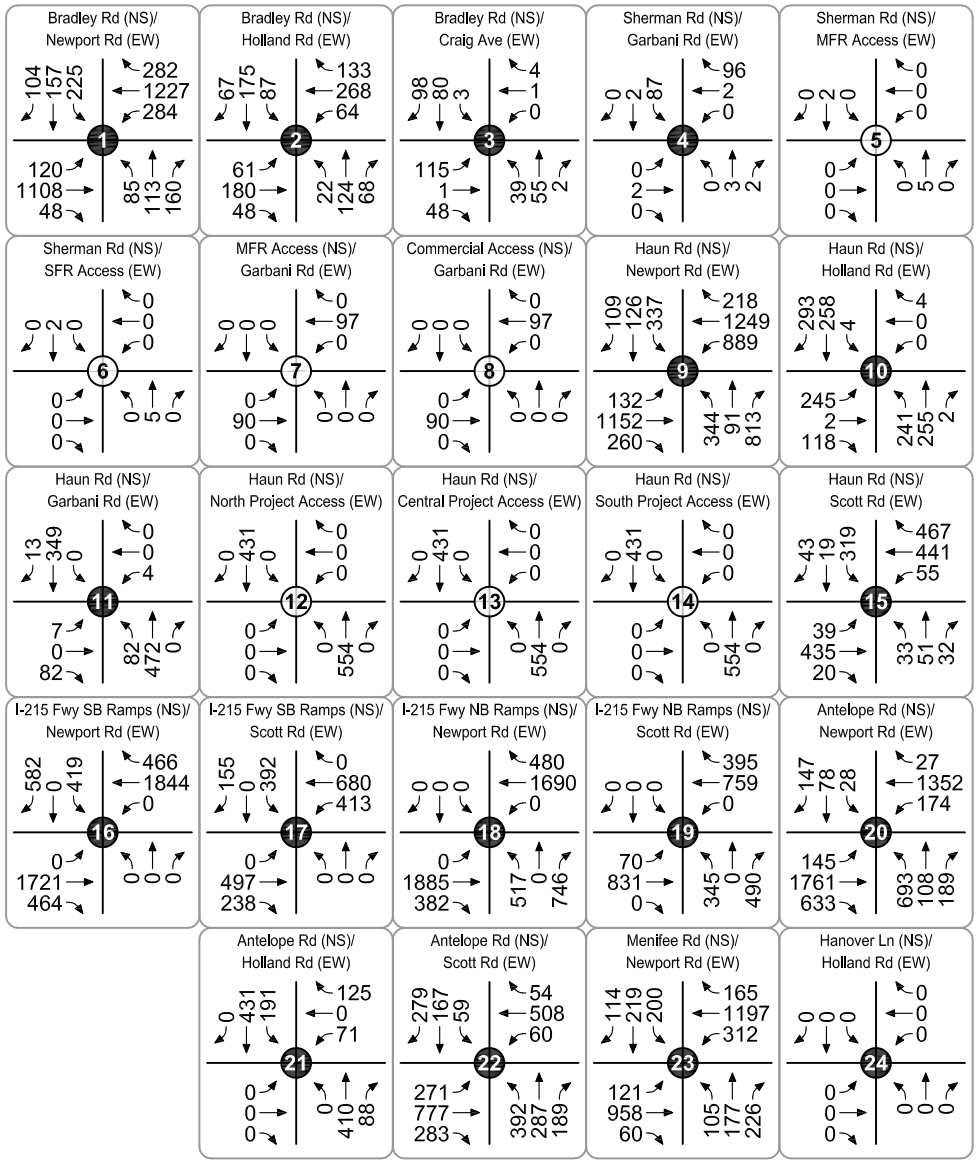
(#) Study Intersection

(#) Project Driveway

Figure 5

Existing AM Peak Hour Intersection Turning Movement Volumes





Legend

(#) Study Intersection

(#) Project Driveway

Figure 6

Existing PM Peak Hour Intersection Turning Movement Volumes

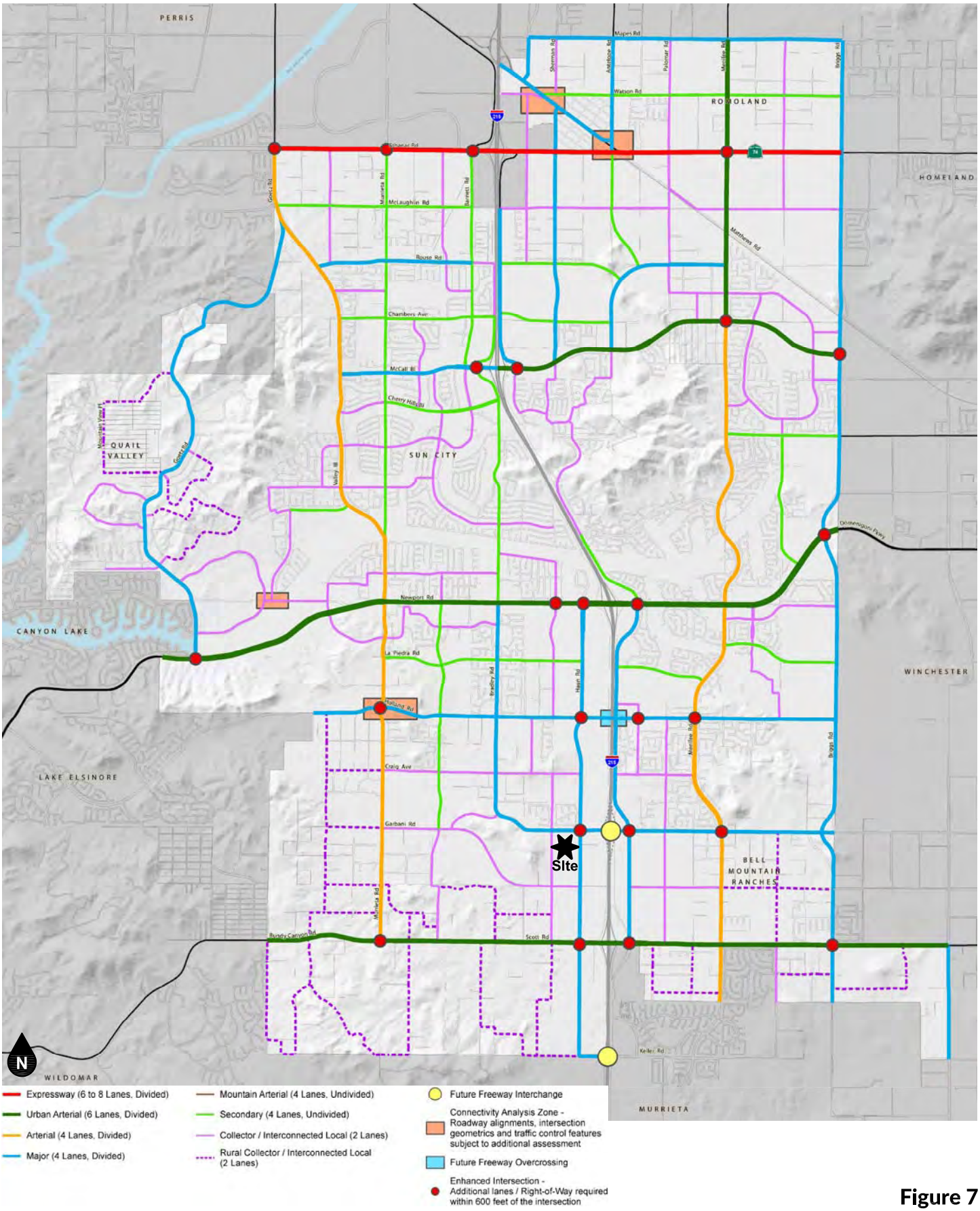


Figure 7
City of Menifee General Plan Circulation Element

Source: City of Menifee

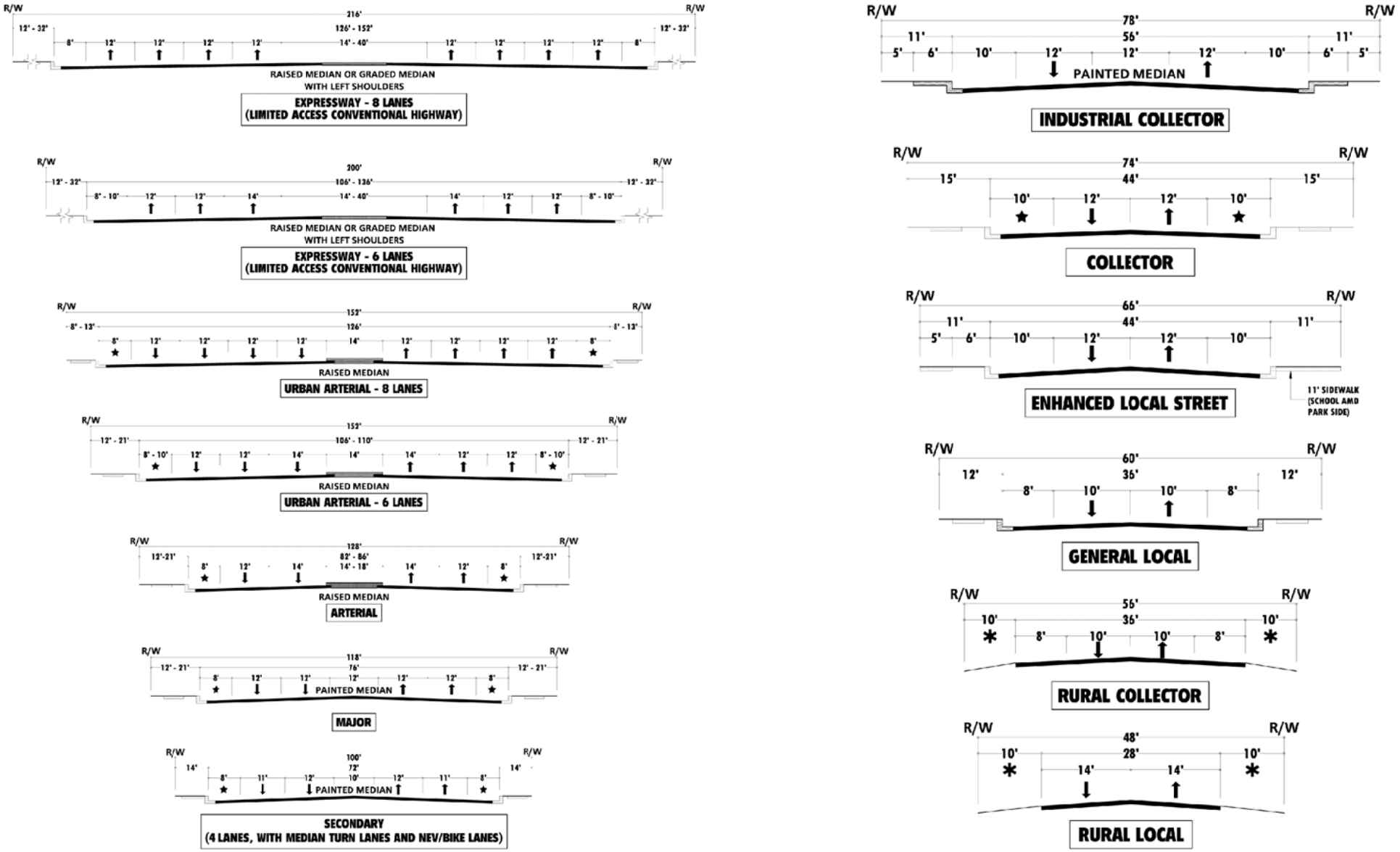


Figure 8
City of Menifee General Plan Roadway Cross-Sections

Source: City of Menifee

Figure 9
Riverside Transit Agency System Map

Source: Riverside Transit Agency

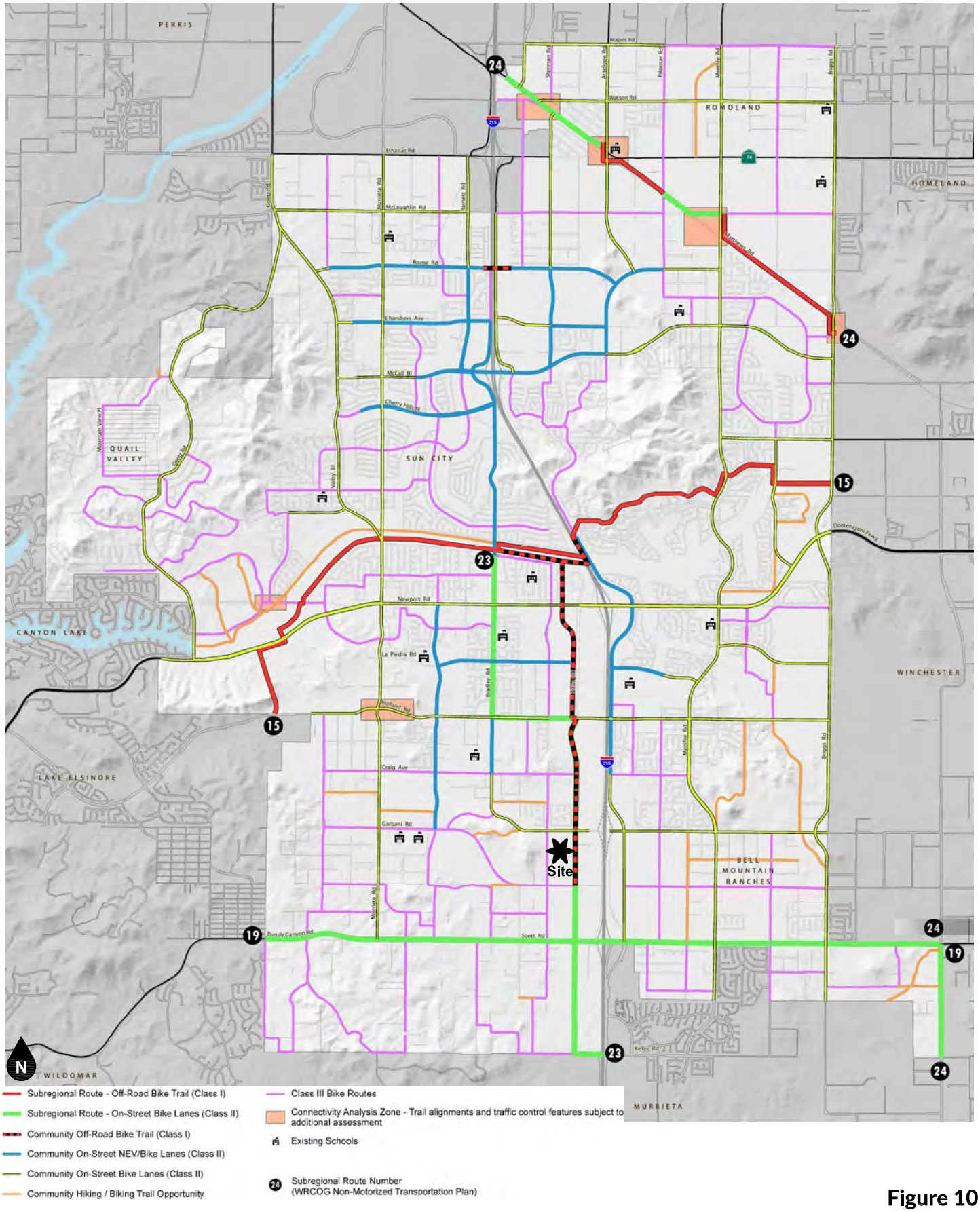
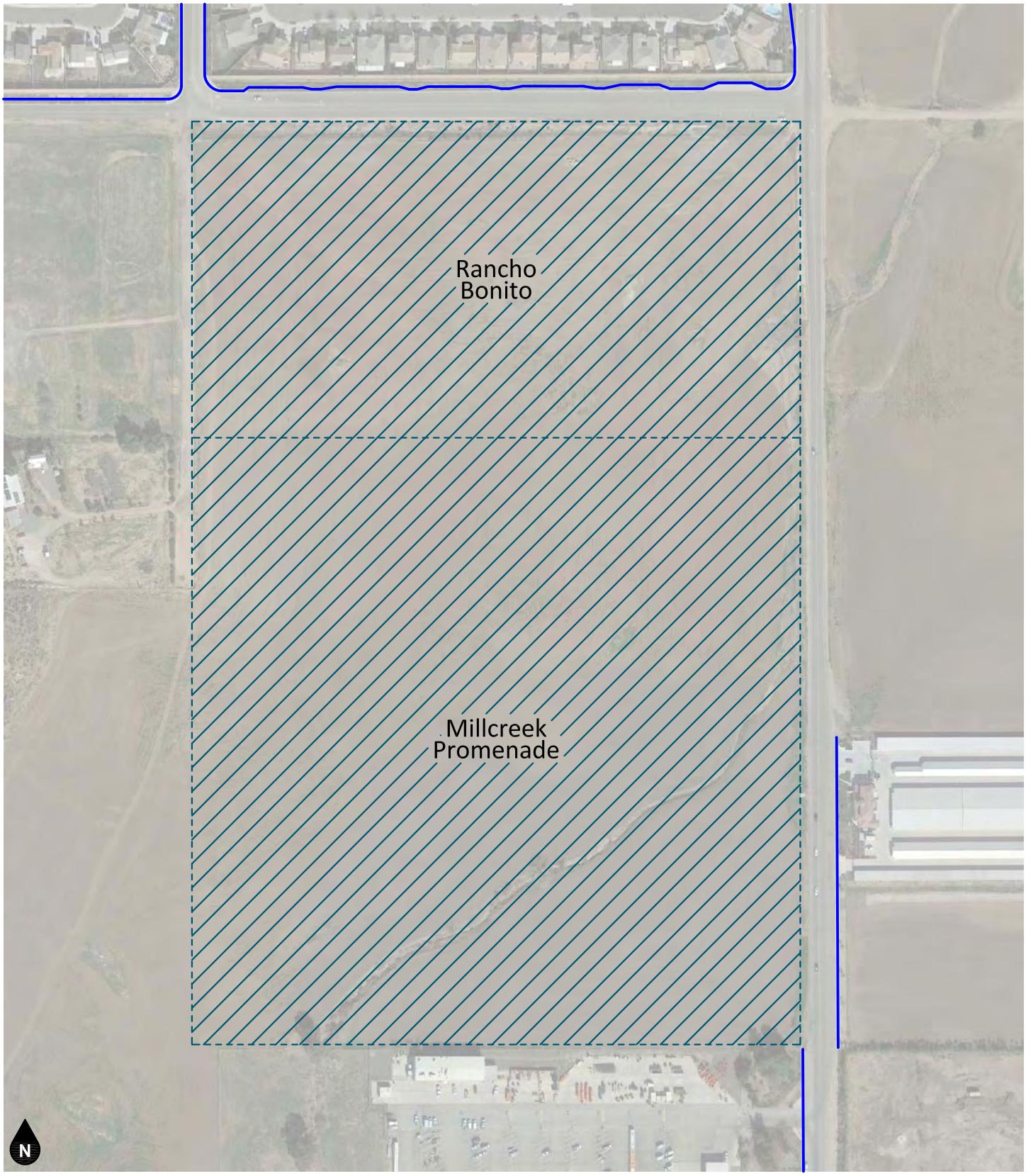


Figure 10
City of Menifee General Plan Proposed Bikeway and Community Pedestrian Network

Source: City of



Legend
Sidewalk

Figure 11
Existing Pedestrian Facilities

3. PROPOSED PROJECT

The project site is proposed to be developed with 210 multi-family housing dwelling units, 204 single-family detached residential dwelling units, 38,400 square feet of industrial park, 122,727 square feet of commercial retail, and 8,000 square feet of high-turnover (sit-down) restaurant. The build out year for the project is 2022.

Phase 1 includes the commercial retail, industrial park, and high-turnover (sit-down) restaurant components of the proposed project and is anticipated for an Opening Year of 2020.

Access to the commercial component of the project is proposed to be provided via full access to Haun Road at the north and central accesses, restricted access (right turns in/out only) at the south access on Haun Road, and restricted access (right turns in/out only) to Garbani Road. Access to the multi-family residential component of the project is proposed to be provided via full access to Sherman Road and Garbani Road. Access to the restaurant and industrial components of the project is proposed to be provided via full access to Haun Road. Access to the single-family residential component of the Millcreek Promenade project is proposed to be provided via full access to Sherman Road and Haun Road.

TRIP GENERATION

The trips generated by the project are determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are predicated on the assumption that energy costs, the availability of roadway capacity, the availability of vehicles to drive, and life styles remain similar to what are known today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for daily trips, AM peak hour inbound and outbound trips, and PM peak hour inbound and outbound trips for the proposed land uses. By multiplying the trip generation rates by the land use quantities, the traffic volumes are determined. Table 4 exhibits the trip generation rates, project peak hour volumes, and project daily traffic volumes. The trip generation rates are from the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

The proposed development for Phase 1 (2020) is projected to generate a total of approximately 6,764 daily vehicle trips of which 264 will occur during the AM peak hour and 619 of which occur during the PM peak hour.

The proposed development at Buildout (2022) is projected to generate a total of approximately 9,881 daily vehicle trips of which 486 will occur during the AM peak hour and 907 of which occur during the PM peak hour.

It should be noted that for commercial retail and high-turnover (sit-down) restaurant land uses, a portion of the trips would come from pass-by trips from adjacent roadways, trips that are currently on the roadway system. In order to analyze pass-by trips, the trips from the project have been reduced as a result of pass-by trips (see Table 4) based upon scoping discussions with the City of Menifee Transportation Department staff.

Traffic volumes shown in Table 4 consist of the total trips generated for each project land use. As a residential trip generated by the project will also be making trips to a commercial retail and/or high-turnover (sit-down) restaurant land use within the project, a double counting of those trips occurs. In order to analyze a "conservative" scenario, the traffic volumes from the project site have been reduced by 10% as a result of the internal interaction between the proposed land uses.

TRIP GENERATION COMPARISON

At the request of City of Menifee Transportation Department staff, a trip generation comparison is included in Appendix F. The trip generation comparison depicts the trip generation rates for the proposed land uses versus potential land uses based on the current M-SC/I-P zoning.

TRIP DISTRIBUTION

To determine the trip distributions for the proposed project, peak hour intersection turning movement counts of the existing directional distribution of traffic for existing areas in the vicinity of the site, and other additional information on future development and traffic impacts in the area were reviewed.

Figures 12 to 20 contain the directional distributions of the project trips for the proposed land uses.

TRIP ASSIGNMENT

Based on the identified trip generation and distributions, project average daily traffic volumes without Holland Road Overpass have been calculated and shown on Figures 21. Figure 22 shows the project average daily traffic volumes with Holland Overpass. AM and PM peak hour intersection turning movement volumes expected from the project without Holland Road Overpass are shown on Figures 23 and 24, respectively. AM and PM peak hour intersection turning movement volumes expected from the project without Holland Road Overpass are shown on Figures 25 and 26, respectively.

MODAL SPLIT

The trip reducing potential of public transit has not been considered in this report. Essentially the project trip projections are conservative in that public transit might be able to reduce the traffic volumes.

Table 4
Project Trip Generation

Land Use	Quantity	Units[2]	Trip Generation[1]						
			Morning Peak Hour			Evening Hour			Daily
			Inbound	Outbound	Total	Inbound	Outbound	Total	
Trip Generation Rates									
Multi-Family Housing (Low-Rise)	210	DU	0.11	0.35	0.46	0.35	0.21	0.56	7.32
Single-Family Detached Residential	204	DU	0.19	0.56	0.74	0.62	0.37	0.99	9.44
Industrial Park	38.400	TSF	0.32	0.08	0.40	0.08	0.32	0.40	3.37
High-Turnover (Sit-Down) Restaurant	8.000	TSF	5.47	4.47	9.94	6.06	3.71	9.77	112.18
Commercial Retail	122.727	TSF	T=0.50(X)+151.78; 62% In, 38% Out			Ln(T)=0.74Ln(X)+2.89; 48%, In 52% Out			Ln(T)=0.68Ln(X)+5.57
Phase 1 - 2020 (Industrial, Commercial, and Restaurant Only)									
Trips Generated									
Industrial Park	38.400	TSF	12	3	15	3	12	15	129
Commercial Retail	122.727	TSF	132	81	213	304	329	633	6,910
- Pass-By Trip Reduction (15%)[3]			-20	-12	-32	-46	-49	-95	-1,037
High-Turnover (Sit-Down) Restaurant	8.000	TSF	44	36	80	48	30	78	897
- Pass-By Trip Reduction (15%)[3]			-7	-5	-12	-7	-5	-12	-135
Total			161	103	264	302	317	619	6,764
Phase 2 - 2022									
Trips Generated									
Multi-Family Housing (Low-Rise)	210	DU	22	74	96	74	44	118	1,537
Single-Family Detached Residential	204	DU	38	113	151	127	75	202	1,926
Industrial Park	38.400	TSF	12	3	15	3	12	15	129
Commercial Retail	122.727	TSF	132	81	213	304	329	633	6,910
- Pass-By Trip Reduction (15%)[3]			-20	-12	-32	-46	-49	-95	-1,037
High-Turnover (Sit-Down) Restaurant	8.000	TSF	44	36	80	48	30	78	897
- Pass-By Trip Reduction (15%)[3]			-7	-5	-12	-7	-5	-12	-135
Subtotal			221	290	511	503	436	939	10,227
Internal Capture (10%)[4]			-6	-19	-25	-20	-12	-32	-346
Total			215	271	486	483	424	907	9,881

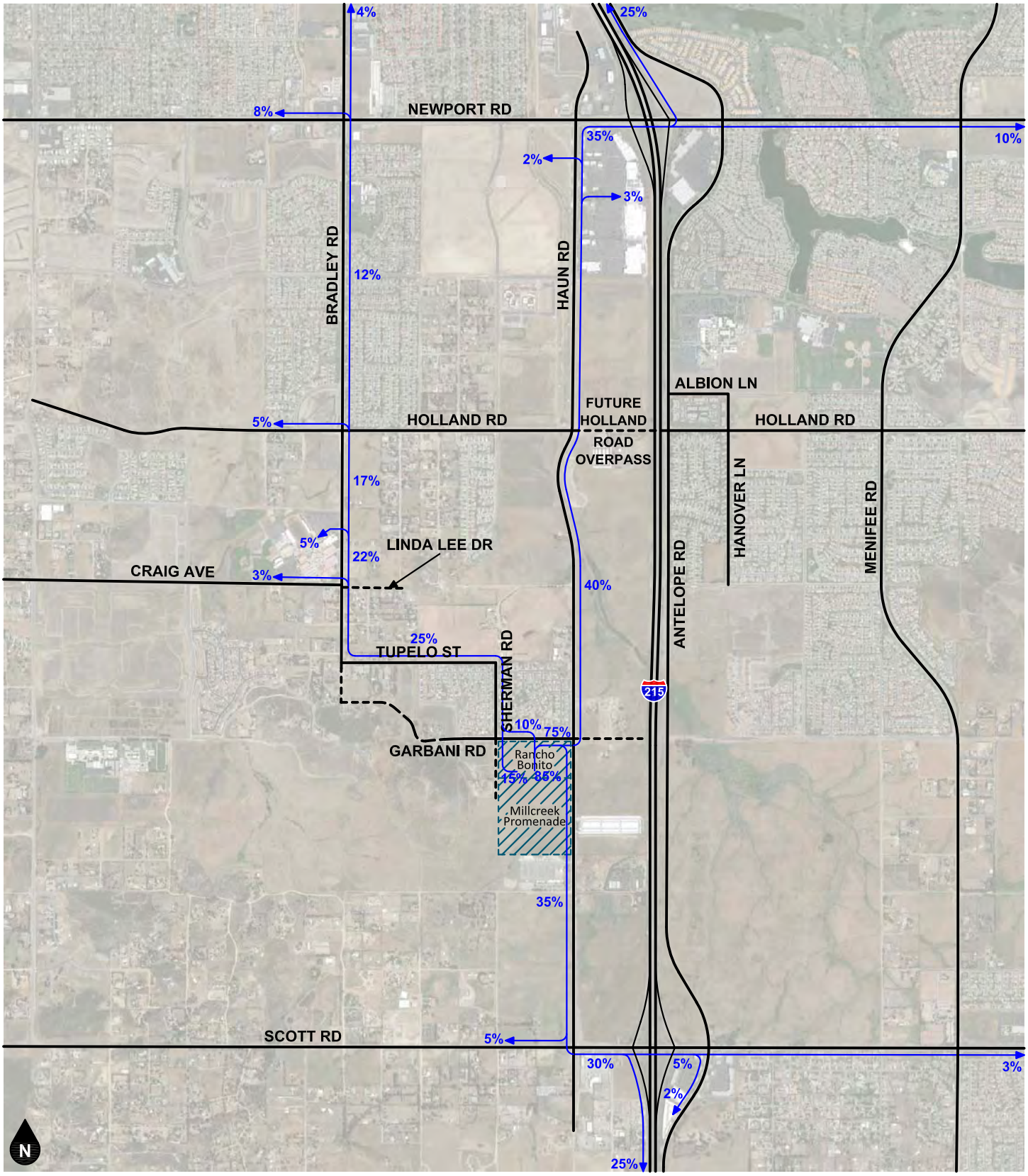
Notes:

(1) Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Codes 130, 210, 220, 820, and 932.

(2) DU = Dwelling Units; TSF = Thousand Square Feet

(3) Pass-by reduction based on the commercial retail and restaurant trip generation minus the internal interaction reduction.

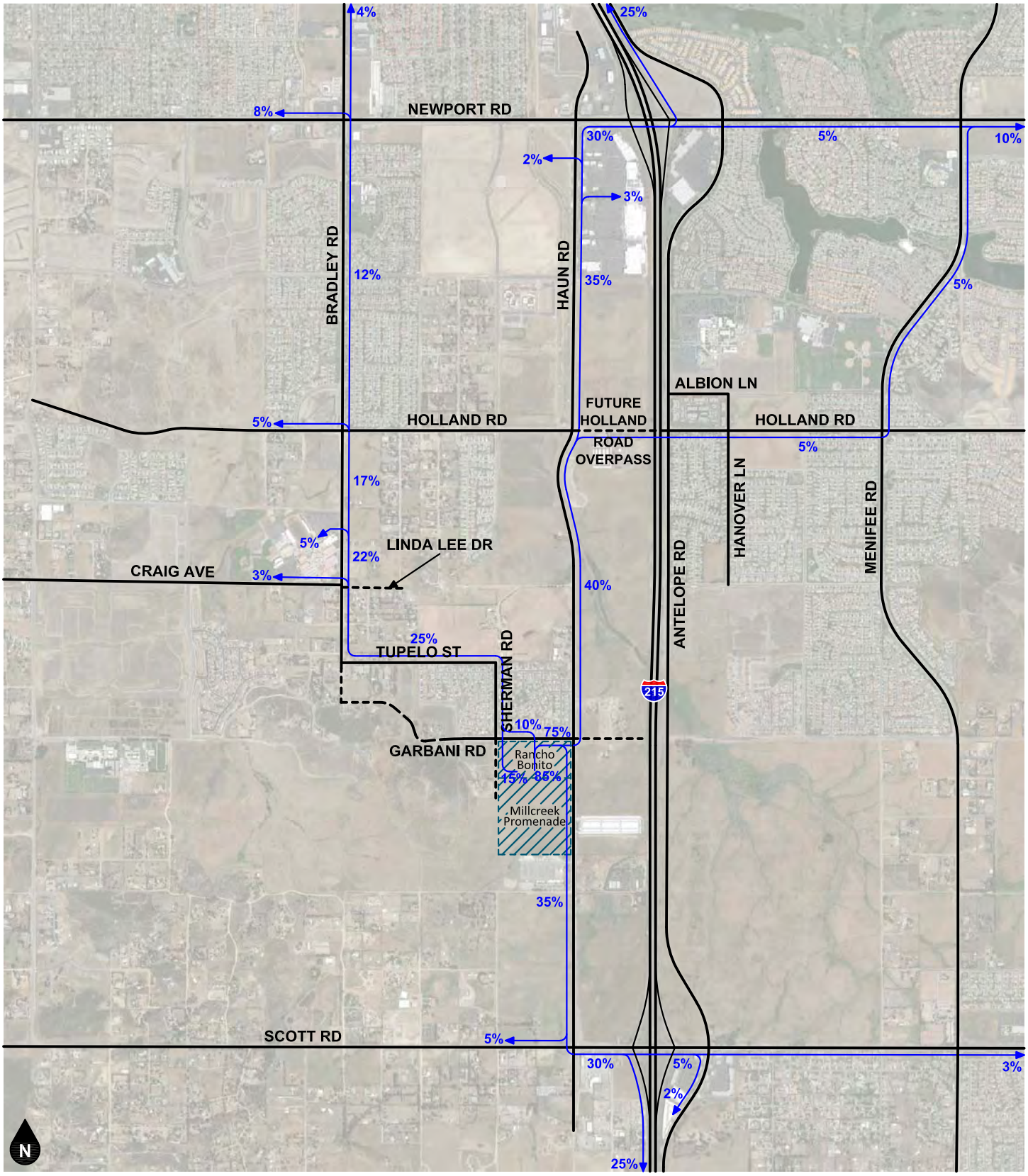
(4) Internal capture reduction based on 10% of the lowest generating end of trip between the residential land uses and the other combined land uses.



Legend

10% Percent To/From Project

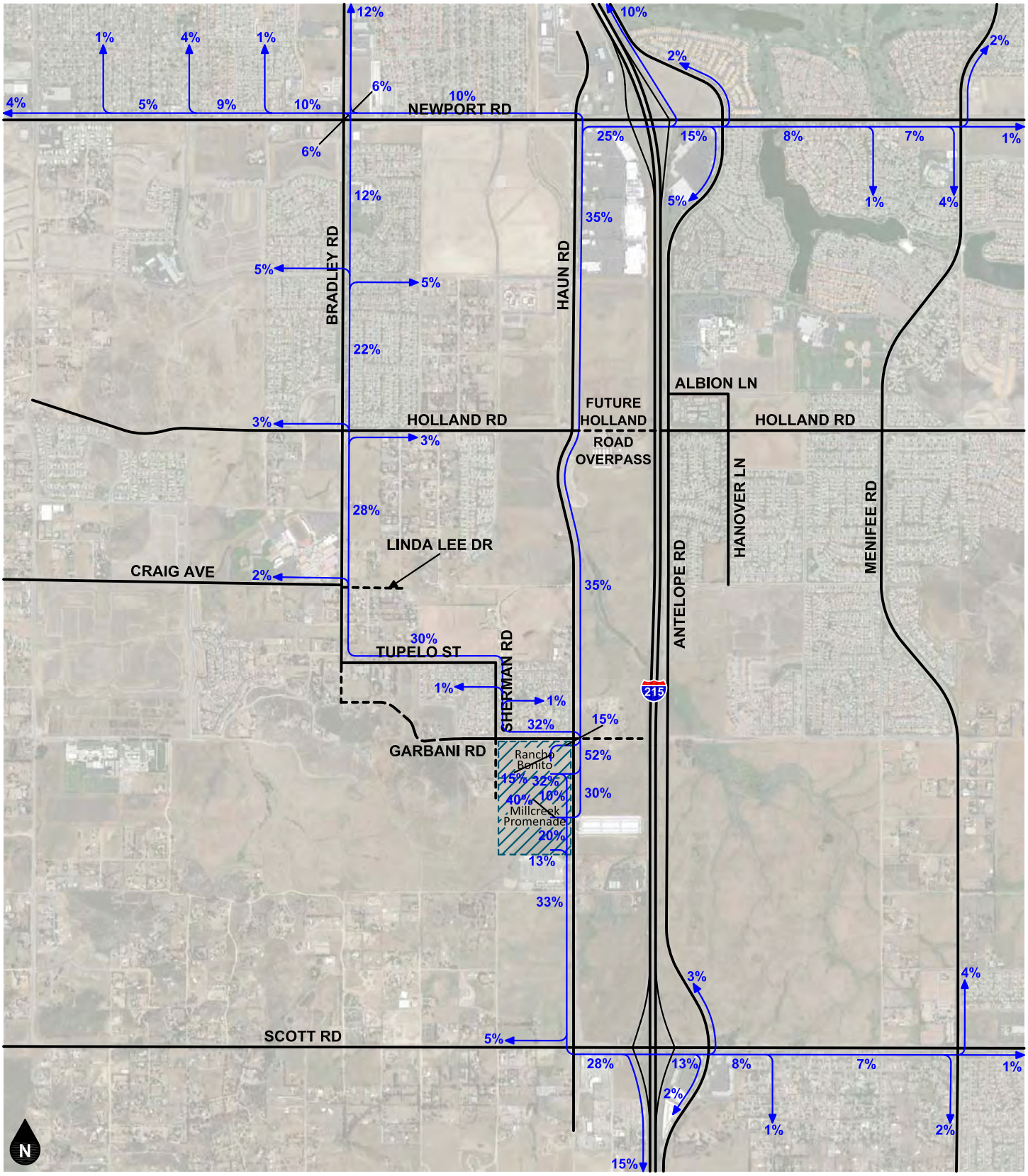
Figure 12
Project Trip Distribution - Multi-Family Residential (Without Holland Road Overpass)



Legend

10% Percent To/From Project

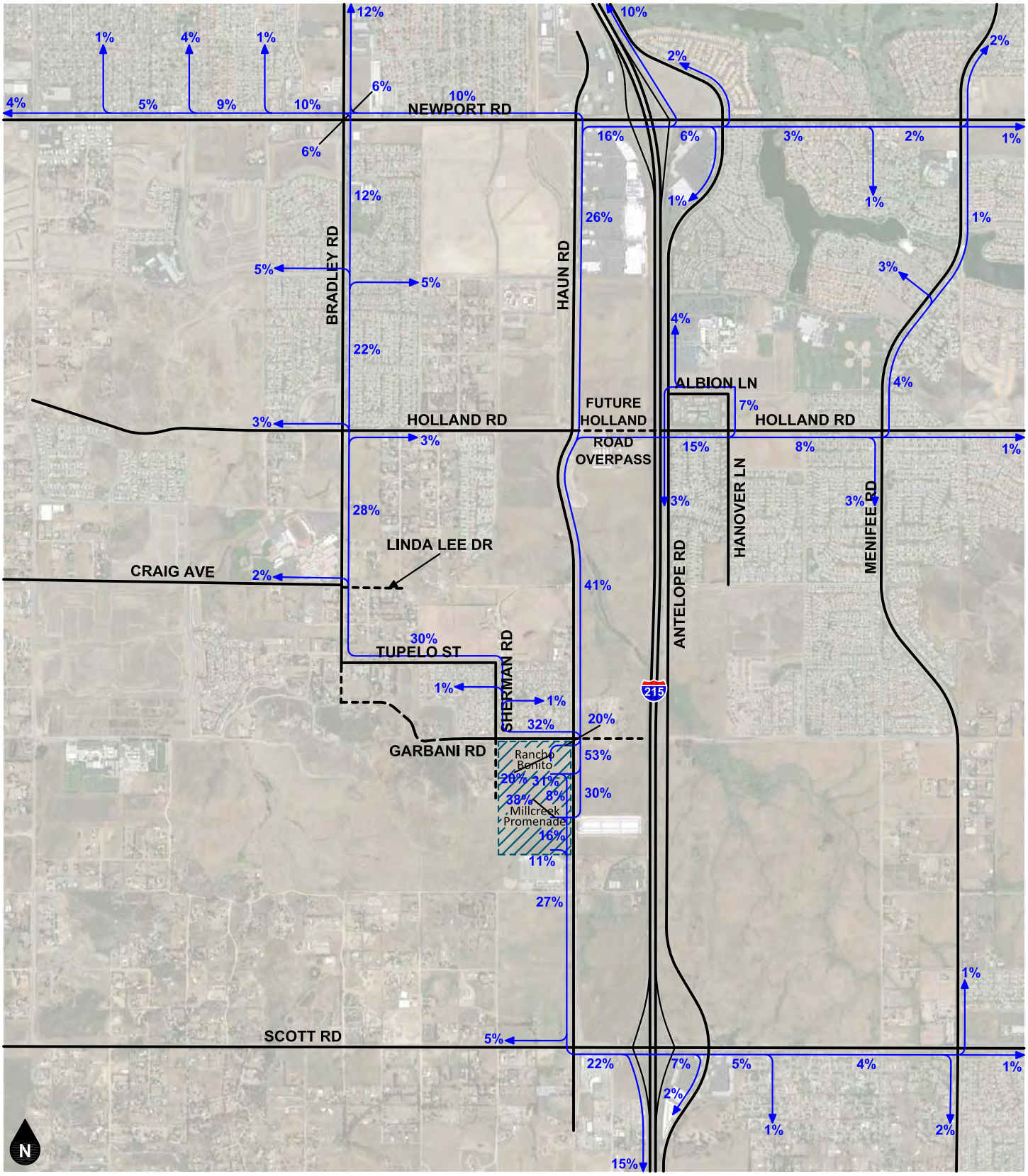
Figure 13
Project Trip Distribution - Multi-Family Residential
(With Holland Road Overpass)



Legend

10% Percent To/From Project

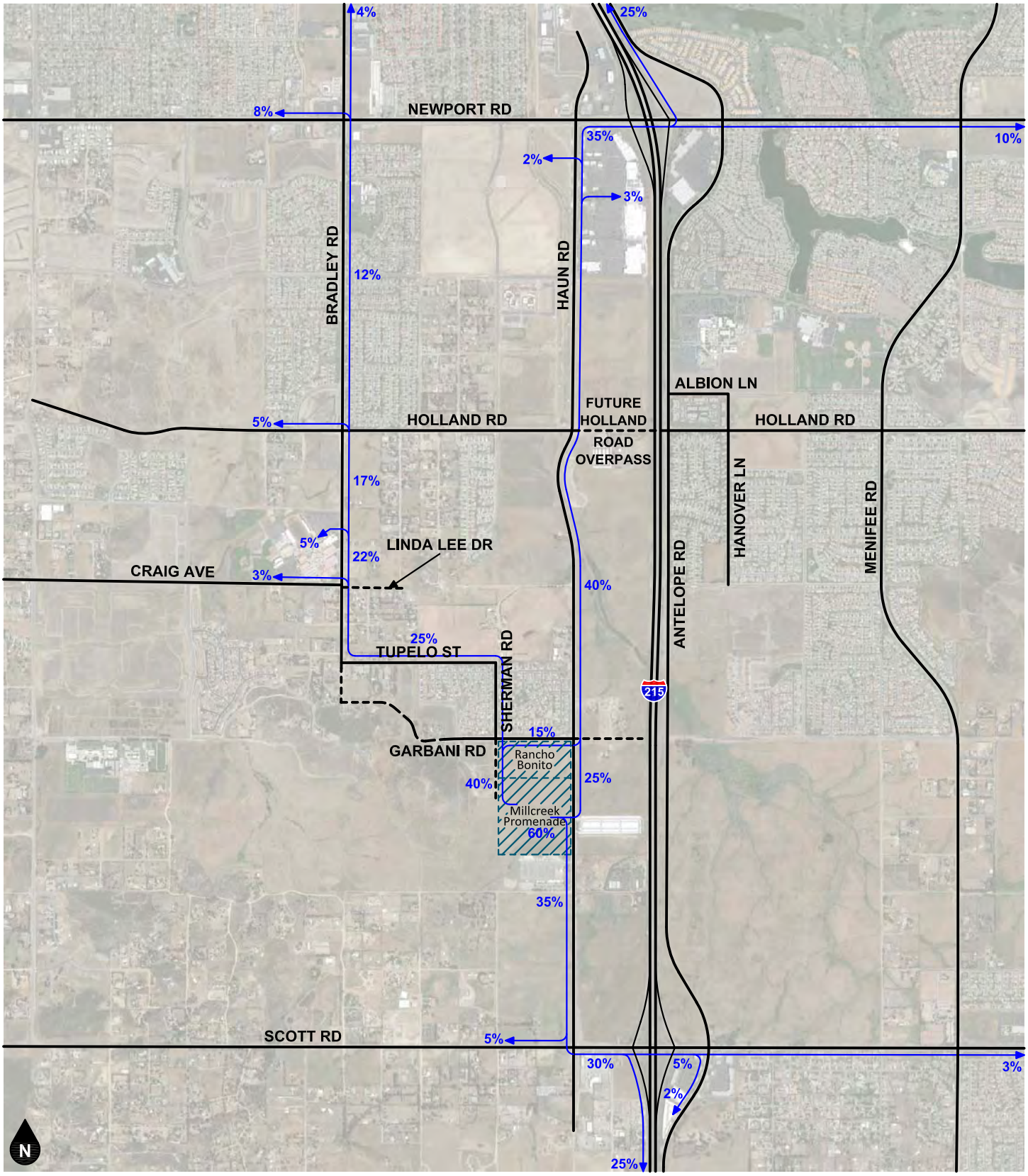
Figure 14
Project Trip Distribution - Commercial Retail
(Without Holland Road Overpass)



Legend

10% Percent To/From Project

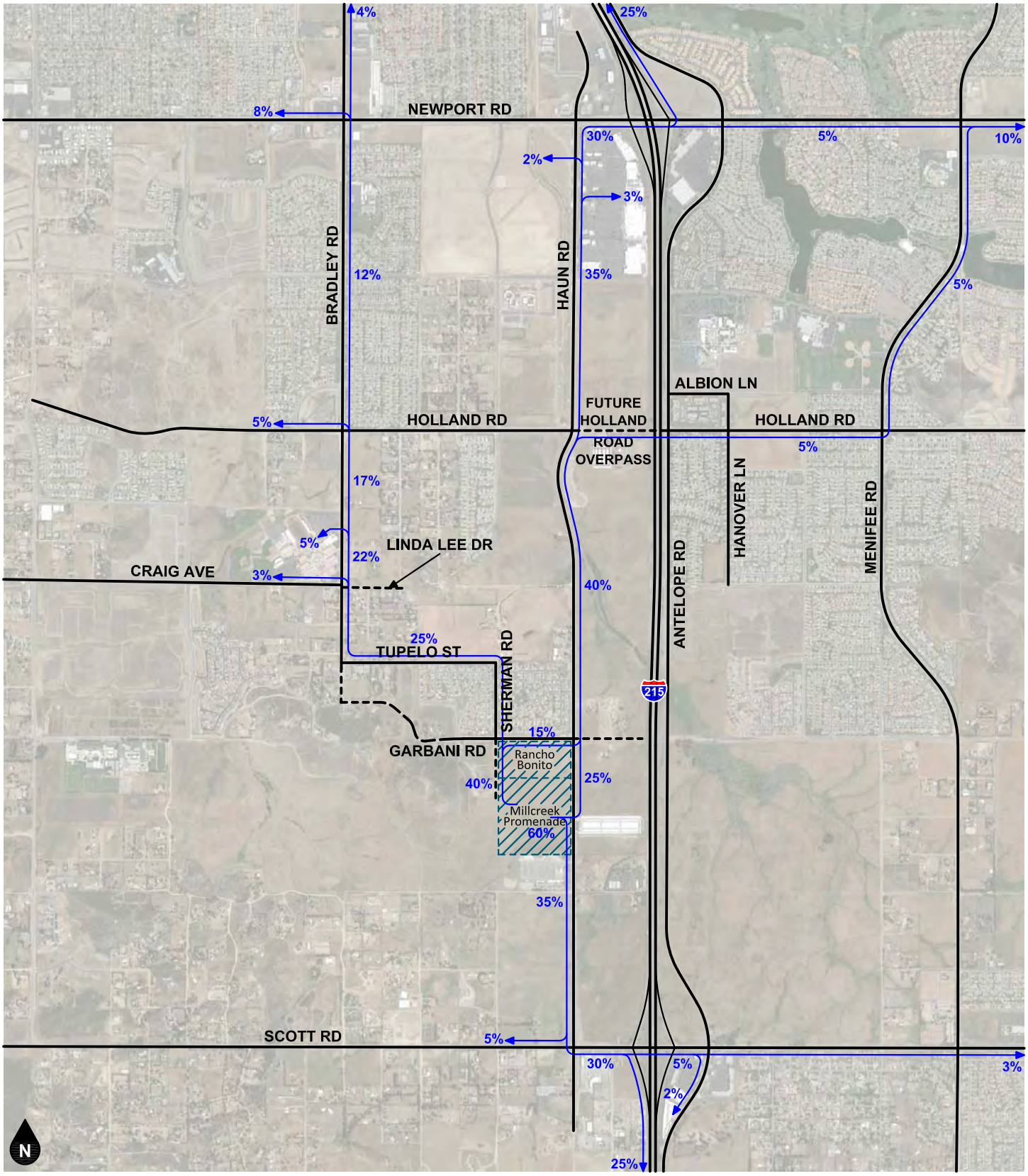
Figure 15
Project Trip Distribution - Commercial Retail
(With Holland Road Overpass)



Legend

10% Percent To/From Project

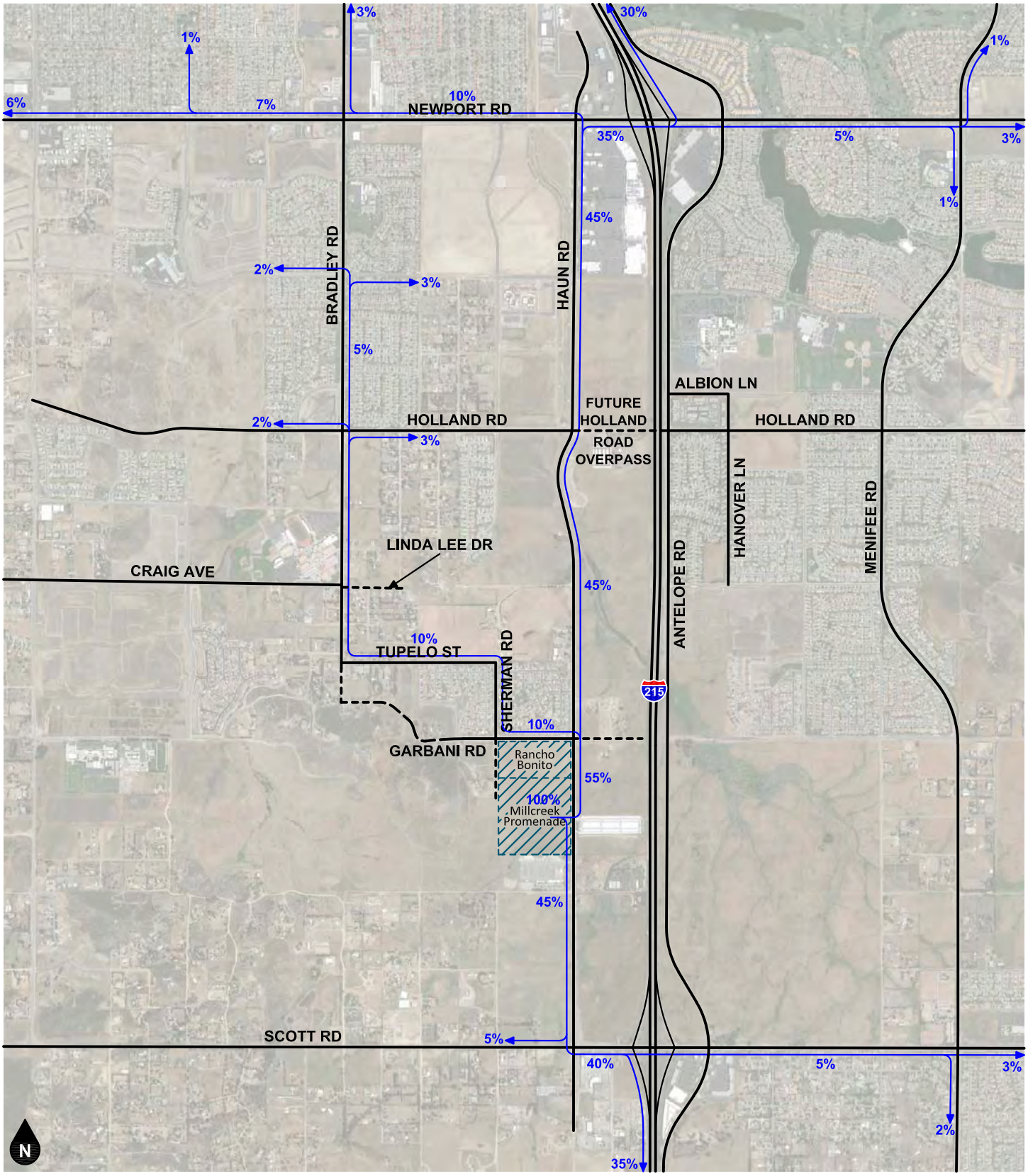
Figure 16
Project Trip Distribution - Single-Family Residential (Without Holland Road Overpass)



Legend

10% Percent To/From Project

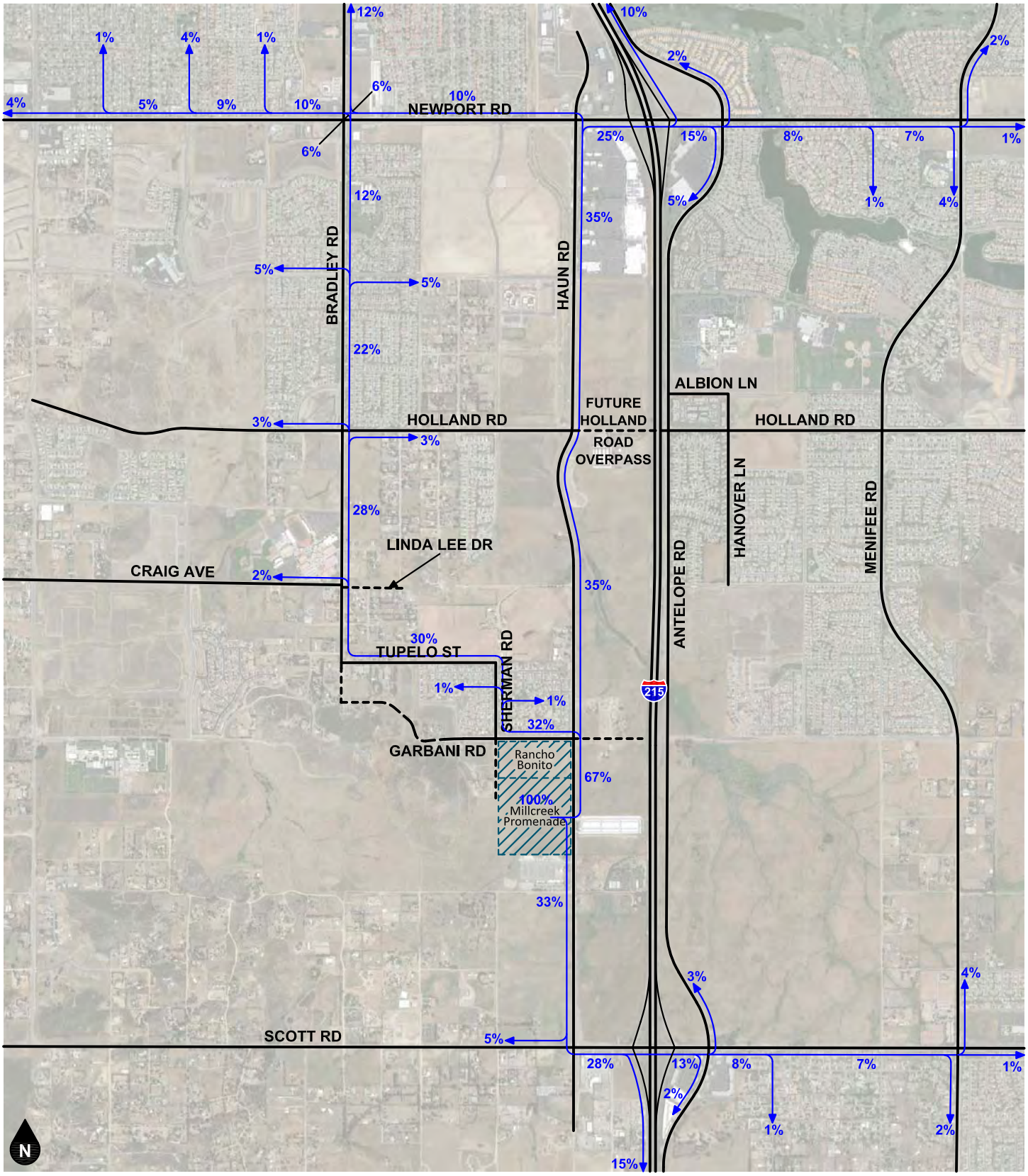
Figure 17
Project Trip Distribution - Single-Family Residential (With Holland Road Overpass)



Legend

10% Percent To/From Project

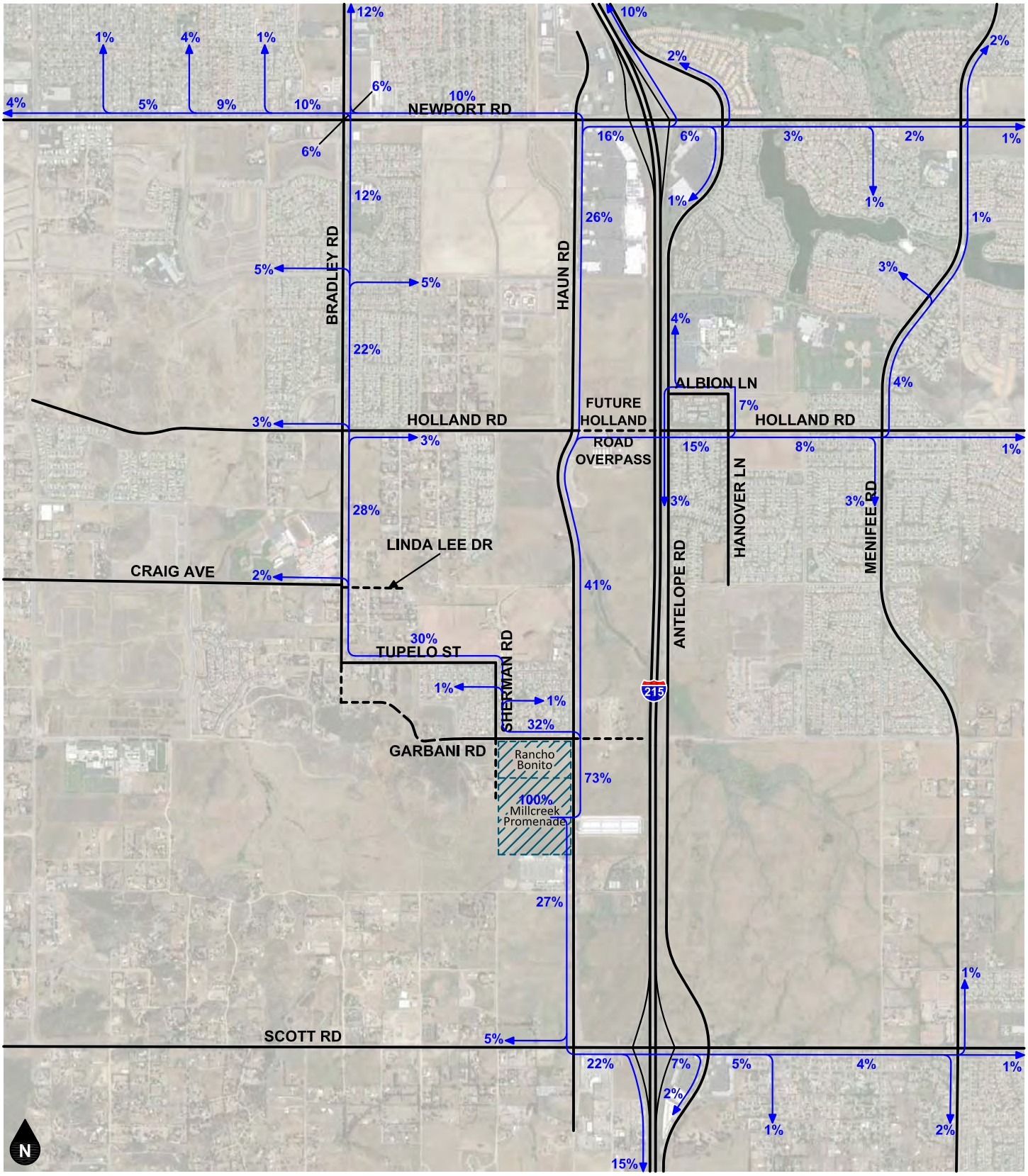
Figure 18
Project Trip Distribution - Industrial Park



Legend

10% Percent To/From Project

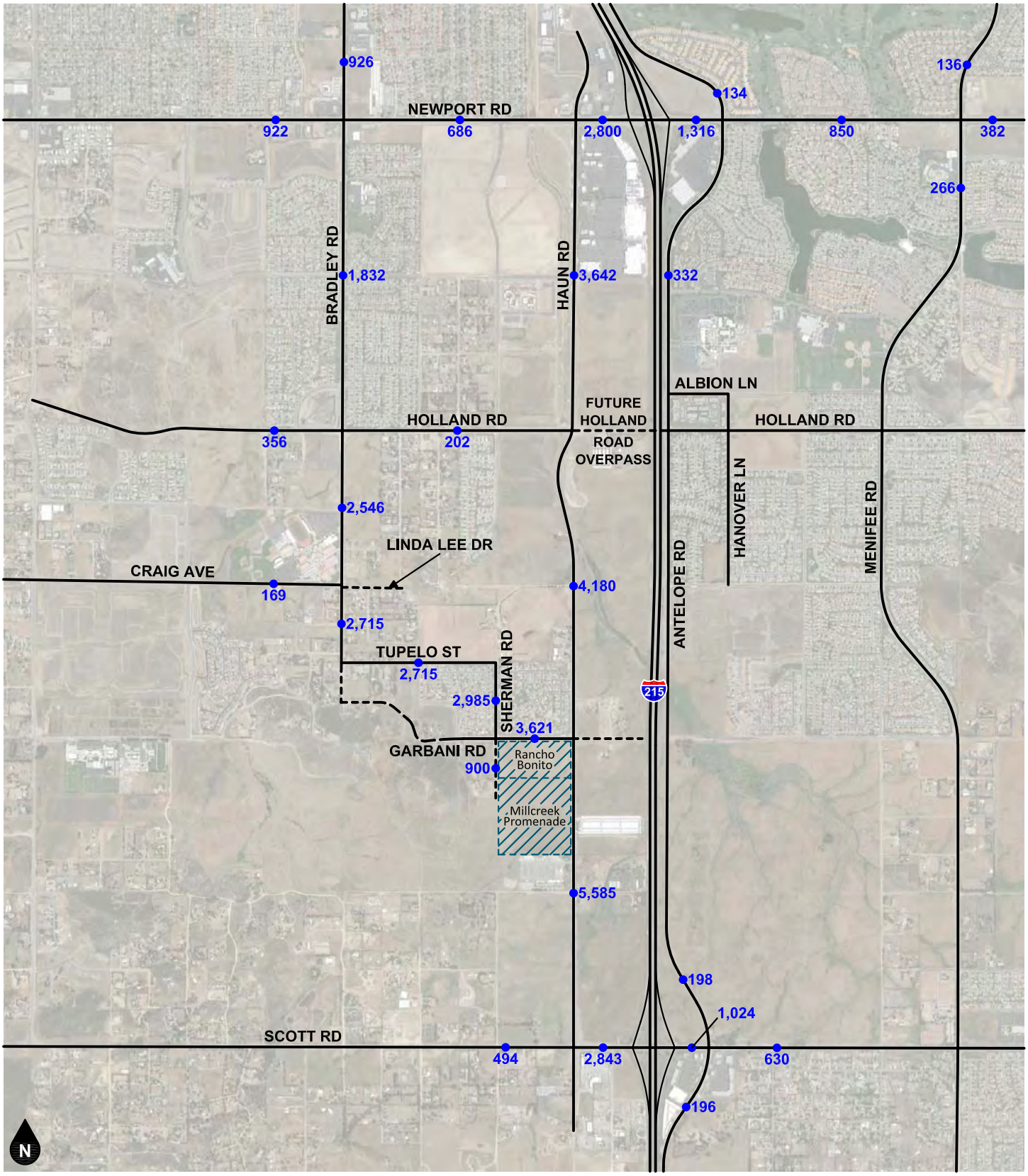
Figure 19
Project Trip Distribution - Restaurant
(Without Holland Road Overpass)



Legend

10% Percent To/From Project

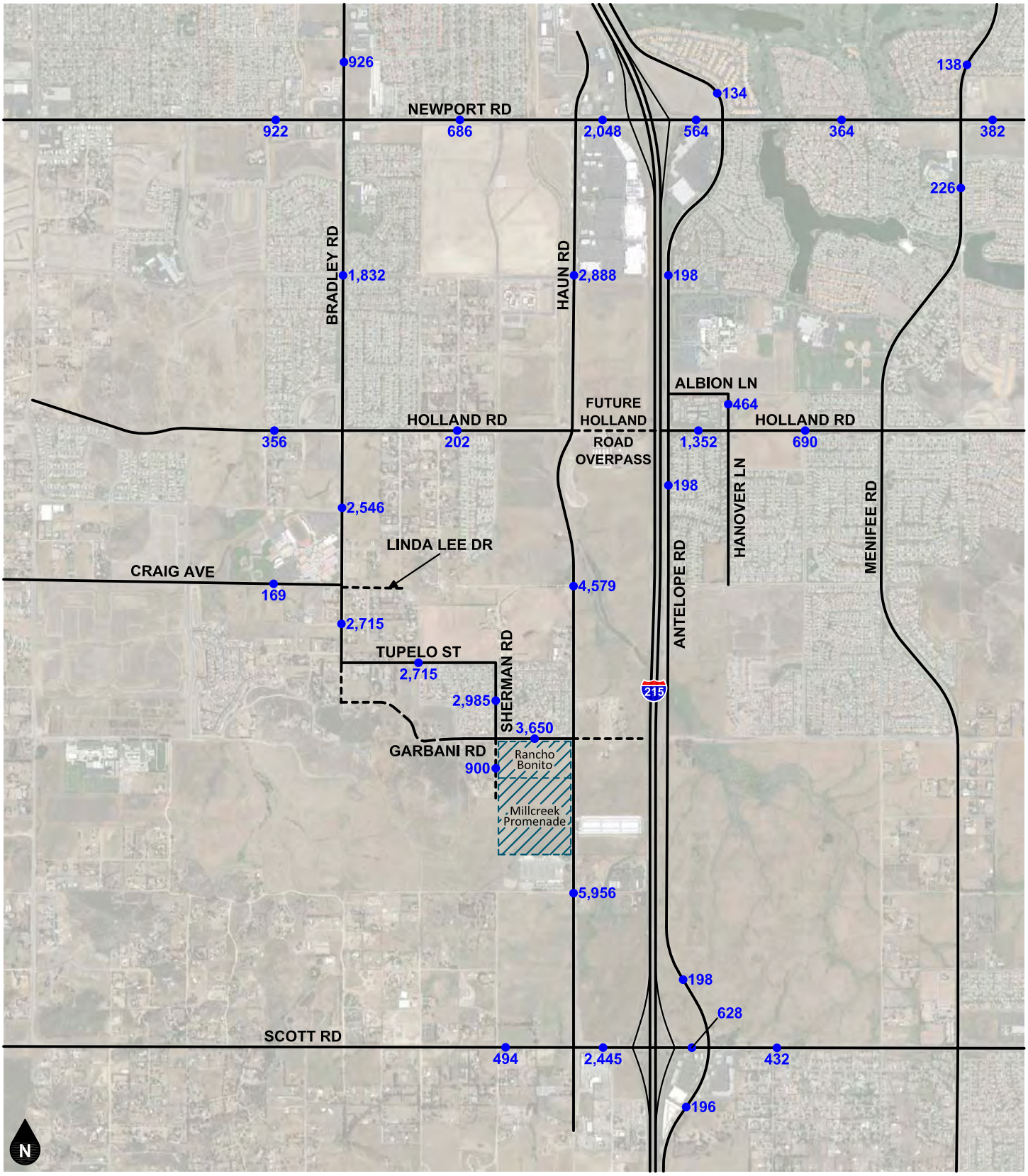
Figure 20
Project Trip Distribution - Restaurant
(With Holland Road Overpass)



Legend

●## Vehicles Per Day

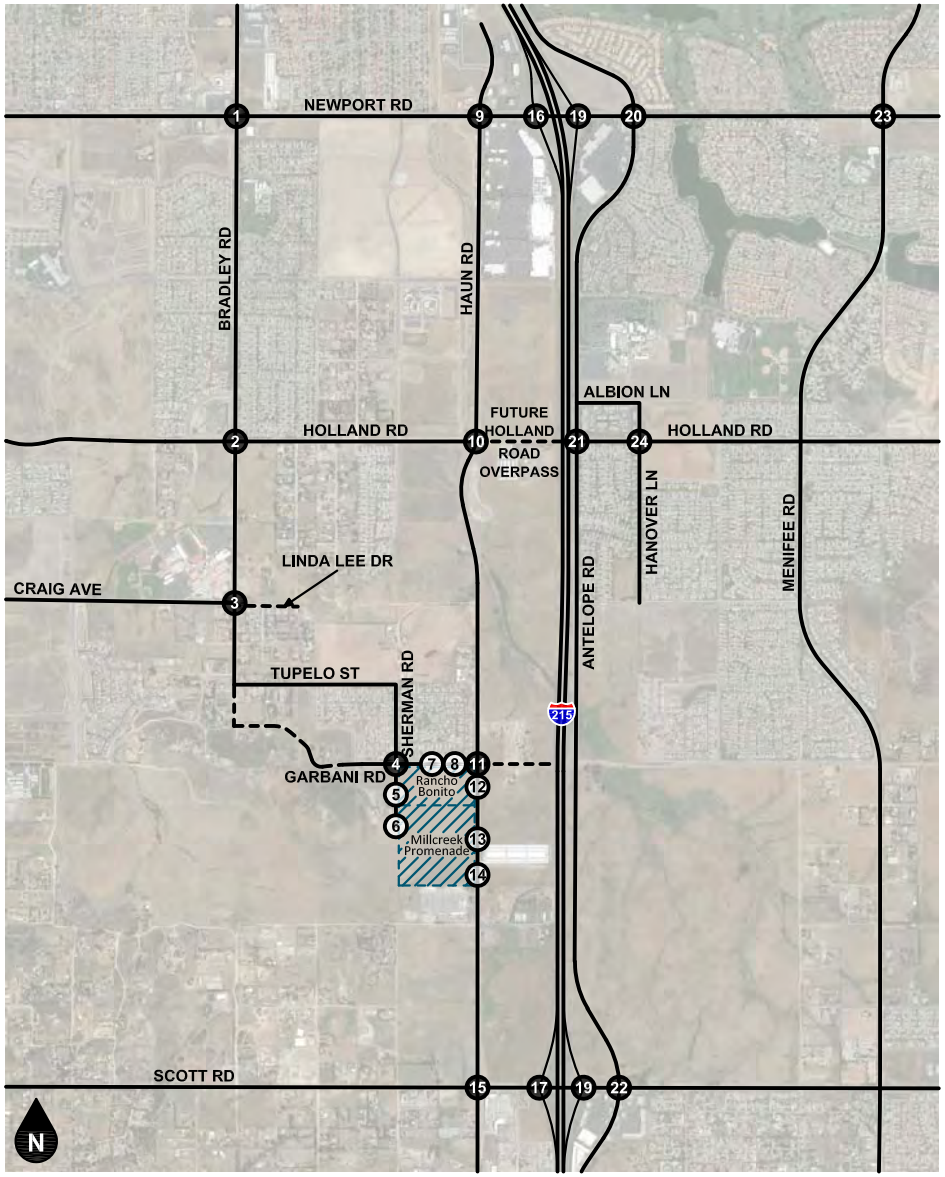
Figure 21
Project Average Daily Traffic Volumes
- Without Holland Road Overpass

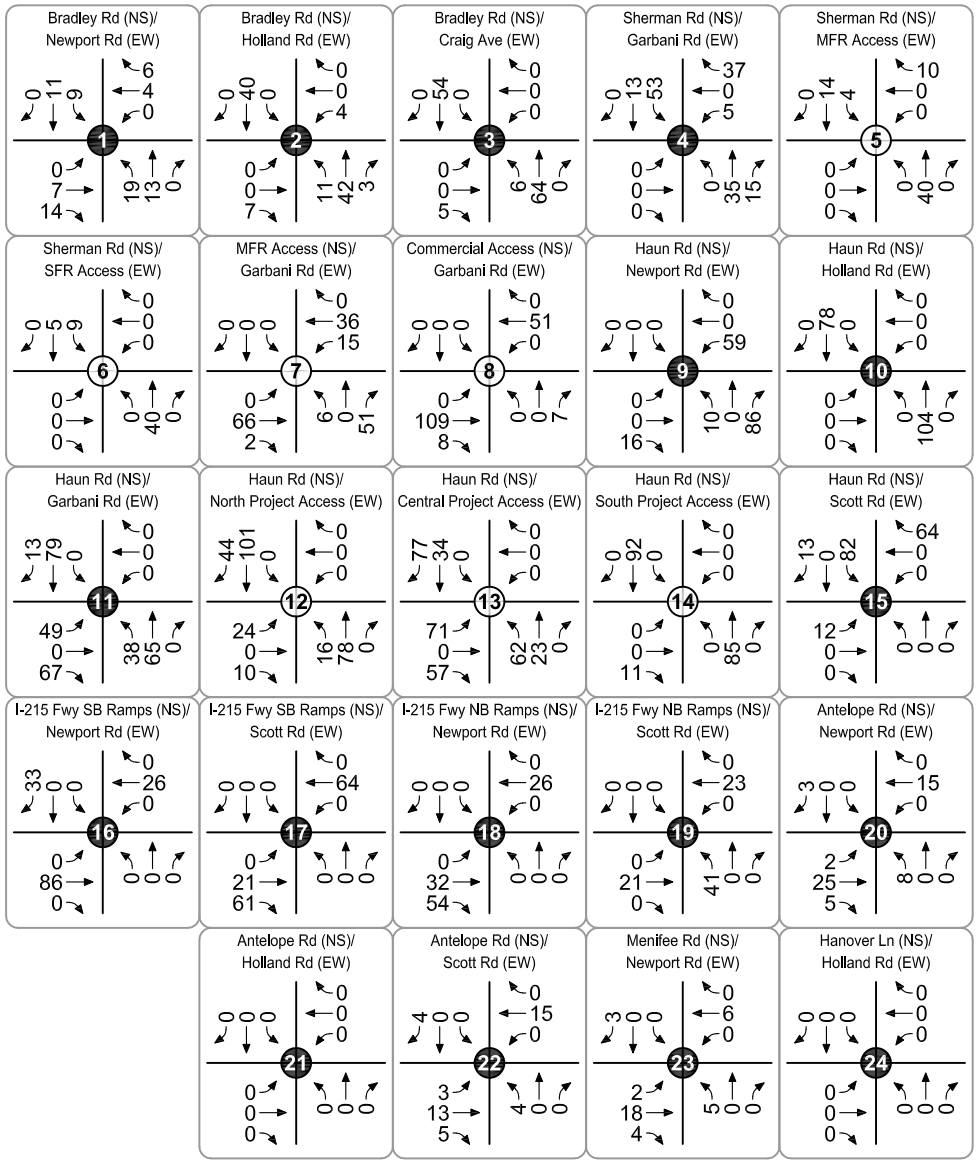


Legend

●## Vehicles Per Day

Figure 22
Project Average Daily Traffic Volumes
- With Holland Road Overpass



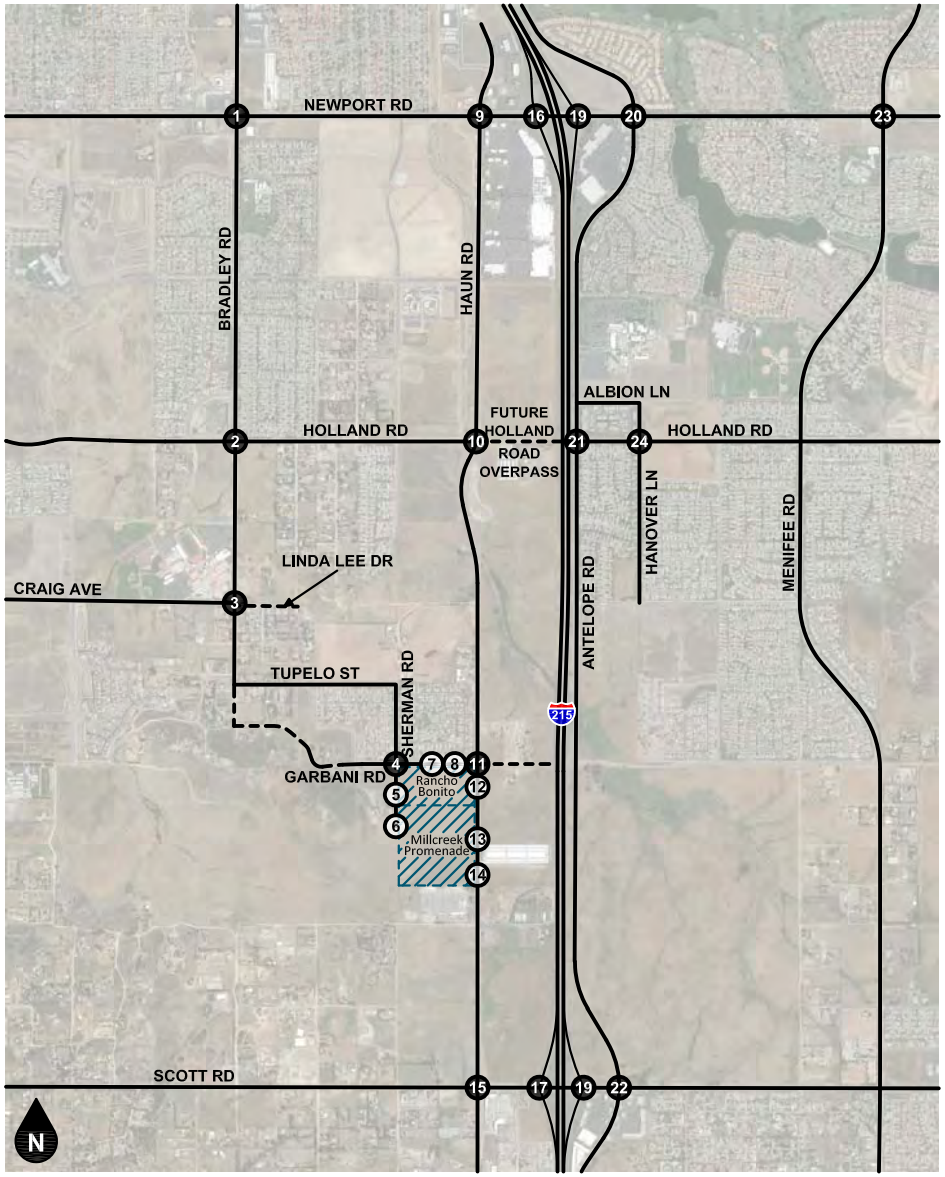


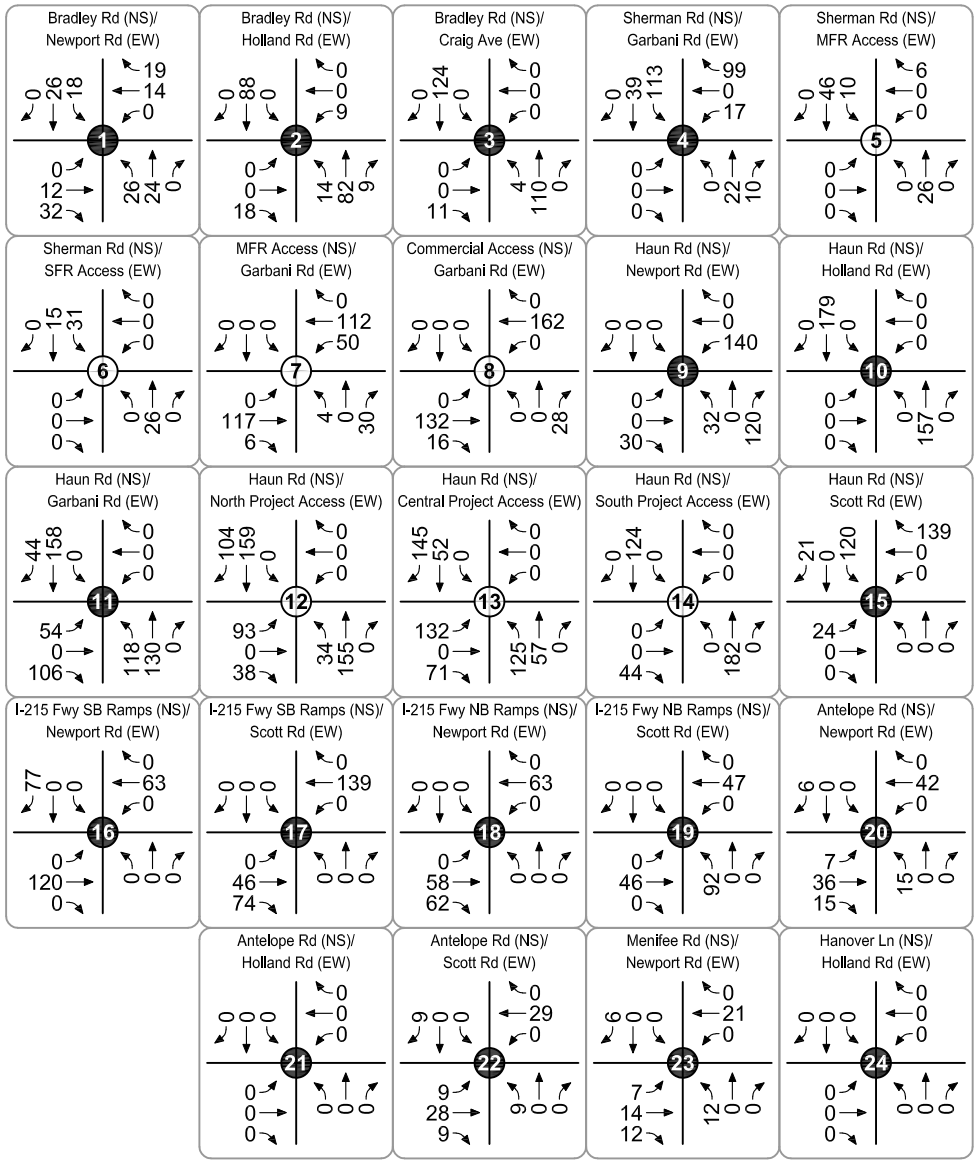
Legend

(#) Study Intersection

(#) Project Driveway

Figure 23
Project AM Peak Hour Intersection Turning Movement Volumes - Without Holland Road Overpass



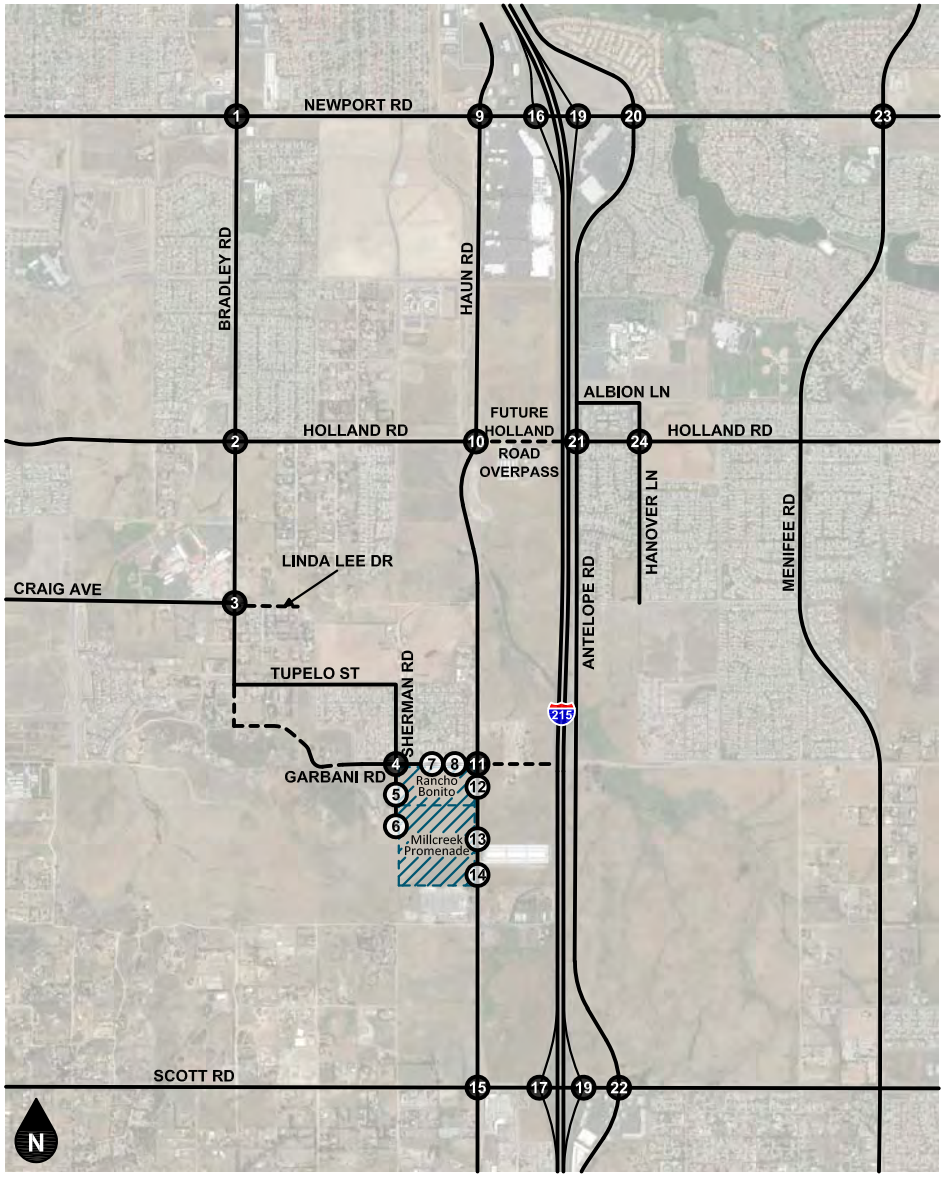


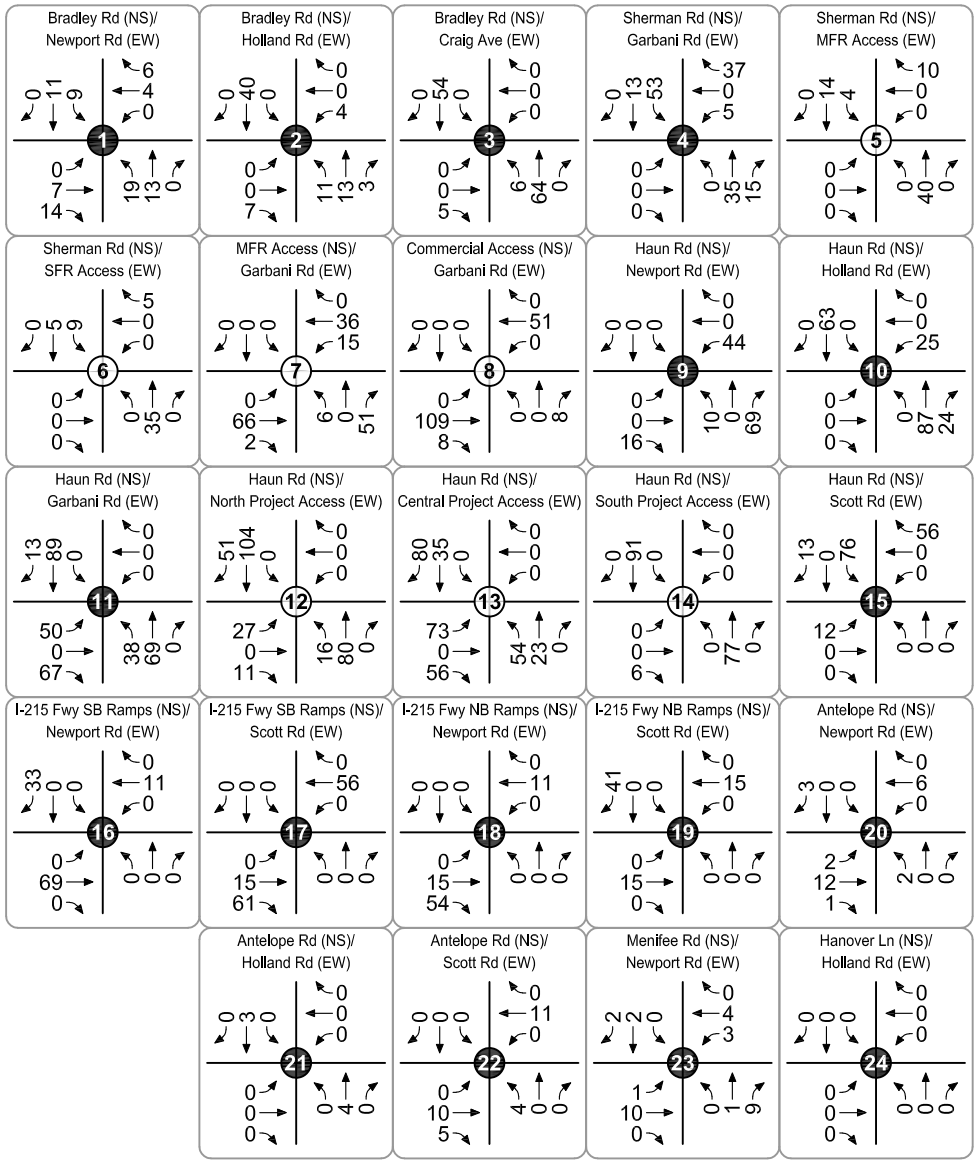
Legend

(#) Study Intersection

(#) Project Driveway

Figure 24
Project PM Peak Hour Intersection Turning Movement Volumes - Without Holland Road Overpass



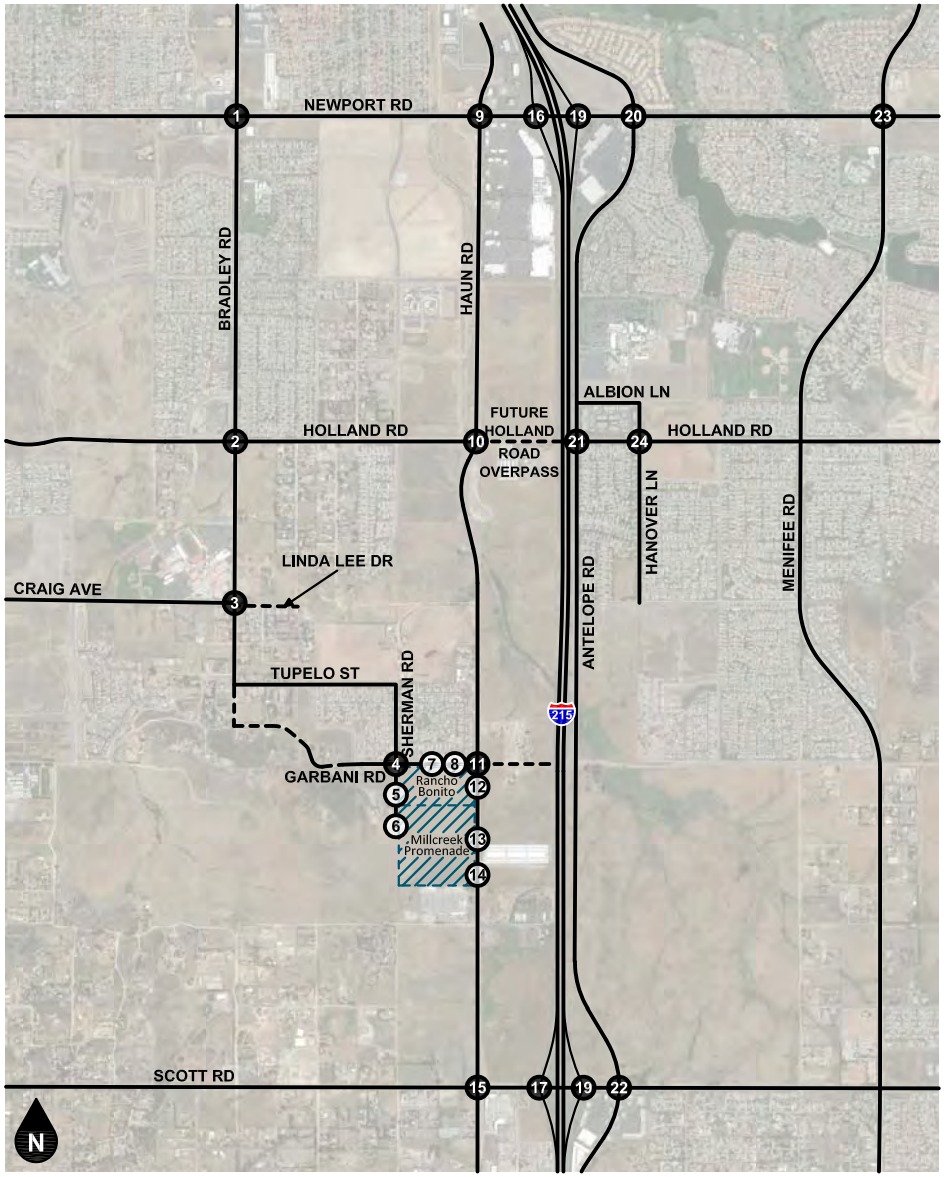


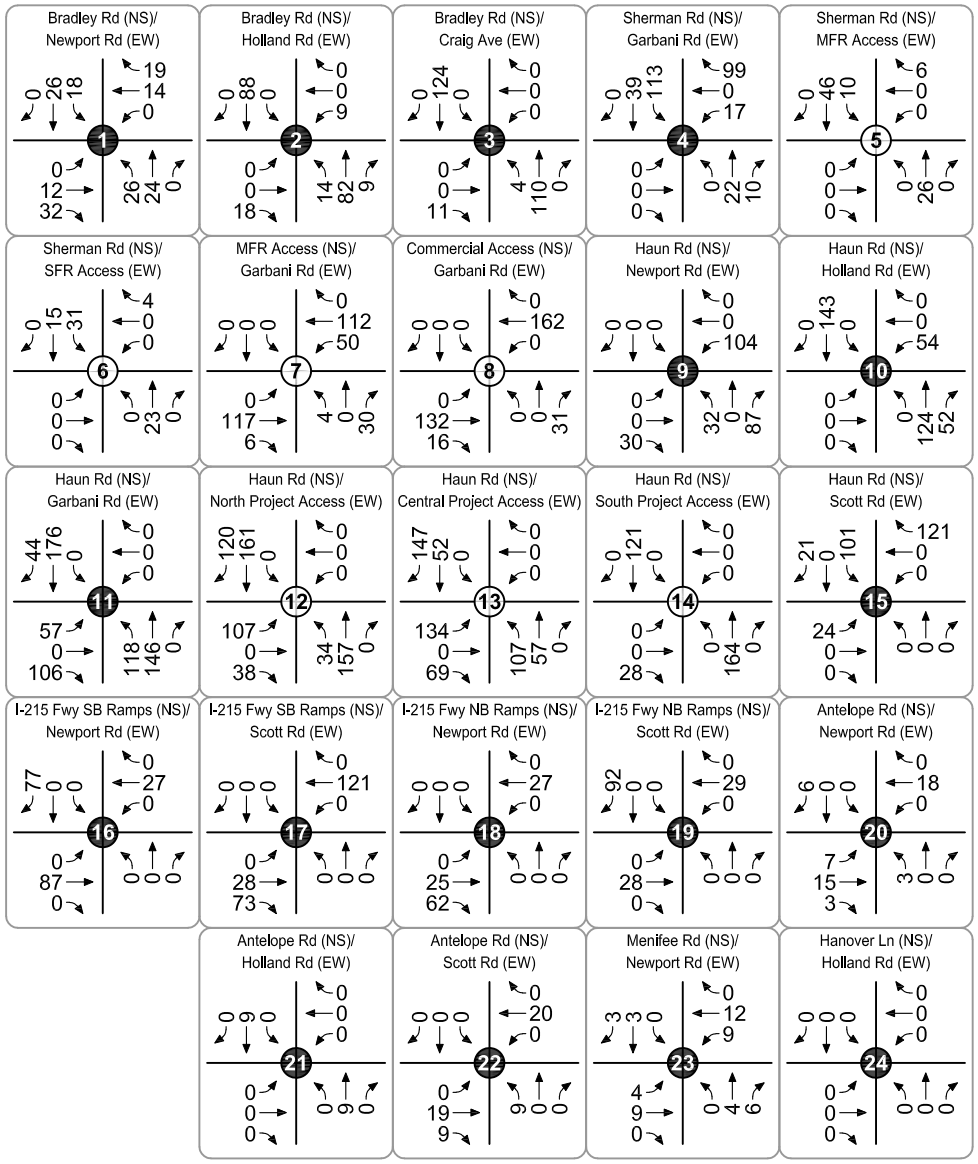
Legend

(#) Study Intersection

(#) Project Driveway

Figure 25
Project AM Peak Hour Intersection Turning Movement Volumes - With Holland Road Overpass





Legend

(#) Study Intersection

(#) Project Driveway

Figure 26
Project PM Peak Hour Intersection Turning Movement Volumes - With Holland Road Overpass

4. FUTURE CONDITIONS

BACKGROUND TRAFFIC

Method of Projection

To assess background traffic conditions, existing traffic volumes are combined with ambient growth and other development trips. The opening year for analysis purposes in this report is 2020 which accounts for Phase 1. The buildout year for analysis purposes in this report is 2022.

Ambient Growth

To account for ambient growth on roadways, Opening Year (2020) traffic volumes have been calculated based on a 2.0 percent annual growth rate of existing traffic volumes over a two year period. Year 2022 traffic volumes have been calculated based on a 2.0 percent annual growth rate of existing traffic volumes over a four year period.

Other Development

Potential developments within the study area are included in the analysis if they are not currently built, they are approved or in progress, their approval has not expired, and they would contribute trips to the study intersections.

Table 5 lists the proposed land uses for the other developments (see Figure 27), and shows the daily and peak hour vehicle trips generated by the other development in the study area. The other development list was provided by the City of Menifee Planning Department staff including approved traffic studies for some of the projects. Trip generation and distributions from these traffic studies were used whenever applicable. The trip generation for projects that were partially built and operational were reduced by the approximate amount that has been built out and these projects are footnoted in Table 5. While it is unlikely that all these projects will be built and operational by Opening Year (2020) and Year 2022, all approved projects anticipated to contribute trips to the study roadway network were included in this analysis. To remain consistent with recently approved traffic studies in the area, and to conservatively portray future impacts without understating potential impacts, an absorption rate of 60% was utilized.

Based on the identified trip generation and distributions, other development average daily traffic volumes have been calculated and shown on Figure 28. Figures 29 and 30 show the other development AM and PM peak hour intersection turning movement volumes, respectively.

FUTURE TRAFFIC

To assess future traffic conditions, existing traffic volumes are combined with ambient growth, other development trips, and project trips. The opening year for analysis purposes in this report is 2020 and reflects Existing Plus Ambient Growth Plus Project traffic conditions. The buildout year for analysis purposes in this report is 2022 and reflects Existing Plus Ambient Growth Plus Project Plus Cumulative traffic conditions.

The I-215 Freeway at Scott Road interchange is scheduled for opening in Year 2022 according to the Riverside County Transportation Department. The lane geometrics for this project were utilized in this analysis for the interchange as well as the intersections of Haun Road at Scott Road and Antelope Road at Scott Road.

The Existing Plus Ambient Growth Plus Project Plus Cumulative traffic scenario is analyzed without and with the Holland Road Overpass (across the I-215 Freeway). For Without Holland Road Overpass Conditions, existing traffic volumes are combined with ambient growth, other development trips, and project trips. For With Holland Road Overpass conditions, the City of Menifee Transportation Department staff provided the

Final Traffic Operation Analysis Report for Holland Road/I-215 Bridge Overcrossing Project prepared by Iteris (September 23, 2014). This report analyzed the construction of a new four lane overcrossing at Holland Road that will span over the I-215 Freeway and Antelope Road. The Opening Year for purposes of this analysis is 2017 and the future year scenario is 2040. Existing traffic volumes were taken in 2014. The report analyzed each scenario with and without the overpass.

The traffic forecasts from Iteris were prepared through the use of the City of Menifee travel demand model, which was developed as a focused model of the Riverside County Transportation Analysis Model. Opening Year (2017) traffic volumes utilized in this report were interpolated linearly.

To determine Year 2022 AM and PM peak hour turning movement volumes at the study intersections, Year 2022 volumes were linearly interpolated from the Year 2017 and Year 2040 with Holland Road Overpass intersection volumes. This provided the AM and PM peak hour intersection turning movement volumes for the Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Road Overpass) scenario. The Riverside County Transportation Analysis Model incorporates future growth including ambient growth and other development growth. Therefore, other development trips were not added to these volumes as double counting would occur and the volumes would be highly overinflated and not accurate. The linearly interpolated traffic volumes for Year 2022 without the Holland Road Overpass were compared to Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Road Overpass) traffic volumes for consistency.

The aforementioned analysis did not include the intersections on Bradley Road nor the intersections of Sherman Road at Garbani Road or Haun Road at Garbani Road. All other study intersections for this traffic impact analysis were included in the Iteris analysis. It is not anticipated that the Holland Road Overpass project will have a major effect on the traffic volumes on Bradley Road and may potentially reduce the traffic volumes at these intersections. Therefore, the Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Road Overpass) is a "worse case" analysis and the Bradley Road intersections were not included in the "With Holland Road Overpass" scenario due to this examination in conjunction with the lack of data available for these intersections.

The intersection of Haun Road at Garbani Road was not included in the analysis conducted by Iteris. To determine the AM and PM peak hour intersection turning movement volumes at this intersection, the Year 2040 inbound and outbound peak hour volumes on the south leg of the Haun Road and Holland Road intersection and the north leg of the Haun Road and Scott Road intersection for without and with the Holland Road Overpass project were compared to determine inbound and outbound factors to be applied to existing traffic counts. The existing turning movement volumes at the intersection of Haun Road at Garbani Road were then adjusted based on these factors to reflect the construction of the Holland Road Overpass. The intersection of Sherman Road at Garbani Road and all project access points were then adjusted to reflect the turning movement volumes at the intersection of Haun Road at Garbani Road. An annual growth rate of 2 percent was applied for four years at these intersections for Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Road Overpass) traffic conditions.

The roadway segments for the "With Holland Road Overpass" scenario were also factored for Year 2020 based on the aforementioned methodology. The roadway segment volumes shown include the roadway segments for which data is available via the Final Traffic Operation Analysis Report for Holland Road/I-215 Bridge Overcrossing Project prepared by Iteris (September 23, 2014).

Average Daily Traffic

For Existing Plus Project traffic conditions, existing traffic volumes are combined with project trips. Figure 31 shows the average daily traffic volumes that can be expected for Existing Plus Project traffic conditions.

For Existing Plus Ambient Growth traffic conditions, existing traffic volumes are combined with ambient growth. Figure 32 shows the average daily traffic volumes that can be expected for Existing Plus Ambient Growth traffic conditions.

For Existing Plus Ambient Growth Plus Project traffic conditions, existing traffic volumes are combined with ambient growth and project trips. Figure 33 shows the average daily traffic volumes that can be expected for Existing Plus Ambient Growth Plus Project traffic conditions.

For Existing Plus Ambient Growth Plus Cumulative (Without Holland Road Overpass) traffic conditions, existing traffic volumes are combined with ambient growth and other development trips. Figure 34 shows the average daily traffic volumes that can be expected for Existing Plus Ambient Growth Plus Cumulative (Without Holland Road Overpass) traffic conditions.

For Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Road Overpass) traffic conditions, existing traffic volumes are combined with ambient growth, other development trips, and project trips. Figure 35 shows the average daily traffic volumes that can be expected for Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Road Overpass) traffic conditions.

For Existing Plus Ambient Growth Plus Cumulative (With Holland Road Overpass) traffic conditions, the methodology is described in Section 4. Figure 36 shows the average daily traffic volumes that can be expected for Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Road Overpass) traffic conditions.

For Existing Plus Ambient Growth Plus Cumulative (With Holland Road Overpass) traffic conditions, the methodology is described in Section 4. Figure 37 shows the average daily traffic volumes that can be expected for Existing Plus Ambient Growth Plus Cumulative (With Holland Road Overpass) traffic conditions.

Roadway Segment Level of Service

As shown in Table 6, the study roadway segments are projected to operate within acceptable Levels of Service for Existing Plus Project traffic conditions, except for the following study roadway segments that are projected to operate at unacceptable Levels of Service:

Haun Road, from Holland Road to Garbani Road
Haun Road, from Garbani Road to Scott Road
Scott Road, from west of Haun Road to Haun Road
Scott Road, from I-215 Freeway to Antelope Road

The study roadway segments are projected to operate at acceptable Levels of Service for Existing Plus Project traffic conditions, with improvements.

As shown in Table 7, the study roadway segments are projected to operate within acceptable Levels of Service for Existing Plus Ambient Growth traffic conditions, except for the following study roadway segments that are projected to operate at unacceptable Levels of Service:

Scott Road, from west of Haun Road to Haun Road
Scott Road, from I-215 Freeway to Antelope Road

As shown in Table 7, the study roadway segments are projected to operate within acceptable Levels of Service for Existing Plus Ambient Growth Plus Project traffic conditions, except for the following study roadway segments that are projected to operate at unacceptable Levels of Service:

Haun Road, from Holland Road to Garbani Road
Haun Road, from Garbani Road to Scott Road
Scott Road, from west of Haun Road to Haun Road
Scott Road, from I-215 Freeway to Antelope Road

The study roadway segments are projected to operate at acceptable Levels of Service for Existing Plus Ambient Growth Plus Project traffic conditions, with improvements.

As shown in Table 8, the study roadway segments are projected to operate within acceptable Levels of Service for Existing Plus Ambient Growth Plus Cumulative (Without Holland Road Overpass) traffic conditions, except for the following study roadway segments that are projected to operate at unacceptable Levels of Service:

Haun Road, from La Piedra Road to Holland Road
Haun Road, from Holland Road to Garbani Road
Haun Road, from Garbani Road to Scott Road
Scott Road, from west of Haun Road to Haun Road
Scott Road, from I-215 Freeway to Antelope Road
Newport Road, from west of Bradley Road to Bradley Road
Newport Road, from Bradley Road to Haun Road

As shown in Table 8, the study roadway segments are projected to operate within acceptable Levels of Service for Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Road Overpass) traffic conditions, except for the following study roadway segments that are projected to operate at unacceptable Levels of Service:

Haun Road, from La Piedra Road to Holland Road
Haun Road, from Holland Road to Garbani Road
Haun Road, from Garbani Road to Scott Road
Scott Road, from west of Haun Road to Haun Road
Scott Road, from Haun Road to I-215 Freeway
Scott Road, from I-215 Freeway to Antelope Road
Newport Road, from west of Bradley Road to Bradley Road
Newport Road, from Bradley Road to Haun Road

The study roadway segments are projected to operate at acceptable Levels of Service for Existing Plus Ambient Growth Plus Project Plus (Without Holland Road Overpass) traffic conditions, with improvements.

As shown in Table 9, the study roadway segments are projected to operate within acceptable Levels of Service for Existing Plus Ambient Growth Plus Cumulative (With Holland Road Overpass) traffic conditions.

As shown in Table 9, the study roadway segments are projected to operate within acceptable Levels of Service for Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Road Overpass) traffic conditions, except for the following study roadway segments that are projected to operate at unacceptable Levels of Service:

Haun Road, from La Piedra Road to Holland Road
Haun Road, from Holland Road to Garbani Road

The study roadway segments are projected to operate at acceptable Levels of Service for Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Road Overpass) traffic conditions, with improvements.

Intersection Delay

The Existing Plus Project delay and Level of Service for the study roadway network are shown in Table 10. Table 10 shows delay values based on the existing geometrics at the study intersections, unless otherwise notified. Existing Plus Project delay calculation worksheets are provided in Appendix D. Existing Plus Project AM and PM peak hour intersection turning movement volumes are shown on Figures 38 and 39, respectively.

For Existing Plus Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Bradley Road (NS) at:
Craig Avenue/Linda Lee Drive (EW) - #3

Haun Road (NS) at:
Holland Road (EW) - #10
Garbani Road (EW) - #11

The study intersections are projected to operate at acceptable Levels of Service for Existing Plus Project traffic conditions, with improvements.

The Existing Plus Ambient Growth delay and Level of Service for the study roadway network are shown in Table 12. Table 11 shows delay values based on the existing geometrics at the study intersections, unless otherwise notified. Existing Plus Ambient Growth delay calculation worksheets are provided in Appendix D. Existing Plus Ambient Growth AM and PM peak hour intersection turning movement volumes are shown on Figures 40 and 41, respectively.

For Existing Plus Ambient Growth traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Haun Road (NS) at:
Garbani Road (EW) - #11

The Existing Plus Ambient Growth Plus Project delay and Level of Service for the study roadway network are shown in Table 11. Table 11 shows delay values based on the existing geometrics at the study intersections, unless otherwise notified. Existing Plus Ambient Growth Plus Project delay calculation worksheets are provided in Appendix D. Existing Plus Ambient Growth Plus Project AM and PM peak hour intersection turning movement volumes are shown on Figures 42 and 43, respectively.

For Existing Plus Ambient Growth Plus Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Bradley Road (NS) at:
Craig Avenue/Linda Lee Drive (EW) - #3

Haun Road (NS) at:
Holland Road (EW) - #10
Garbani Road (EW) - #11

The study intersections are projected to operate at acceptable Levels of Service for Existing Plus Ambient Growth Plus Project traffic conditions, with improvements.

The Existing Plus Ambient Growth Plus Cumulative (Without Holland Road Overpass) delay and Level of Service for the study roadway network are shown in Table 12. Table 12 shows delay values based on the existing geometrics at the study intersections, unless otherwise notified. Existing Plus Ambient Growth Plus Cumulative (Without Holland Road Overpass) delay calculation worksheets are provided in Appendix D. Existing Plus Ambient Growth Plus Cumulative (Without Holland Road Overpass) AM and PM peak hour intersection turning movement volumes are shown on Figures 44 and 45, respectively.

For Existing Plus Ambient Growth Plus Cumulative (Without Holland Road Overpass) traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Bradley Road (NS) at:
- Holland Road (EW) - #2

Haun Road (NS) at:
- Newport Road (EW) - #9
- Holland Road (EW) - #10
- Garbani Road (EW) - #11
- Scott Road (EW) - #15

The Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Road Overpass) delay and Level of Service for the study roadway network are shown in Table 12. Table 12 shows delay values based on the existing geometrics at the study intersections, unless otherwise notified. Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Road Overpass) delay calculation worksheets are provided in Appendix D. Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Road Overpass) AM and PM peak hour intersection turning movement volumes are shown on Figures 46 and 47, respectively.

For Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Road Overpass) traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Bradley Road (NS) at:
- Holland Road (EW) - #2
- Craig Avenue/Linda Lee Drive (EW) - #3

Sherman Road (NS) at:
- Garbani Road (EW) - #4

Haun Road (NS) at:
- Newport Road (EW) - #9
- Holland Road (EW) - #10
- Garbani Road (EW) - #11
- Scott Road (EW) - #15

The study intersections are projected to operate at acceptable Levels of Service for Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Road Overpass) traffic conditions, with improvements.

The Existing Plus Ambient Growth Plus Cumulative (With Holland Road Overpass) delay and Level of Service for the study roadway network are shown in Table 13. Table 13 shows delay values based on the existing geometrics at the study intersections, unless otherwise notified. Existing Plus Ambient Growth Plus Cumulative (With Holland Road Overpass) delay calculation worksheets are provided in Appendix D. Existing Plus Ambient Growth Plus Cumulative (With Holland Road Overpass) AM and PM peak hour intersection turning movement volumes are shown on Figures 48 and 49, respectively.

For Existing Plus Ambient Growth Plus Cumulative (With Holland Road Overpass) traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Haun Road (NS) at:
Holland Road (EW) - #10
Garbani Road (EW) - #11

Hanover Lane (NS) at:
Holland Road (EW) - #24

The Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Road Overpass) delay and Level of Service for the study roadway network are shown in Table 13. Table 13 shows delay values based on the existing geometrics at the study intersections, unless otherwise notified. Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Road Overpass) delay calculation worksheets are provided in Appendix D. Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Road Overpass) AM and PM peak hour intersection turning movement volumes are shown on Figures 50 and 51, respectively.

For Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Road Overpass) traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Haun Road (NS) at:
Holland Road (EW) - #10
Garbani Road (EW) - #11

Hanover Lane (NS) at:
Holland Road (EW) - #24

The study intersections are projected to operate at acceptable Levels of Service for Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Road Overpass) traffic conditions, with improvements.

ROADWAY SEGMENT MITIGATION MEASURES

Table 14 shows the roadway segment capacity analysis with recommended mitigation measures for the analysis scenarios.

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for Existing Plus Project traffic conditions:

Haun Road, from Holland Road to Garbani Road
- Widen from two to four travel lanes

Haun Road, from Garbani Road to Scott Road
- Widen from two to four travel lanes

Scott Road, from west of Haun Road to Haun Road
- Widen from two to four travel lanes

Scott Road, from I-215 Freeway to Antelope Road
- Widen from three to six travel lanes

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for Existing Ambient Growth Plus Project traffic conditions:

Haun Road, from Holland Road to Garbani Road
- Widen from two to four travel lanes

Haun Road, from Garbani Road to Scott Road
- Widen from two to four travel lanes

Scott Road, from west of Haun Road to Haun Road

- Widen from two to four travel lanes

Scott Road, from I-215 Freeway to Antelope Road
- Widen from three to six travel lanes

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Overpass) traffic conditions:

Haun Road, from La Piedra Road to Garbani Road
- Widen from three to four travel lanes

Haun Road, from Holland Road to Garbani Road
- Widen from two to four travel lanes

Haun Road, from Garbani Road to Scott Road
- Widen from two to four travel lanes

Scott Road, from west of Haun Road to Haun Road
- Widen from two to four travel lanes

Scott Road, from Haun Road to I-215 Freeway
- Widen from four to six travel lanes

Scott Road, from I-215 Freeway to Antelope Road
- Widen from four to six travel lanes

Newport Road, from west of Bradley Road to Bradley Road
- Widen from four to six lanes

Newport Road, from Bradley Road to Haun Road
- Widen from six to eight lanes

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Overpass) traffic conditions:

Haun Road, from La Piedra Road to Garbani Road
- Widen from three to four travel lanes

Haun Road, from Holland Road to Garbani Road
- Widen from two to four travel lanes

INTERSECTION MITIGATION MEASURES

Table 15 shows the intersection delay and level of service analysis with recommended mitigation measures for the analysis scenarios.

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for Existing Plus Project traffic conditions:

Bradley Road (NS) at:

Craig Avenue / Linda Lee Drive (EW) - #3
- Install traffic signal

Haun Road (NS) at:

Holland Road (EW) - #10
- Install traffic signal

Garbani Road (EW) - #11
- Construct westbound left turn lane
- Install traffic signal

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for Existing Plus Ambient Growth Plus Project traffic conditions:

Bradley Road (NS) at:
Craig Avenue / Linda Lee Drive (EW) - #3
- Install traffic signal

Haun Road (NS) at:
Holland Road (EW) - #10
- Install traffic signal

Garbani Road (EW) - #11
- Construct westbound left turn lane
- Install traffic signal

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for Existing Plus Ambient Growth Plus Project Plus Cumulative (Without Holland Overpass) traffic conditions:

Bradley Road (NS) at:
Holland Road (EW) - #2
- Construct northbound right turn lane

Craig Avenue / Linda Lee Drive (EW) - #3
- Install traffic signal

Sherman Road (NS) at:
Garbani Road (EW) - #4
- Construct southbound left turn lane

Haun Road (NS) at:
Newport Road (EW) - #9
- Restripe southbound shared through/right turn lane to right turn lane
- Install southbound right turn overlap
- Install eastbound right turn overlap
- Construct additional westbound right turn lane with overlap

Holland Road (EW) - #10
- Install traffic signal

Garbani Road (EW) - #11
- Restripe southbound right turn lane to shared through/right turn lane
- Construct westbound left turn lane
- Install traffic signal

Scott Road (EW) - #15
- Construct additional southbound left turn lane
- Install westbound right turn overlap

Figure 52 exhibits the recommended mitigation measures for all study intersections for Existing Plus Ambient Growth Plus Project Plus Cumulative traffic conditions, without Holland Road Overpass.

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for Existing Plus Ambient Growth Plus Project Plus Cumulative (With Holland Overpass) traffic conditions:

Haun Road (NS) at:
Holland Road (EW) - #10
- Construct northbound right turn lane
- Construct westbound left turn lane
- Construct additional westbound through lane

- Construct westbound right turn lane
- Install traffic signal

Garbani Road (EW) - #11

- Restripe southbound right turn lane to shared through/right turn lane
- Install traffic signal

Hanover Lane (NS) at:

Holland Road (EW) - #24

- Install traffic signal

Figure 53 exhibits the recommended mitigation measures for all study intersections for Existing Plus Ambient Growth Plus Project Plus Cumulative traffic conditions, with Holland Road Overpass.

SIGNIFICANT IMPACT AND FAIR SHARE ANALYSIS

Per the City of Menifee Traffic Impact Study guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if the project exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed comparing Existing Plus Project traffic conditions to Existing traffic condition, as this is a fair representation in the change in Volume-to-Capacity and Level of Service for with and without project traffic conditions. The results for this significant impact criteria are shown in Table 16 for roadway segments and Table 17 for intersections.

Table 16 exhibits the recommended mitigation measures and includes the fair share analysis for roadway segments. Table 17 exhibits the recommended mitigation measures and includes the fair share analysis for intersections. This includes recommended mitigation measures that are not project-specific (such as construction of project adjacent roadways and project access points) and project-specific including when the significant impact is cumulative or direct.

The project's pro-rata share traffic contribution has also been calculated for the Existing Plus Ambient Growth Plus Project Plus Cumulative (without and with Holland Road Overpass) traffic scenario at the impacted intersections. The pro rata contribution has been calculated based on the project peak hour traffic contributed to the improvement location relative to the total new peak hour Existing Plus Ambient Growth Plus Project Plus Cumulative traffic volume.

FUTURE TRAFFIC SIGNAL WARRANTS

Traffic signals are projected to be warranted at the following additional study intersections for Existing Plus Project traffic conditions (see Appendix E):

Haun Road (NS) at:

North Project Access (EW) - #12

Central Project Access (EW) - #13

The unsignalized intersections have been evaluated for traffic signals using the California Department of Transportation Warrant 3 Peak Hour traffic signal warrant analysis, as specified in the California Manual on Uniform Traffic Control Devices (2014 Edition).

Table 18 shows a matrix for the unsignalized study intersections and whether or not they are warranted for a traffic signal by analysis period. Appendix E contains the traffic signal warrant worksheets. The unsignalized intersections have been evaluated for traffic signals using the California Department of Transportation Warrant 3 Peak Hour traffic signal warrant analysis, as specified in the California Manual on Uniform Traffic Control Devices (2014 Edition).

SYNCHRO ANALYSIS

The SYNCHRO program is a complete software package for modeling and optimizing traffic signal timings. SYNCHRO implements the methods of the Highway Capacity Manual. In addition to calculating capacity, it can also optimize cycle lengths and splits, eliminating the need to try multiple timing plans in search of the optimum. If the intersection is coordinated, SYNCHRO explicitly calculates the progression factor and calculates the effects of coordination automatically and accurately.

A SYNCHRO analysis has been conducted on the study intersections for Existing Plus Ambient Growth Plus Project Plus Cumulative traffic conditions (without and with Holland Road Overpass) with improvements. The SYNCHRO analysis was conducted along Haun Road and utilized to determine whether or not ample intersection spacing exists between Garbani Road, the North Project Access, and the Central Project Access. Table 19 includes these findings.

As part of this analysis, the internal intersection west of the Haun Road and Central Project Access intersection was signalized and clustered with the Haun Road/Central Project Access intersection. This was done to determine if the internal intersection could operate satisfactorily and alleviate potential stacking and conflict concerns for vehicles entering/exiting the proposed project due to the close proximity to Haun Road. The signal phasing essentially assumes the westbound approach at the internal intersection will operate in green phasing simultaneously with the northbound/southbound movements along Haun Road. When northbound/southbound Haun Road turns red, the westbound approach at the internal intersection will remain green for a few seconds longer to allow vehicles to clear out of the area between the two intersections. Next, the eastbound approach at Haun Road will remain in green phasing while vehicles exiting the internal intersection (one leg at a time, i.e., split phasing) are assigned right of way. In order to ensure vehicles do not stack between the two intersections, "no right on red" restrictions should be applied at the southbound approach on Haun Road and the northbound and southbound approaches at the internal intersection.

For these scenarios, the study intersections are projected to operate within acceptable levels of service during the peak hours for Existing Plus Ambient Growth Plus Project Plus Cumulative (without and with Holland Road Overpass) traffic conditions. SYNCHRO traffic signal timing and delay reports are provided in Appendix G.

QUEUEING ANALYSIS

A turn pocket queuing analysis has been conducted at the study area project access intersections for the ultimate scenario (Existing Plus Ambient Growth Plus Project Plus Cumulative – without and with Holland Road Overpass). To provide a conservative estimate, the 95th percentile queue was used to calculate required storage lengths.

Table 20 summarizes results of the queuing analyses for left-turn, right-turn, or combination through-turn movements conducted at the study area project access intersections. The values represent the projected queue length necessary for satisfactory operations. It is recommended that the ultimate turn bay length exceed the projected queue length. The queuing analysis reports are based on the 95th percentile queue length conducted as part of the VISTRO analysis (see Appendix D).

Typically when an exclusive left turn lane is required, a minimum of 2 passenger cars should be provided at 25 feet per vehicle (50 feet minimum storage length). Where possible, the recommended minimum pocket length used on roadways should be 100 feet where the speed is 30 miles per hour and 150 feet for arterials with speeds of 40 miles per hour or more. The recommended maximum single turn storage length shall be 300 feet; therefore, dual left turn lanes should be used when over 300 feet of storage is required or when necessary to provide acceptable levels of service at the intersection. For local streets and driveways, smaller storage lengths are permitted when volumes permit.

Table 20 exhibits the recommended minimum storage lengths based on the maximum queue length during the AM and PM peak hours for Existing Plus Ambient Growth Plus Project Plus Cumulative (without and with

Holland Road Overpass) traffic conditions. The queue lengths have been rounded up to the nearest 25 feet to account for the recommended minimum storage length based on the one vehicle needed approximately 25 feet of storage. The following is based on the Without Holland Road Overpass scenario, as the recommended minimum storage lengths are greater than or equal to the With Holland Road Overpass scenario.

The project driveways on Sherman Road and Garbani Road have a recommended minimum storage length of 25 feet for outbound vehicles. The westbound left turn lane at the intersection of Multi-Family Residential Access and Garbani Road has a recommended minimum storage length of 25 feet. Based on the outbound storage length requirements for these intersections, sufficient drive aisle throat lengths are projected to occur at the project site. The Sherman Road and Multi-Family Residential Access and Commercial Access and Garbani Road intersections have parking available immediately upon entry at those locations. While there appears to be in excess of 25 feet from the gated entry on Sherman Road and the entry on Garbani Road to the parking stalls, the close proximity of these parking spaces may inhibit inbound vehicles from clearing the adjacent roadways if vehicles have to queue while vehicles are backing out of parking spaces. For this reason, it is recommended that these parking spaces be relocated as far back from the adjacent roadways as possible to allow for increased drive aisle throat length.

The northbound left turn lane at the Haun Road and North Project Access intersection has a recommended minimum storage length of 50 feet. The northbound left turn lane at the Haun Road and Central Project Access intersection has a recommended minimum storage length of 75 feet. To account for areawide growth on Haun Road and in the general vicinity of the project, it is recommended that both these northbound left turn lanes provide for a minimum of 150 foot left turn pockets. With the distance between Garbani Road and the North Project Access being approximately 637 feet, the distance of the North Project Access and Central Project Access being approximately 708 feet, and the distance from the Central Project Access to the south project boundary being greater than 150 feet, these left turn pockets have sufficient distance to be provided at these lengths on Haun Road.

The project driveways on Haun Road have a recommended minimum storage length of 25 to 225 feet for outbound vehicles. The South Project Access appears to have sufficient drive aisle storage length. The North Project Access has a recommended minimum storage length of 225 feet and the current configuration does not appear to meet this demand. It should be noted that this intersection was analyzed as a single shared outbound left/right turn lane even though the design has separate left and right turn lanes. Although the design has separate left and right turn lanes, the inbound travel lanes merge from two lanes to one lane immediately upon entry to the project site and the one outbound travel lanes merges into two travel lanes close to the intersection. Therefore, the two outbound travel lanes and two inbound travel lanes essentially function as one travel lane for purposes of queuing. It is recommended that the two outbound and inbound travel lanes remain as such without merging into one travel lane within the project site. With two travel lanes the approximate minimum storage length would be 150 feet. The Central Project Access allows for motorists to travel northwest or southwest upon entry (Y-intersection) to navigate the project site. The recommended minimum storage length is 225 feet for the eastbound left turn lane for vehicles leaving the project site. Queueing issues may occur for inbound motorists traveling southwest at the Y-intersection if vehicles are being stored in the eastbound outbound turn lanes within this Y-intersection. Therefore, it is recommended that the intersection be signalized and coordinated with overlap phasing with the Haun Road and Central Project Access intersection to prevent outbound vehicles from blocking the intersection as inbound vehicles are entering the project site. This would alleviate the possibility of inbound vehicles stopping at the intersection waiting to make their turning movement and establishing a queue behind the vehicles that interferes with the Haun Road travel lanes.

Table 5 (1 of 3)

Other Development Trip Generation

Traffic Analysis Zone	Reference Number	Project Name	Land Use	Quantity	Units[2]	Trips Generated[1]						
						Morning Peak Hour			Evening Peak Hour			
						In	Out	Total	In	Out	Total	Daily
1	TR 28859	Ascho	Single-Family Detached Residential	246	DU	46	137	183	153	90	243	2,322
	2016-038 TR	Ridgemoore Investments	Single-Family Detached Residential	18	DU	3	10	13	11	7	18	170
	SP 209	Audie Murphy Ranch	Single-Family Detached Residential	2,157	DU	399	1,197	1,596	1,345	790	2,135	20,362
	TR 32025	Canyon Cove	Single-Family Detached Residential	198	DU	37	110	147	123	73	196	1,869
	2017-237	Dollar General	Variety Store	9.100	TSF	16	12	28	32	30	62	578
	CUP 2016-299	Cook Automotive	Auto Body Repair Shop	18.000	TSF	27	14	41	27	29	56	293
	CUP 2017-055	Goetz Road Gas and Retail	Gas Station with Convenience Market	8	FP	81	81	162	89	89	178	1,585
			Pass-By Reduction			-50	-50	-100	-50	-50	-100	-888
			Fast-Food Restaurant with Drive-Thru	3.200	TSF	66	63	129	54	50	104	1,507
			Pass-By Reduction			-32	-31	-63	-27	-25	-52	-738
	Subtotal - TAZ 1					593	1,543	2,136	1,757	1,083	2,840	27,060
2	2016-164 PP	Popeyes	Fast-Food Restaurant with Drive-Thru	2.700	TSF	55	53	108	46	42	88	1,272
			Pass-By Reduction			-27	-26	-53	-23	-21	-44	-623
	Subtotal - TAZ 2					28	27	55	23	21	44	649
3	TR 30812	Boulder Creek	Single-Family Detached Residential	29	DU	5	16	21	18	11	29	274
	TM 28788	Pacific Communities	Single-Family Detached Residential	123	DU	23	68	91	77	45	122	1,161
	TM 28789	Pacific Communities	Single-Family Detached Residential	131	DU	24	73	97	82	48	130	1,237
	TM 28790	Pacific Communities	Single-Family Detached Residential	156	DU	29	87	116	97	57	154	1,473
	TR 28786	Pacific Communities	Single-Family Detached Residential	72	DU	13	40	53	45	26	71	680
	CUP 2015-157	Cal Cruz Express	Car Wash (Self-Service) with Drive Thru	11.783	TSF	18	18	36	41	41	82	900
			Pass-By Reduction			-6	-5	-11	-10	-10	-20	-225
	PP 2015-099	Shops at Newport[3]	Commercial Retail	4.060	TSF	2	1	3	7	8	15	153
			Pass-By Reduction			-1	0	-1	-2	-3	-5	-52
			Fast-Food Restaurant with Drive-Thru	2.200	TSF	45	43	88	37	34	71	1,036
			Pass-By Reduction			-22	-21	-43	-19	-17	-36	-508
			Office	3.490	TSF	3	1	4	1	3	4	34
			Internal Capture			-5	-5	-10	-5	-5	-10	-122
	Subtotal - TAZ 3					128	316	444	369	238	607	6,041
4	CUP 2013-157	American Tire Depot	Auto Shop	7.171	TSF	10	8	18	17	18	35	397
			Pass-By Reduction			-4	-3	-7	-7	-8	-15	-171
	Subtotal - TAZ 4					6	5	11	10	10	20	226
5	PP 19469	Kensington Apartments	Senior Apartments	221	DU	15	29	44	32	26	58	818
	PP 2017-042	Gallery Senior Living	Assisted Living Facility	118	DU	14	8	22	12	19	31	307
	Subtotal - TAZ 5					29	37	66	44	45	89	1,125
6	SP 2009-069	Town Center	Shopping Center	509.370	TSF	252	154	406	870	943	1,813	18,189
			Pass-By Reduction			-86	-52	-138	-296	-321	-617	-6,184
			Internal Capture			-62	-60	-122	-176	-198	-374	-6,845
			Hotel	200	RM	55	39	94	61	59	120	1,672
			Office	65.340	TSF	65	11	76	12	63	75	636
			Internal Capture			-4	-3	-7	-4	-9	-13	-123
			Single-Family Detached Residential	577	DU	107	320	427	360	211	571	5,447
			Internal Capture			-9	-8	-17	-45	-33	-78	-1,178
			Condominiums	475	DU	50	168	218	168	98	266	3,477
			Internal Capture			-4	-5	-9	-21	-16	-37	-752
	Subtotal - TAZ 6					364	564	928	929	797	1,726	14,339
7	PP 2015-115	Menifee Village	Commercial Retail	231.600	TSF	166	102	268	486	526	1,012	10,642
			Pass-By Reduction			-56	-35	-91	-165	-179	-344	-3,618
	Subtotal - TAZ 7					110	67	177	321	347	668	7,024

Table 5 (2 of 3)

Other Development Trip Generation

Traffic Analysis Zone	Reference Number	Project Name	Land Use	Quantity	Units[2]	Trips Generated[1]						
						Morning Peak Hour			Evening Peak Hour			
						In	Out	Total	In	Out	Total	Daily
8	2016-135 PP	Haun Professional Building	Medical Office	25.698	TSF	56	16	72	25	64	89	894
	2016-154 PAR	Newport Towne Square Phase II	Commercial Retail	42.933	TSF	25	15	40	79	85	164	1,621
			Pass-By Reduction			-9	-5	-14	-27	-29	-56	-551
			Restaurant	8.646	TSF	47	39	86	52	32	84	970
			Pass-By Reduction			-20	-17	-37	-22	-14	-36	-417
	Subtotal - TAZ 8					99	48	147	107	138	245	2,517
9	2017-173 CUP, 2017-174	Menifee Meadows	Assisted Living Facility	178	RM	21	13	34	18	29	47	463
	TR, 2017-175 PP		Medical Office	101.018	TSF	101	16	117	19	98	117	984
	Subtotal - TAZ 9					122	29	151	37	127	164	1,447
10	PP 2014-113	Menifee Lakes Plaza	Shopping Center	131.051	TSF	135	83	218	319	345	664	7,226
			Pass-By Reduction			-46	-28	-74	-108	-117	-225	-2,457
			Service Station with C-Store & Car Wash	12	FP	122	122	244	134	134	268	2,378
			Pass-By Reduction			-76	-76	-152	-75	-75	-150	-1,332
			Internal Capture			-26	-21	-47	-45	-48	-93	-960
			Hotel	70	RM	22	15	37	21	21	42	572
	Subtotal - TAZ 10					131	95	226	246	260	506	5,427
11	TM 31582	El Dorado	Single-Family Detached Residential	271	DU	50	150	200	169	99	268	2,558
12	TR 32100/32102	Rancon	Single-Family Detached Residential	442	DU	82	245	327	276	162	438	4,172
	TTM 32101	Rancon	Single-Family Detached Residential	197	DU	36	109	145	123	72	195	1,860
	TR 2016-285	Rockport Ranch	Single-Family Detached Residential	305	DU	56	169	225	190	112	302	2,879
	Subtotal - TAZ 12					174	523	697	589	346	935	8,911
13	2017-202 GPA	Hitching Post Plaza	High Turnover Sit-Down Restaurant	3.000	TSF	16	13	29	18	11	29	337
			Pass-By Reduction			-7	-6	-13	-8	-5	-13	-145
			Commercial Retail	20.000	TSF	12	7	19	37	40	77	755
			Pass-By Reduction			-4	-2	-6	-13	-14	-27	-257
			Service Station with C-Store & Car Wash	12	FP	122	122	244	134	134	268	2,378
			Pass-By Reduction			-76	-76	-152	-75	-75	-150	-1,332
			Internal Capture			-15	-14	-29	-19	-19	-38	-347
					Subtotal - TAZ 13	48	44	92	74	72	146	1,389
14	2014-091 / PM 36728	Stater Bros.	Commercial Retail	121.277	TSF	132	81	213	301	326	627	6,855
			Pass-By Reduction			-45	-28	-73	-102	-111	-213	-2,331
	2016-061	Pulte Homes	Single-Family Detached Residential	54	DU	10	30	40	34	20	54	510
	TR 30422 / CUP 03581	The Lakes	Single-Family Detached Residential	992	DU	184	551	735	619	363	982	9,364
	TTM 31229	Menifee's Nautical's Cove	Single-Family Detached Residential	239	DU	44	133	177	149	88	237	2,256
	TTM 32277	Menifee Heights	Single-Family Detached Residential	359	DU	66	199	265	224	132	356	3,389
			Internal Capture			-44	-99	-143	-133	-93	-226	-2,237
	Subtotal - TAZ 14					347	867	1,214	1,092	725	1,817	17,806
15	PA 2015-218	Rowland	Single-Family Detached Residential	80	DU	15	44	59	50	29	79	755
	TR 30142	KB Hidden Hills	Single-Family Detached Residential	523	DU	97	290	387	326	192	518	4,937
	Subtotal - TAZ 15					112	334	446	376	221	597	5,692
16	TTM 31194	Golden Meadows	Single-Family Detached Residential	474	DU	88	263	351	296	174	470	4,475
	PAR 2014-073	DCI Investments	Single-Family Detached Residential	30	DU	6	17	23	19	11	30	283
	Subtotal - TAZ 16					94	280	374	315	185	500	4,758
17	PP 2015-156	All Star Super Storage	Storage	242.150	TSF	15	10	25	19	22	41	366
18	TR 33511	Granite	Single-Family Detached Residential	71	DU	13	39	52	44	26	70	670
	PP 2010-022	The Junction at Menifee Valley	Shopping Center	526.800	TSF	257	158	415	892	966	1,858	18,610
			Pass-By Reduction			-87	-54	-141	-303	-328	-631	-6,327
			Internal Capture			-27	-20	-47	-94	-99	-193	-1,928
	Subtotal - TAZ 18					156	123	279	539	565	1,104	11,025
19	PP 2009-121	Walmart	Shopping Center	240.980	TSF	169	103	272	500	542	1,042	10,934
			Pass-By Reduction			-57	-35	-92	-170	-184	-354	-3,718
	Subtotal - TAZ 19					112	68	180	330	358	688	7,216

Table 5 (3 of 3)

Other Development Trip Generation

Traffic Analysis Zone	Reference Number	Project Name	Land Use	Quantity	Units[2]	Trips Generated[1]						
						Morning Peak Hour			Evening Peak Hour			
						In	Out	Total	In	Out	Total	Daily
20	TR 30664	Gallery States	Single-Family Detached Residential	34	DU	6	19	25	21	12	33	321
	PM 36135	Sweetwater Canyon Road	Single-Family Detached Residential	5	DU	1	3	4	3	2	5	47
	PAR 2015-053 / TR 36684	Bundy Canyon Development	Single-Family Detached Residential	10	DU	2	6	8	6	4	10	94
	Subtotal - TAZ 20					9	28	37	30	18	48	462
21	PP 2009-006	Commerce Pointe	Light Industrial - Trucks (in PCE)	827.777	TSF	246	36	282	32	219	251	1,982
			Light Industrial - Cars			401	55	456	53	357	410	3,227
	Subtotal - TAZ 21					647	91	738	85	576	661	5,209
22	TTM 32628	Christensen Ranch	Residential Condominiums	327	DU	35	116	151	115	68	183	2,394
	TTM 28206	Terra Bella / Mosaic	Single-Family Detached Residential	277	DU	51	154	205	173	101	274	2,615
	TTM 33732	Cantelena	Single-Family Detached Residential	296	DU	55	164	219	185	108	293	2,794
	Subtotal - TAZ 22					141	434	575	473	277	750	7,803
Total Other Development Trips Generated (Opening Year)						**3,515**	**5,683**	**9,198**	**7,935**	**6,530**	**14,465**	**139,050**

Notes:

(1) Sources:
Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Codes 110, 151, 210, 220, 252, 254, 310, 710, 720, 814, 820, 843, 932, 934, 942, and 945.
City of Fontana, Truck Trip Generation Study, August 2003.
San Diego Association of Governments, Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

(2) DU = Dwelling Units; TSF = Thousand Square Feet; RM = Rooms; FP = Fueling Positions

(3) Source: The Shops at Newport Traffic Impact Analysis, prepared by Urban Crossroads, October 12, 2015.

General Note: The other development projects were reviewed to determine if a portion of the project has been built and operational. The following projects are partially built and the approximate percentage of the remaining project to be built has been used for the trip generation:
SP 209 = 85%, TM 28788 = 60%; TM 28790 = 40%; TM 31582 = 50%; TR 30422 / CUP 03581 = 30%; TR 30142 = 60%; TTM 28206 = 50%

Table 6
Existing Plus Project Roadway Segment Capacity Analysis

Roadway	Segment		Menifee Roadway Standards[1]			Existing[2]			Existing Plus Project						Impact[4]
	From	To	Classification	Lanes	Capacity[1]	ADT	V/C	LOS	Lanes	Capacity[3]	ADT	V/C	LOS	Capacity Threshold	
Garbani Road	Haun Road	Sherman Road	Major	4	34,100	2,516	0.10	A	3	25,500	6,137	0.24	A	Acceptable	
Tupelo Street	Sherman Road	Bradley Road	**Unclassified**	2	13,000	2,580	0.20	A	2	13,000	5,295	0.41	A	Acceptable	
Sherman Road	Tupelo Street	Garbani Road	**Collector**	2	13,000	2,437	0.19	A	2	13,000	5,422	0.42	A	Acceptable	
Haun Road	Newport Road	La Piedra Road	**Major**	4	34,100	14,320	0.42	A	4	34,100	17,962	0.53	A	Acceptable	
	La Piedra Road	Holland Road	Major	4	34,100	15,628	0.61	B	3	25,500	19,270	0.76	C	Acceptable	
	Holland Road	Garbani Road	Major	4	34,100	10,560	0.81	D	2	13,000	14,740	1.13	F	Potentially Exceeds Capacity	Direct
	Garbani Road	Scott Road	Major	4	34,100	12,301	0.95	E	2	13,000	17,886	1.38	F	Potentially Exceeds Capacity	Direct
Bradley Road	Newport Road	Holland Road	**Major**	4	34,100	10,484	0.31	A	4	34,100	12,316	0.36	A	Acceptable	
	Holland Road	Tupelo Street	Major	4	34,100	5,456	0.42	A	2	13,000	8,002	0.62	B	Acceptable	
Scott Road	West of Haun Road	Haun Road	Urban Arterial	6	56,300	14,297	1.10	F	2	13,000	14,791	1.14	F	Potentially Exceeds Capacity	Cumulative
	Haun Road	I-215 Freeway	Urban Arterial	6	56,300	23,858	0.85	D	3	28,100	26,701	0.95	E	Approaches Capacity	
	I-215 Freeway	Antelope Road	Urban Arterial	6	56,300	35,206	1.25	F	3	28,100	36,230	1.29	F	Potentially Exceeds Capacity	Cumulative
Newport Road	West of Bradley Road	Bradley Road	Urban Arterial	6	56,300	34,394	0.92	E	4	37,500	35,316	0.94	E	Approaches Capacity	
	Bradley Road	Haun Road	**Urban Arterial**	6	56,300	43,798	0.78	C	6	56,300	44,484	0.79	C	Acceptable	
	Antelope Road	Menifee Road	**Urban Arterial**	6	56,300	44,308	0.79	C	6	56,300	45,158	0.80	D	Approaches Capacity	
	Menifee Road	East of Menifee Road	**Urban Arterial**	6	56,300	33,579	0.60	A	6	56,300	33,961	0.60	B	Acceptable	

Notes:

(1) The City of Menifee roadway maximum capacity at Level of Service "E" (see Table 1). **Bold** denotes roadway is currently built at its ultimate cross-section width.

(2) ADT = Average Daily Traffic; V/C = Volume/Capacity; LOS = Level of Service

(3) Maximum capacity at Level of Service "E" based on existing number of lanes. Ultimate standard capacity is only assumed if the roadway is constructed at its ultimate cross-section width, including design improvement features (lane width, shoulder width, bike lanes or medians).

(4) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing Existing Plus Project traffic conditions to Existing traffic conditions, as this is a fair representation in the change in Volume-to-Capacity and Level of Service for with and without project traffic conditions.

Table 7
Existing Plus Ambient Growth Plus Project Roadway Segment Capacity Analysis

Roadway	Segment		Menifee Roadway Standards[1]			Existing Plus Ambient Growth[2]			Existing Plus Ambient Growth Plus Project						Impact[4]
	From	To	Classification	Lanes	Capacity[1]	ADT	V/C	LOS	Lanes	Capacity[3]	ADT	V/C	LOS	Capacity Threshold	
Garbani Road	Haun Road	Sherman Road	Major	4	34,100	2,618	0.10	A	3	25,500	5,012	0.20	A	Acceptable	
Tupelo Street	Sherman Road	Bradley Road	**Unclassified**	2	13,000	2,684	0.21	A	2	13,000	4,619	0.36	A	Acceptable	
Sherman Road	Tupelo Street	Garbani Road	**Collector**	2	13,000	2,535	0.20	A	2	13,000	4,740	0.36	A	Acceptable	
Haun Road	Newport Road	La Piedra Road	**Major**	4	34,100	14,899	0.44	A	4	34,100	17,292	0.51	A	Acceptable	
	La Piedra Road	Holland Road	Major	4	34,100	16,259	0.64	B	3	25,500	18,653	0.73	C	Acceptable	
	Holland Road	Garbani Road	Major	4	34,100	10,987	0.85	D	2	13,000	13,918	1.07	F	Potentially Exceeds Capacity	Direct
	Garbani Road	Scott Road	Major	4	34,100	12,798	0.98	E	2	13,000	17,465	1.34	F	Potentially Exceeds Capacity	Direct
Bradley Road	Newport Road	Holland Road	**Major**	4	34,100	10,908	0.32	A	4	34,100	12,366	0.36	A	Acceptable	
	Holland Road	Tupelo Street	Major	4	34,100	5,676	0.44	A	2	13,000	7,611	0.59	A	Acceptable	
Scott Road	West of Haun Road	Haun Road	Urban Arterial	6	56,300	14,875	1.14	F	2	13,000	15,213	1.17	F	Potentially Exceeds Capacity	Cumulative
	Haun Road	I-215 Freeway	Urban Arterial	6	56,300	24,822	0.88	D	3	28,100	26,730	0.95	E	Approaches Capacity	
	I-215 Freeway	Antelope Road	Urban Arterial	6	56,300	36,628	1.30	F	3	28,100	37,496	1.33	F	Potentially Exceeds Capacity	Cumulative
Newport Road	West of Bradley Road	Bradley Road	Urban Arterial	6	56,300	35,784	0.95	E	4	37,500	36,458	0.97	E	Approaches Capacity	
	Bradley Road	Haun Road	**Urban Arterial**	6	56,300	45,567	0.81	D	6	56,300	46,253	0.82	D	Approaches Capacity	
	Antelope Road	Menifee Road	**Urban Arterial**	6	56,300	46,098	0.82	D	6	56,300	46,636	0.83	D	Approaches Capacity	
	Menifee Road	East of Menifee Road	**Urban Arterial**	6	56,300	34,936	0.62	B	6	56,300	35,006	0.62	B	Acceptable	

Notes:

(1) The City of Menifee roadway maximum capacity at Level of Service "E" (see Table 1). **Bold** denotes roadway is currently built at its ultimate cross-section width.

(2) ADT = Average Daily Traffic; V/C = Volume/Capacity; LOS = Level of Service

(3) Maximum capacity at Level of Service "E" based on existing number of lanes. Ultimate standard capacity is only assumed if the roadway is constructed at its ultimate cross-section width, including design improvement features (lane width, shoulder width, bike lanes or medians).

(4) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing Existing Plus Project traffic conditions to Existing traffic conditions, as this is a fair representation in the change in Volume-to-Capacity and Level of Service for with and without project traffic conditions.

Table 8

Existing Plus Ambient Growth Plus Project Plus Cumulative Roadway Segment Capacity Analysis - Without Holland Road Overpass

Roadway	Segment		Menifee Roadway Standards[1]			Existing Plus Ambient Growth Plus Cumulative[2]			Existing Plus Ambient Growth Plus Project Plus Cumulative						Significant Impact[4]
	From	To	Classification	Lanes	Capacity[1]	ADT	V/C	LOS	Lanes	Capacity[3]	ADT	V/C	LOS	Capacity Threshold	
Garbani Road	Haun Road	Sherman Road	Major	4	34,100	2,965	0.12	A	3	25,500	6,586	0.26	A	Acceptable	
Tupelo Street	Sherman Road	Bradley Road	**Unclassified**	2	13,000	6,103	0.47	A	2	13,000	5,935	0.46	A	Acceptable	
Sherman Road	Tupelo Street	Garbani Road	**Collector**	2	13,000	2,880	0.22	A	2	13,000	5,685	0.44	A	Acceptable	
Haun Road	Newport Road	La Piedra Road	**Major**	4	34,100	25,266	0.74	C	4	34,100	25,266	0.74	C	Acceptable	
	La Piedra Road	Holland Road	Major	4	34,100	26,738	1.05	F	3	25,500	26,738	1.05	F	Potentially Exceeds Capacity	Cumulative
	Holland Road	Garbani Road	Major	4	34,100	19,103	1.47	F	2	13,000	23,283	1.79	F	Potentially Exceeds Capacity	Cumulative
	Garbani Road	Scott Road	Major	4	34,100	21,282	1.64	F	2	13,000	26,867	2.07	F	Potentially Exceeds Capacity	Cumulative
Bradley Road	Newport Road	Holland Road	**Major**	4	34,100	14,118	0.41	A	4	34,100	15,950	0.47	A	Acceptable	
	Holland Road	Tupelo Street	Major	4	34,100	6,804	0.52	A	2	13,000	9,350	0.72	C	Acceptable	
Scott Road[5]	West of Haun Road	Haun Road	Urban Arterial	6	56,300	19,476	1.50	F	2	13,000	19,970	1.54	F	Potentially Exceeds Capacity	Cumulative
	Haun Road	I-215 Freeway	Urban Arterial	6	56,300	35,585	0.95	E	4	37,500	38,428	1.02	F	Potentially Exceeds Capacity	Direct
	I-215 Freeway	Antelope Road	Urban Arterial	6	56,300	43,179	1.15	F	4	37,500	44,203	1.18	F	Potentially Exceeds Capacity	Cumulative
Newport Road	West of Bradley Road	Bradley Road	Urban Arterial	6	56,300	47,873	1.28	F	4	37,500	48,795	1.30	F	Potentially Exceeds Capacity	Cumulative
	Bradley Road	Haun Road	**Urban Arterial**	6	56,300	61,963	1.10	F	6	56,300	62,649	1.11	F	Potentially Exceeds Capacity	Cumulative
	Antelope Road	Menifee Road	**Urban Arterial**	6	56,300	53,739	0.95	E	6	56,300	54,589	0.97	E	Approaches Capacity	
	Menifee Road	East of Menifee Road	**Urban Arterial**	6	56,300	40,996	0.73	C	6	56,300	41,378	0.73	C	Acceptable	

Notes:

(1) The City of Menifee roadway maximum capacity at Level of Service "E" (see Table 1).**Bold** denotes roadway is currently built at its ultimate cross-section width.

(2) ADT = Average Daily Traffic; V/C = Volume/Capacity; LOS = Level of Service

(3) Maximum capacity at Level of Service "E" based on existing number of lanes. Ultimate standard capacity is only assumed if the roadway is constructed at its ultimate cross-section width, including design improvement features (lane width, shoulder width, bike lanes or medians).

(4) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing Existing Plus Project traffic conditions to Existing traffic conditions, as this is a fair representation in the change in Volume-to-Capacity and Level of Service for with and without project traffic conditions.

(5) Scott Road from Haun Road to Antelope Road has been shown as being improved to a 4-lane Arterial for Year 2022 traffic conditions per the I-215/Scott Road Interchange Improvements Project.

Table 9

Existing Plus Ambient Growth Plus Project Plus Cumulative Roadway Segment Capacity Analysis - With Holland Road Overpass

Roadway	Segment		Menifee Roadway Standards[1]			Existing Plus Ambient Growth Plus Cumulative[2]			Existing Plus Ambient Growth Plus Project Plus Cumulative						Significant Impact[4]
	From	To	Classification	Lanes	Capacity[1]	ADT	V/C	LOS	Lanes	Capacity[3]	ADT	V/C	LOS	Capacity Threshold	
Haun Road	Newport Road	La Piedra Road	**Major**	4	34,100	24,636	0.72	C	4	34,100	27,524	0.81	D	Approaches Capacity	
	La Piedra Road	Holland Road	Major	4	34,100	24,636	0.97	E	3	25,500	27,524	1.08	F	Potentially Exceeds Capacity	Direct
	Holland Road	Garbani Road	Major	4	34,100	10,371	0.80	C	2	13,000	14,950	1.15	F	Potentially Exceeds Capacity	Direct
Scott Road[5]	Haun Road	I-215 Freeway	Urban Arterial	6	56,300	20,189	0.54	A	4	37,500	22,634	0.60	B	Acceptable	
	I-215 Freeway	Antelope Road	Urban Arterial	6	56,300	27,380	0.73	C	4	37,500	28,008	0.75	C	Acceptable	
Newport Road	Antelope Road	Menifee Road	**Urban Arterial**	6	56,300	31,284	0.56	A	6	56,300	31,648	0.56	A	Acceptable	

Notes:

(1) The City of Menifee roadway maximum capacity at Level of Service "E" (see Table 1).**Bold** denotes roadway is currently built at its ultimate cross-section width.

(2) ADT = Average Daily Traffic; V/C = Volume/Capacity; LOS = Level of Service

(3) Maximum capacity at Level of Service "E" based on existing number of lanes. Ultimate standard capacity is only assumed if the roadway is constructed at its ultimate cross-section width, including design improvement features (lane width, shoulder width, bike lanes or medians).

(4) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing Existing Plus Project traffic conditions to Existing traffic conditions, as this is a fair representation in the change in Volume-to-Capacity and Level of Service for with and without project traffic conditions.

(5) Scott Road from Haun Road to Antelope Road has been shown as being improved to a 4-lane Arterial for Year 2022 traffic conditions per the I-215/Scott Road Interchange Improvements Project.

Table 10
Existing Plus Project Intersection Delay and Level of Service

Intersection	Traffic Control[2]	Existing Peak Hour Delay-LOS[1]		Existing Plus Project Peak Hour Delay-LOS[1]		Significant Impact[3]
		Morning	Evening	Morning	Evening	
Bradley Road (NS) at:						
Newport Road (EW) - #1	TS	28.9-C	20.3-C	31.2-C	21.5-C	
Holland Road (EW) - #2	TS	36.6-D	15.9-B	41.6-D	17.7-B	
Craig Avenue / Linda Lee Drive (EW) - #3	AWS	21.7-C	8.4-A	39.4-E	9.8-A	Direct
Sherman Road (NS) at:						
Garbani Road (EW) - #4	AWS	16.3-C	7.8-A	25.5-D	10.5-B	
Multi-Family Residential Access (EW) - #5	CSS	-	-	8.9-A	9.1-A	
Single-Family Residential Access (EW) - #6	CSS	-	-	8.9-A	9.2-A	
Multi-Family Residential Access (NS) at:						
Garbani Road (EW) - #7	CSS	-	-	16.4-C	12.8-B	
Commercial Access (NS) at:						
Garbani Road (EW) - #8	CSS	-	-	10.7-B	9.7-A	
Haun Road (NS) at:						
Newport Road (EW) - #9	TS	23.5-C	32.8-C	25.9-C	41.5-D	
Holland Road (EW) - #10	AWS	24.7-C	19.4-C	33.7-D	48.6-E	Direct
Garbani Road (EW) - #11	CSS	240.6-F	27.0-D	>999-F	144.2-F	Cumulative
North Project Access (EW) - #12	TS	-	-	3.0-A	8.1-A	
Central Project Access (EW) - #13	TS	-	-	6.9-A	10.1-B	
South Project Access (EW) - #14	CSS	-	-	13.7-B	12.7-B	
Scott Road (EW) - #15	TS	32.0-C	18.8-B	45.2-D	24.1-C	
I-215 Freeway SB Ramps (NS) at:						
Newport Road (EW) - #16	TS	9.0-A	12.6-B	9.7-A	15.5-B	
Scott Road (EW) - #17	TS	22.5-C	25.5-C	23.6-C	28.0-C	
I-215 Freeway NB Ramps (NS) at:						
Newport Road (EW) - #18	TS	9.5-A	18.7-B	9.6-A	21.3-C	
Scott Road (EW) - #19	TS	21.1-C	26.0-C	22.1-C	29.3-C	
Antelope Road (NS) at:						
Newport Road (EW) - #20	TS	30.1-C	41.2-D	30.9-C	44.5-D	
Holland Road (EW) - #21	TS	9.1-A	8.9-A	9.1-A	8.9-A	
Scott Road (EW) - #22	TS	33.3-C	28.9-C	34.4-C	30.4-C	
Menifee Road (NS) at:						
Newport Road (EW) - #23	TS	26.0-C	21.6-C	26.4-C	21.9-C	

Notes:

(1) Delay shown in seconds/vehicle; LOS = Level of Service.
For intersections with traffic signal or all way stop control, delay-LOS are based on overall average intersection delay. For intersections with cross street stop control, delay-LOS are based on the worst individual movement (or movements sharing a single lane).

(2) TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop

(3) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing without project to with project traffic conditions.

Table 11
Existing Plus Ambient Growth Plus Project Intersection Delay and Level of Service

Intersection	Traffic Control[3]	Existing Plus Ambient Growth Peak Hour Delay-LOS[1]		Existing Plus Ambient Growth Plus Project Peak Hour Delay-LOS[1]		Significant Impact[3]
		Morning	Evening	Morning	Evening	
Bradley Road (NS) at:						
Newport Road (EW) - #1	TS	31.1-C	21.0-C	32.6-C	22.2-C	
Holland Road (EW) - #2	TS	40.9-D	16.3-B	44.7-D	17.8-B	
Craig Avenue / Linda Lee Drive (EW) - #3	AWS	25.0-D	8.5-A	35.1-E	9.4-A	Direct
Sherman Road (NS) at:						
Garbani Road (EW) - #4	AWS	17.8-C	7.9-A	23.9-C	9.8-A	
Multi-Family Residential Access (EW) - #5	CSS	-	-	8.6-A	8.7-A	
Single-Family Residential Access (EW) - #6	CSS	-	-	8.5-A	8.6-A	
Multi-Family Residential Access (NS) at:						
Garbani Road (EW) - #7	CSS	-	-	16.1-C	12.4-B	
Commercial Access (NS) at:						
Garbani Road (EW) - #8	CSS	-	-	10.6-B	9.6-A	
Haun Road (NS) at:						
Newport Road (EW) - #9	TS	25.4-C	36.9-D	26.8-C	44.0-D	
Holland Road (EW) - #10	AWS	28.1-D	21.0-C	32.6-D	40.1-E	Direct
Garbani Road (EW) - #11	CSS	305.3-F	28.8-D	917.4-F	95.3-F	Cumulative
North Project Access (EW) - #12	TS	-	-	3.0-A	8.2-A	
Central Project Access (EW) - #13	TS	-	-	3.0-A	7.8-A	
South Project Access (EW) - #14	CSS	-	-	13.4-B	12.6-B	
Scott Road (EW) - #15[4]	TS	33.2-C	18.0-B	41.9-D	21.9-C	
I-215 Freeway SB Ramps (NS) at:						
Newport Road (EW) - #16	TS	10.3-B	15.3-B	10.9-B	17.8-B	
Scott Road (EW) - #17[4]	TS	6.4-A	6.4-A	6.4-A	6.4-A	
I-215 Freeway NB Ramps (NS) at:						
Newport Road (EW) - #18	TS	10.1-B	23.4-C	10.2-B	25.6-C	
Scott Road (EW) - #19[4]	TS	3.1-A	2.8-A	3.1-A	2.8-A	
Antelope Road (NS) at:						
Newport Road (EW) - #20	TS	33.4-C	47.4-D	34.0-C	50.2-D	
Holland Road (EW) - #21	TS	9.2-A	9.0-A	9.2-A	9.0-A	
Scott Road (EW) - #22[4]	TS	25.1-C	24.1-C	25.5-C	24.8-C	
Menifee Road (NS) at:						
Newport Road (EW) - #23	TS	28.6-C	22.5-C	29.0-C	22.8-C	

Notes:

(1) Delay shown in seconds/vehicle; LOS = Level of Service.
For intersections with traffic signal or all way stop control, delay-LOS are based on overall average intersection delay. For intersections with cross street stop control, delay-LOS are based on the worst individual movement (or movements sharing a single lane).

(2) TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop

(3) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing without project to with project traffic conditions.

(4) The I-215 Freeway at Scott Road interchange project is scheduled for opening in 2020 according to the Riverside County Transportation Department (http://rcprojects.org/scottroadinterchange/). The lane geometrics utilized in this analysis for the interchange as well as Haun Road at Scott Road and Antelope Road at Scott Road are those provided upon project completion.

Table 12
Existing Plus Ambient Growth Plus Project Plus Cumulative Intersection Delay and Level of Service - Without Holland Road Overpass

Intersection	Traffic Control[2]	Existing Plus Ambient Growth Plus Cumulative Peak Hour Delay-LOS[1]		Existing Plus Ambient Growth Plus Project Plus Cumulative Peak Hour Delay-LOS[1]		Significant Impact[3]
		Morning	Evening	Morning	Evening	
Bradley Road (NS) at:						
Newport Road (EW) - #1	TS	41.1-D	46.3-D	43.5-D	53.3-D	
Holland Road (EW) - #2	TS	60.4-E	19.7-B	81.6-F	21.8-C	Cumulative
Craig Avenue / Linda Lee Drive (EW) - #3	AWS	32.9-D	9.0-A	58.4-F	10.6-B	Direct
Sherman Road (NS) at:						
Garbani Road (EW) - #4	AWS	19.9-C	8.1-A	35.9-E	11.1-B	Direct
Multi-Family Residential Access (EW) - #5	CSS	-	-	8.9-A	9.1-A	
Single-Family Residential Access (EW) - #6	CSS	-	-	8.9-A	9.2-A	
Multi-Family Residential Access (NS) at:						
Garbani Road (EW) - #7	CSS	-	-	17.4-C	13.2-B	
Commercial Access (NS) at:						
Garbani Road (EW) - #8	CSS	-	-	10.9-B	9.8-A	
Haun Road (NS) at:						
Newport Road (EW) - #9	TS	60.1-E	134.4-F	67.3-E	163.6-F	Cumulative
Holland Road (EW) - #10	AWS	69.3-F	147.0-F	109.4-F	261.7-F	Cumulative
Garbani Road (EW) - #11	CSS	>999-F	147.6-F	>999-F	>999-F	Cumulative
North Project Access (EW) - #12	TS	-	-	3.3-A	9.2-A	
Central Project Access (EW) - #13	TS	-	-	6.5-A	9.7-A	
South Project Access (EW) - #14	CSS	-	-	17.0-C	20.6-C	
Scott Road (EW) - #15[4]	TS	87.4-F	69.0-E	114.0-F	115.4-F	Cumulative
I-215 Freeway SB Ramps (NS) at:						
Newport Road (EW) - #16	TS	24.0-C	29.4-C	24.8-C	38.3-D	
Scott Road (EW) - #17[4]	TS	6.9-A	7.1-A	7.1-A	7.3-A	
I-215 Freeway NB Ramps (NS) at:						
Newport Road (EW) - #18	TS	16.9-B	45.4-D	18.2-B	46.2-D	
Scott Road (EW) - #19[4]	TS	3.6-A	4.3-A	3.6-A	4.4-A	
Antelope Road (NS) at:						
Newport Road (EW) - #20	TS	47.7-D	59.8-E	48.8-D	62.5-E	
Holland Road (EW) - #21	TS	9.7-A	9.4-A	9.7-A	9.4-A	
Scott Road (EW) - #22[4]	TS	33.9-C	35.9-D	34.8-C	38.0-D	
Menifee Road (NS) at:						
Newport Road (EW) - #23	TS	46.2-D	38.4-D	47.6-D	39.8-D	

Notes:

(1) Delay shown in seconds/vehicle; LOS = Level of Service.
For intersections with traffic signal or all way stop control, delay-LOS are based on overall average intersection delay. For intersections with cross street stop control, delay-LOS are based on the worst individual movement (or movements sharing a single lane).

(2) TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop

(3) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing without project to with project traffic conditions.

(4) The I-215 Freeway at Scott Road interchange project is scheduled for opening in 2020 according to the Riverside County Transportation Department (http://rcprojects.org/scottroadinterchange/). The lane geometrics utilized in this analysis for the interchange as well as Haun Road at Scott Road and Antelope Road at Scott Road are those provided upon project completion.

Table 13
Existing Plus Ambient Growth Plus Project Plus Cumulative Intersection Delay and Level of Service - With Holland Road Overpass

Intersection	Traffic Control[2]	Existing Plus Ambient Growth Plus Cumulative Peak Hour Delay-LOS[1]		Existing Plus Ambient Growth Plus Project Plus Cumulative Peak Hour Delay-LOS[1]		Significant Impact[3]
		Morning	Evening	Morning	Evening	
Sherman Road (NS) at:						
Garbani Road (EW) - #4	AWS	13.2-C	7.7-A	16.0-C	9.5-A	
Multi-Family Residential Access (EW) - #5	CSS	-	-	8.9-A	9.1-A	
Single-Family Residential Access (EW) - #6	CSS	-	-	8.9-A	9.2-A	
Multi-Family Residential Access (NS) at:						
Garbani Road (EW) - #7	CSS	-	-	17.8-C	13.0-B	
Commercial Access (NS) at:						
Garbani Road (EW) - #8	CSS	-	-	10.9-B	9.8-A	
Haun Road (NS) at:						
Newport Road (EW) - #9	TS	20.0-B	25.8-C	20.5-C	30.5-C	
Holland Road (EW) - #10	AWS	195.2-F	318.8-F	247.5-F	422.5-F	Cumulative
Garbani Road (EW) - #11	CSS	984.2-F	104.9-F	>999-F	>999-F	Cumulative
North Project Access (EW) - #12	TS	-	-	3.3-A	8.6-A	
Central Project Access (EW) - #13	TS	-	-	6.8-A	10.0-A	
South Project Access (EW) - #14	CSS	-	-	14.2-B	12.8-B	
Scott Road (EW) - #15[5]	TS	20.1-C	18.2-B	22.4-C	22.1-C	
I-215 Freeway SB Ramps (NS) at:						
Newport Road (EW) - #16	TS	7.3-A	8.9-A	7.5-A	9.6-A	
Scott Road (EW) - #17[4]	TS	6.3-A	6.2-A	6.4-A	6.3-A	
I-215 Freeway NB Ramps (NS) at:						
Newport Road (EW) - #18	TS	7.5-A	9.4-A	7.5-A	9.6-A	
Scott Road (EW) - #19[4]	TS	3.2-A	3.2-A	3.2-A	3.1-A	
Antelope Road (NS) at:						
Newport Road (EW) - #20	TS	47.5-D	42.6-D	47.4-D	42.6-D	
Holland Road (EW) - #21	TS	4.4-A	6.5-A	4.4-A	6.5-A	
Scott Road (EW) - #22[4]	TS	22.8-C	25.9-C	23.0-C	26.4-C	
Menifee Road (NS) at:						
Newport Road (EW) - #23	TS	23.3-C	19.5-B	23.5-C	19.8-B	
Hanover Lane (NS) at:						
Holland Road (EW) - #24	AWS	204.9-F	178.3-F	216.8-F	206.6-F	Cumulative

Notes:

(1) Delay shown in seconds/vehicle; LOS = Level of Service.
For intersections with traffic signal or all way stop control, delay-LOS are based on overall average intersection delay. For intersections with cross street stop control, delay-LOS are based on the worst individual movement (or movements sharing a single lane).

(2) TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop

(3) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing without project to with project traffic conditions.

(4) The I-215 Freeway at Scott Road interchange project is scheduled for opening in 2020 according to the Riverside County Transportation Department (http://rcprojects.org/scottroadinterchange/). The lane geometrics utilized in this analysis for the interchange as well as Haun Road at Scott Road and Antelope Road at Scott Road are those provided upon project completion.

Table 14 (1 of 2)
Roadway Segment Capacity Analysis With Recommended Mitigation Measures[1]

Existing Plus Project															
Roadway	Segment		Menifee Roadway Standards[2]			Existing			Existing Plus Project						Significant Impact[4]
	From	To	Classification	Lanes	Capacity	ADT	V/C	LOS	Lanes	Capacity[3]	ADT	V/C	LOS	Capacity Threshold	
Haun Road	Holland Road	Garbani Road	Major	4	34,100	10,560	0.81	D	2	13,000	14,740	1.13	F	Potentially Exceeds Capacity	Direct
	- With Improvements		Major	4	34,100				**4**	34,100	14,740	0.43	A	Acceptable	
	Garbani Road	Scott Road	Major	4	34,100	12,301	0.95	E	2	13,000	17,886	1.38	F	Potentially Exceeds Capacity	Direct
	- With Improvements		Major	4	34,100				**4**	34,100	17,886	0.52	A	Acceptable	
Scott Road	West of Haun Road	Haun Road	Urban Arterial	6	56,300	14,297	1.10	F	2	13,000	14,791	1.14	F	Potentially Exceeds Capacity	Cumulative
	- With Improvements		Urban Arterial	6	56,300				**4**	37,500	14,791	0.39	A	Acceptable	
	I-215 Freeway	Antelope Road	Urban Arterial	6	56,300	35,206	1.25	F	3	28,100	36,230	1.29	F	Potentially Exceeds Capacity	Cumulative
	- With Improvements		Urban Arterial	6	56,300				**6**	56,300	36,230	0.64	B	Acceptable	

Existing Plus Ambient Growth Plus Project															
Roadway	Segment		Menifee Roadway Standards[2]			Existing Plus Ambient Growth			Existing Plus Ambient Growth Plus Project						Significant Impact[4]
	From	To	Classification	Lanes	Capacity	ADT	V/C	LOS	Lanes	Capacity[3]	ADT	V/C	LOS	Capacity Threshold	
Haun Road	Holland Road	Garbani Road	Major	4	34,100	10,987	0.85	D	2	13,000	13,918	1.07	F	Potentially Exceeds Capacity	Direct
	- With Improvements		Major	4	34,100				**4**	34,100	13,918	0.41	A	Acceptable	
	Garbani Road	Scott Road	Major	4	34,100	12,798	0.98	E	2	13,000	17,465	1.34	F	Potentially Exceeds Capacity	Direct
	- With Improvements		Major	4	34,100				**4**	34,100	17,465	0.51	A	Acceptable	
Scott Road	West of Haun Road	Haun Road	Urban Arterial	6	56,300	14,875	1.14	F	2	13,000	15,213	1.17	F	Potentially Exceeds Capacity	Cumulative
	- With Improvements		Urban Arterial	6	56,300				**4**	37,500	15,213	0.41	A	Acceptable	
	I-215 Freeway	Antelope Road	Urban Arterial	6	56,300	36,628	1.30	F	3	28,100	37,496	1.33	F	Potentially Exceeds Capacity	Cumulative
	- With Improvements		Urban Arterial	6	56,300				**6**	56,300	37,496	0.67	B	Acceptable	

Table 14 (2 of 2)

Roadway Segment Capacity Analysis With Recommended Mitigation Measures[1]

Existing Plus Ambient Growth Plus Project Plus Cumulative - Without Holland Road Overpass															
Roadway	Segment		Menifee Roadway Standards[2]			Existing Plus Ambient Growth Plus Cumulative			Existing Plus Ambient Growth Plus Project Plus Cumulative						Impact[4]
	From	To	Classification	Lanes	Capacity	ADT	V/C	LOS	Lanes	Capacity[3]	ADT	V/C	LOS	Capacity Threshold	
Haun Road	La Piedra Road	Holland Road	Major	4	34,100	26,738	1.05	F	3	25,500	26,738	1.05	F	Potentially Exceeds Capacity	Cumulative
	- With Improvements		Major	4	34,100				**4**	34,100	26,738	0.78	C	Acceptable	
	Holland Road	Garbani Road	Major	4	34,100	19,103	1.47	F	2	13,000	23,283	1.79	F	Potentially Exceeds Capacity	Cumulative
	- With Improvements		Major	4	34,100				**4**	34,100	23,283	0.68	B	Acceptable	
	Garbani Road	Scott Road	Major	4	34,100	21,282	1.64	F	2	13,000	26,867	2.07	F	Potentially Exceeds Capacity	Cumulative
	- With Improvements		Major	4	34,100				**4**	34,100	26,867	0.79	C	Acceptable	
Scott Road[5]	West of Haun Road	Haun Road	Urban Arterial	6	56,300	19,476	1.50	F	2	13,000	19,970	1.54	F	Potentially Exceeds Capacity	Cumulative
	- With Improvements		Urban Arterial	6	56,300				**4**	37,500	19,970	0.53	A	Acceptable	
	Haun Road	I-215 Freeway	Urban Arterial	6	56,300	35,585	0.95	E	4	37,500	38,428	1.02	F	Potentially Exceeds Capacity	Direct
	- With Improvements		Urban Arterial	6	56,300				**6**	56,300	38,428	0.68	B	Acceptable	
	I-215 Freeway	Antelope Road	Urban Arterial	6	56,300	43,179	1.15	F	4	37,500	44,203	1.18	F	Potentially Exceeds Capacity	Cumulative
	- With Improvements		Urban Arterial	6	56,300				**6**	56,300	44,203	0.79	C	Acceptable	
Newport Road	West of Bradley Road	Bradley Road	Urban Arterial	6	56,300	47,873	1.28	F	4	37,500	48,795	1.30	F	Potentially Exceeds Capacity	Cumulative
	- With Improvements		Urban Arterial	6	56,300				**6**	56,300	48,795	0.87	D	Approaches Capacity	
	Bradley Road	Haun Road	**Urban Arterial**	6	56,300	61,963	1.10	F	6	56,300	62,649	1.11	F	Potentially Exceeds Capacity	Cumulative
	- With Improvements		**Urban Arterial**	8	87,000				**8**	87,000	62,649	0.72	C	Acceptable	

Existing Plus Ambient Growth Plus Project Plus Cumulative - With Holland Road Overpass															
Roadway	Segment		Menifee Roadway Standards[2]			Existing Plus Ambient Growth Plus Cumulative			Existing Plus Ambient Growth Plus Project Plus Cumulative						Impact[4]
	From	To	Classification	Lanes	Capacity	ADT	V/C	LOS	Lanes	Capacity[3]	ADT	V/C	LOS	Capacity Threshold	
Haun Road	La Piedra Road	Holland Road	Major	4	34,100	24,636	0.97	E	3	25,500	27,524	1.08	F	Potentially Exceeds Capacity	Direct
	- With Improvements		Major	4	34,100				**4**	34,100	27,524	0.81	D	Approaches Capacity	
	Holland Road	Garbani Road	Major	4	34,100	10,371	0.80	C	2	13,000	14,950	1.15	F	Potentially Exceeds Capacity	Direct
	- With Improvements		Major	4	34,100				**4**	34,100	14,950	0.44	A	Acceptable	

Notes:

(1) See Table 1 and Tables 6 to 9.

(2) The City of Menifee roadway maximum capacity at Level of Service "E" (see Table 1).**Bold** denotes roadway is currently built at it's roadway standard.

(3) Maximum capacity at Level of Service "E" based on existing number of lanes. Ultimate standard capacity is only assumed if the roadway is constructed at its ultimate cross-section width, including design improvement features (lane width, shoulder width, bike lanes or medians).

(4) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing Existing Plus Project traffic conditions to Existing traffic conditions, as this is a fair representation in the change in Volume-to-Capacity and Level of Service for with and without project traffic conditions.

(5) Scott Road from Haun Road to Antelope Road has been shown as being improved to a 4-lane Arterial for Year 2022 traffic conditions per the I-215/Scott Road Interchange Improvements Project.

Table 15
Intersection Delay and Level of Service With Recommended Mitigation Measures[1]

Existing Plus Project

Intersection	Traffic Control[3]	Existing Peak Hour Delay-LOS[2] Morning	Existing Peak Hour Delay-LOS[2] Evening	Existing Plus Project Peak Hour Delay-LOS[2] Morning	Existing Plus Project Peak Hour Delay-LOS[2] Evening	Significant Impact[4]
Bradley Road (NS) at:						
Craig Avenue / Linda Lee Drive (EW) - #3	AWS	21.7-C	8.4-A	39.4-E	9.8-A	Direct
- With Improvements	**TS**			25.5-C	11.7-B	
Haun Road (NS) at:						
Holland Road (EW) - #10	AWS	24.7-C	19.4-C	33.7-D	48.6-E	Direct
- With Improvements	**TS**			19.9-B	16.9-B	
Garbani Road (EW) - #11	CSS	240.6-F	27.0-D	1,289.7-F	144.2-F	Cumulative
- With Improvements	**TS**			38.7-D	12.4-B	

Existing Plus Ambient Growth Plus Project

Intersection	Traffic Control[3]	Existing Plus Ambient Growth Peak Hour Delay-LOS[2] Morning	Existing Plus Ambient Growth Peak Hour Delay-LOS[2] Evening	Existing Plus Ambient Growth Plus Project Peak Hour Delay-LOS[2] Morning	Existing Plus Ambient Growth Plus Project Peak Hour Delay-LOS[2] Evening	Significant Impact[4]
Bradley Road (NS) at:						
Craig Avenue / Linda Lee Drive (EW) - #3	AWS	25.0-D	8.5-A	35.1-E	9.4-A	Direct
- With Improvements	**TS**			24.3-C	11.3-B	
Haun Road (NS) at:						
Holland Road (EW) - #10	AWS	28.1-D	21.0-C	32.6-D	40.1-E	Direct
- With Improvements	**TS**			21.5-C	16.9-B	
Garbani Road (EW) - #11	CSS	305.3-F	28.8-D	917.4-F	95.3-F	Cumulative
- With Improvements	**TS**			42.7-D	22.7-C	

Existing Plus Ambient Growth Plus Project Plus Cumulative - Without Holland Road Overpass

Intersection	Traffic Control[3]	Existing Plus Ambient Growth Plus Cumulative Peak Hour Delay-LOS[2] Morning	Existing Plus Ambient Growth Plus Cumulative Peak Hour Delay-LOS[2] Evening	Existing Plus Ambient Growth Plus Project Plus Cumulative Peak Hour Delay-LOS[2] Morning	Existing Plus Ambient Growth Plus Project Plus Cumulative Peak Hour Delay-LOS[2] Evening	Significant Impact[4]
Bradley Road (NS) at:						
Holland Road (EW) - #2	TS	60.4-E	19.7-B	81.6-F	21.8-C	Cumulative
- With Improvements	TS			48.3-D	19.9-B	
Craig Avenue / Linda Lee Drive (EW) - #3	AWS	32.9-D	9.0-A	58.4-F	10.6-B	Direct
- With Improvements	**TS**			34.6-C	12.4-B	
Sherman Road (NS) at:						
Garbani Road (EW) - #4	AWS	19.9-C	8.1-A	35.9-E	11.1-B	Direct
- With Improvements	AWS			27.3-D	10.5-B	
Haun Road (NS) at:						
Newport Road (EW) - #9	TS	60.1-E	134.4-F	67.3-E	163.6-F	Cumulative
- With Improvements	TS			45.8-D	79.2-E	
Holland Road (EW) - #10	AWS	69.3-F	147.0-F	109.4-F	261.7-F	Cumulative
- With Improvements	**TS**			26.0-C	39.5-D	
Garbani Road (EW) - #11	CSS	2,325.1-F	147.6-F	10,000.0-F	2,002.3-F	Cumulative
- With Improvements[5]	**TS**			42.6-D	24.2-C	
Scott Road (EW) - #15[6]	TS	87.4-F	69.0-E	114.0-F	115.4-F	Cumulative
- With Improvements[7]	TS			50.5-D	35.3-D	

Existing Plus Ambient Growth Plus Project Plus Cumulative - With Holland Road Overpass

Intersection	Traffic Control[3]	Existing Plus Ambient Growth Plus Cumulative Peak Hour Delay-LOS[2] Morning	Existing Plus Ambient Growth Plus Cumulative Peak Hour Delay-LOS[2] Evening	Existing Plus Ambient Growth Plus Project Plus Cumulative Peak Hour Delay-LOS[2] Morning	Existing Plus Ambient Growth Plus Project Plus Cumulative Peak Hour Delay-LOS[2] Evening	Significant Impact[4]
Haun Road (NS) at:						
Holland Road (EW) - #10	AWS	195.2-F	318.8-F	247.5-F	422.5-F	Cumulative
- With Improvements	**TS**			31.9-C	38.9-D	
Garbani Road (EW) - #11	CSS	984.2-F	104.9-F	10,000.0-F	1,942.1-F	Cumulative
- With Improvements[5]	**TS**			35.5-D	22.5-C	
Hanover Lane (NS) at:						
Holland Road (EW) - #24	AWS	204.9-F	178.3-F	216.8-F	206.6-F	Cumulative
- With Improvements	**TS**			33.3-C	35.5-D	

Notes:
(1) See Table 3 and Tables 10 to 13.
(2) Delay shown in seconds/vehicle; LOS = Level of Service.
For intersections with traffic signal or all way stop control, delay-LOS are based on overall average intersection delay. For intersections with cross street stop control, delay-LOS are based on the worst individual movement (or movements sharing a single lane).
(3) TS = Traffic Signal; AWS = All Way Stop; CSS = Cross Street Stop
(4) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing without project to with project traffic conditions.
(5) Improvements at Haun Road/Garbani Road include restriping southbound right turn lane to shared through/right turn lane and construction of an outbound lane on the south leg.
(6) The I-215 Freeway at Scott Road interchange project is scheduled for opening in 2020 according to the Riverside County Transportation Department (http://rcprojects.org/scottroadinterchange/).
The lane geometrics utilized in this analysis for the interchange as well as Haun Road at Scott Road and Antelope Road at Scott Road are those provided upon project completion.
(7) Improvements include restriping southbound shared left/through/right turn lane to a shared through/right turn lane.

Table 16

Recommended Roadway Segment Mitigation Measures and Project Fair Share Contribution

		Recommended Mitigation Measures by Scenario								Roadway Segment Volumes								
						Without Holland Overpass		With Holland Overpass			Without Holland Overpass				With Holland Overpass			
Roadway Segment	Recommended Mitigation Measure	Existing Plus Project[1]	Significant Impact[2]	Existing Plus Ambient Growth Plus Project[1]	Significant Impact[2]	Existing Plus Ambient Growth Plus Project Plus Cumulative[1]	Significant Impact[2]	Existing Plus Ambient Growth Plus Project Plus Cumulative[1]	Significant Impact[2]	Existing	Existing Plus Ambient Growth Plus Project Plus Cumulative	New Trips	Project Trips	Project % of New Trips	Existing Plus Ambient Growth Plus Project Plus Cumulative	New Trips	Project Trips	Project % of New Trips[3]
Haun Road:																		
La Piedra to Holland Road	Widen from three to four travel lanes					X	Cumulative	X	Direct	15,628	26,738	11,110	3,642	32.8%	27,524	11,896	2,888	24.3%
Holland Road to Garbani Road	Widen from two to four travel lanes	X	Direct	X	Direct	X	Cumulative	X	Direct	10,560	23,283	12,723	4,180	32.9%	14,950	4,390	4,579	104.3%
Garbani Road to Scott Road	Widen from two to four travel lanes	X	Direct	X	Direct	X	Cumulative			12,301	26,867	14,566	5,585	38.3%				
Scott Road:																		
West of Haun Road to Haun Road	Widen from two to four travel lanes	X	Cumulative	X	Cumulative	X	Cumulative			14,297	19,970	5,673	494	8.7%				
Haun Road to I-215 Freeway	Widen from three/four to six travel lanes					X	Direct			23,858	38,428	14,570	2,843	19.5%				
I-215 Freeway to Antelope Road	Widen from four to six travel lanes	X	Cumulative	X	Cumulative	X	Cumulative			35,206	44,203	8,997	1,024	11.4%				
Newport Road:																		
West of Bradley Road to Bradley Road	Widen from four to six travel lanes					X	Cumulative			34,394	48,795	14,401	922	6.4%				
Bradley Road to Haun Road	Widen from six to eight travel lanes					X	Cumulative			43,798	62,649	18,851	686	3.6%				

Notes:

(1) See Tables 6 to 9 and Table 14.

(2) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing without project to with project traffic conditions.

(3) The project percentage of new trips is overestimated since the Holland Road Overpass would redirect traffic volumes within the roadway network and the existing traffic volumes do not reflect this redistribution.

Table 17 (1 of 2)
Recommended Intersection Mitigation Measures and Project Fair Share Contribution

		Recommended Mitigation Measures by Scenario								Intersection Volumes									
						Without Holland Overpass		With Holland Overpass				Without Holland Overpass				With Holland Overpass			
Intersection	Recommended Mitigation Measure	Existing Plus Project[1]	Significant Impact[2]	Existing Plus Ambient Growth Plus Project	Significant Impact[2]	Existing Plus Ambient Growth Plus Project Plus Cumulative[1]	Significant Impact[2]	Existing Plus Ambient Growth Plus Project Plus Cumulative[1]	Significant Impact[2]	Peak Hour	Existing	Existing Plus Ambient Growth Plus Project Plus Cumulative	New Trips	Project Trips	Project % of New Trips	Existing Plus Ambient Growth Plus Project Plus Cumulative	New Trips	Project Trips	Project % of New Trips[3]
Bradley Road (NS) at:																			
Holland Road (EW) - #2	Construct NB Right Turn Lane					X	Cumulative			Morning	2,200	2,635	435	107	24.6%				
										Evening	1,297	1,965	668	220	32.9%				
Craig Avenue / Linda Lee Drive (EW) - #3	Install Traffic Signal	X	Direct	X	Direct	X	Direct												
Sherman Road (NS) at:																			
Garbani Road (EW) - #4	Construct NB Shared Left/Through/Right Turn Lane	**X**		**X**		**X**	Direct	**X**											
	Construct SB Left Turn Lane					X													
Multi-Family Residential Access (EW) - #5	Construct NB Shared Through/Right Turn Lane	**X**		**X**		**X**		**X**											
	Construct SB Shared Left/Through Lane	**X**		**X**		**X**		**X**											
	Constrct WB Shared Left/Right Turn Lane	**X**		**X**		**X**		**X**											
Single-Family Residential Access (EW) - #6	Construct NB Shared Through/Right Turn Lane	**X**		**X**		**X**		**X**											
	Construct SB Shared Left/Through Lane	**X**		**X**		**X**		**X**											
	Constrct WB Shared Left/Right Turn Lane	**X**		**X**		**X**		**X**											
Multi-Family Residential Access (NS) at:																			
Garbani Road (EW) - #7	Construct NB Shared Left/Right Turn Lane	**X**		**X**		**X**		**X**											
	Construct WB Left Turn Lane	**X**		**X**		**X**		**X**											
Commercial Access (NS) at:																			
Garbani Road (EW) - #8	Construct NB Right Turn Lane	**X**		**X**		**X**		**X**											
Haun Road (NS) at:																			
Newport Road (NS) - #9	Restripe SB Shared Through/Right turn Lane to Right Turn Lane					X	Cumulative												
	Install SB Right Turn Overlap					X													
	Install EB Right Turn Overlap					X				Morning	4,806	5,870	1,064	171	16.1%				
	Construct Additional WB Right Turn Lane with Overlap					X				Evening	5,720	8,752	3,032	322	10.6%				
Holland Road (EW) - #10	Construct NB Right Turn Lane		Direct		Direct		Cumulative	X	Cumulative										
	Construct WB Left Turn Lane							X											
	Construct Additional WB Through Lane							X											
	Construct WB Right Turn Lane							X		Morning	1,371	2,036	665	182	27.4%				
	Install Traffic Signal	X		X		X		X		Evening	1,422	2,757	1,335	336	25.2%				
Garbani Road (EW) - #11	Restripe SB Right Turn Lane to Shared Through/Right Turn Lane		Cumulative		Cumulative	X	Cumulative	X	Cumulative										
	Construct WB Left Turn Lane	X		X		X				Morning	1,304	2,052	748	311	41.6%	2,349	1,045	326	31.2%
	Install Traffic Signal	X		X		X		X		Evening	1,009	2,535	1,526	610	40.0%	2,456	1,447	647	44.7%
North Project Access (EW) - #12	Construct NB Left Turn Lane	**X**		**X**		**X**		**X**											
	Construct Additional SB Shared Through/Right Turn Lane	**X**		**X**		**X**		**X**											
	Construct EB Shared Left/Right Turn Lane	**X**		**X**		**X**		**X**											
	Install Traffic Signal	**X**		**X**		**X**		**X**											
Central Project Access (EW) - #13	Construct NB Left Turn Lane	**X**		**X**		**X**		**X**											
	Construct Additional SB Shared Through/Right Turn Lane	**X**		**X**		**X**		**X**											

Table 17 (2 of 2)
Recommended Intersection Mitigation Measures and Project Fair Share Contribution

		Recommended Mitigation Measures by Scenario								Intersection Volumes									
						Without Holland Overpass		With Holland Overpass				Without Holland Overpass				With Holland Overpass			
Intersection	Recommended Mitigation Measure	Existing Plus Project[1]	Significant Impact[2]	Existing Plus Ambient Growth Plus Project	Significant Impact[2]	Existing Plus Ambient Growth Plus Project Plus Cumulative[1]	Significant Impact[2]	Existing Plus Ambient Growth Plus Project Plus Cumulative[1]	Significant Impact[2]	Peak Hour	Existing	Existing Plus Ambient Growth Plus Project Plus Cumulative	New Trips	Project Trips	Project % of New Trips	Existing Plus Ambient Growth Plus Project Plus Cumulative	New Trips	Project Trips	Project % of New Trips[3]
	Construct EB Left Turn Lane	**X**		**X**		**X**		**X**											
	Construct EB Right Turn Lane	**X**		**X**		**X**		**X**											
	Install Traffic Signal	**X**		**X**		**X**		**X**											
South Project Access (EW) - #14	Construct EB Right Turn Lane	**X**		**X**		**X**		**X**											
Scott Road (EW) - #15	Construct Additional SB Left Turn Lane					X	Cumulative			Morning	2,148	3,227	1,079	171	15.8%				
	Install WB Right Turn Overlap					X				Evening	1,954	3,517	1,563	304	19.4%				
Hanover Lane (NS) at:																			
Holland Road (EW) - #24	Install Traffic Signal							X	Cumulative										

Notes:
(1) See Tables 10 to 13 and Table 15; X = Non project-specific improvement; **X** = project-specific improvement

(2) Per the City of Menifee Traffic Impact Study Guidelines, a direct significant impact occurs if project traffic results in change in Level of Service from acceptable to deficient, and a cumulative significant impact occurs if project traffic exceeds 50 peak hour trips at an intersection or roadway segment operating at a deficient Level of Service without the project. The significance criteria has been analyzed by comparing without project to with project traffic conditions.

(3) The project percentage of new trips is overestimated since the Holland Road Overpass would redirect traffic volumes within the roadway network and the existing traffic volumes do not reflect this redistribution.

Table 18
Traffic Signal Warrant Analysis

	Existing	Existing Plus Project	Existing Plus Ambient Growth Plus Project	Existing Plus Ambient Growth Plus Project Plus Cumulative	
				- W/O Holland Overpass	- W/Holland Overpass
Bradley Road (NS) at:					
Craig Avenue / Linda Lee Drive (EW) - #3	Warranted	Warranted	Warranted	Warranted	Warranted
Sherman Road (NS) at:					
Garbani Road (EW) - #4	Not Warranted	Not Warranted	Not Warranted	Not Warranted	Not Warranted
Multi-Family Residential Access (EW) - #5	Not Warranted	Not Warranted	Not Warranted	Not Warranted	Not Warranted
Single-Family Residential Access (EW) - #6	Not Warranted	Not Warranted	Not Warranted	Not Warranted	Not Warranted
Multi-Family Residential Access (NS) at:					
Garbani Road (EW) - #7	Not Warranted	Not Warranted	Not Warranted	Not Warranted	Not Warranted
Commercial Access (NS) at:					
Garbani Road (EW) - #8	Not Warranted	Not Warranted	Not Warranted	Not Warranted	Not Warranted
Haun Road (NS) at:					
Holland Road (EW) - #10	Warranted	Warranted	Warranted	Warranted	Warranted
Garbani Road (EW) - #11	Warranted	Warranted	Warranted	Warranted	Warranted
North Project Access (EW) - #12		Warranted	Warranted	Warranted	Warranted
Central Project Access (EW) - #13		Warranted	Warranted	Warranted	Warranted
South Project Access (EW) - #14		Not Warranted	Not Warranted	Not Warranted	Not Warranted

Notes:
If a study intersection is warranted for Existing conditions, it will also be warranted for all future analysis scenarios. Conversely, if a study intersection is not warranted for Existing Plus Ambient Growth Plus Project Plus Cumulative (Without and With Holland Overpass), it would not be warranted for any prior analysis scenario. Project access intersections warranted for a traffic signal for Existing Plus Project traffic conditions were also analyzed for Existing Plus Ambient Growth Plus Project traffic conditions to ascertain if the intersection is also warranted for this scenario. This is because the later scenario was analyzed with Phase 1 of the project being built and not the entire buildout of the project. If warranted for Existing Plus Ambient Growth Plus Project traffic conditions, these project access locations will also be warranted for future traffic conditions.

Table 19
SYNCHRO Intersection Delay and Level of Service

Intersection	Peak Hour Delay-LOS[1/2]			
	Existing Plus Ambient Growth Plus Project Plus Cumulative			
	- Without Holland Overpass		- With Holland Overpass	
	Morning	Evening	Morning	Evening
Haun Road (NS) at:				
Garbani Road (EW) - #11	36.0-D	27.7-C	36.7-D	24.1-C
North Project Access (EW) - #12	3.7-A	21.4-C	3.5-A	9.1-A
Central Project Access (EW) - #13	19.9-B	42.3-D	14.6-B	15.2-B
South Project Access (EW) - #14	16.9-C	20.6-C	14.2-B	12.8-B
Internal On-Site Intersection	35.1-D	35.2-D	35.3-D	35.1-D

Notes:

(1) Delay and Level of Service have been calculated using the following analysis software: SYNCHRO 10.

(2) Delay shown in seconds/vehicle; LOS = Level of Service.
For intersections with traffic signal or all way stop control, delay-LOS are based on overall average intersection delay. For intersections with cross street stop control, delay-LOS are based on the worst individual movement (or movements sharing a single lane).

Table 20
Queueing Analysis[1]

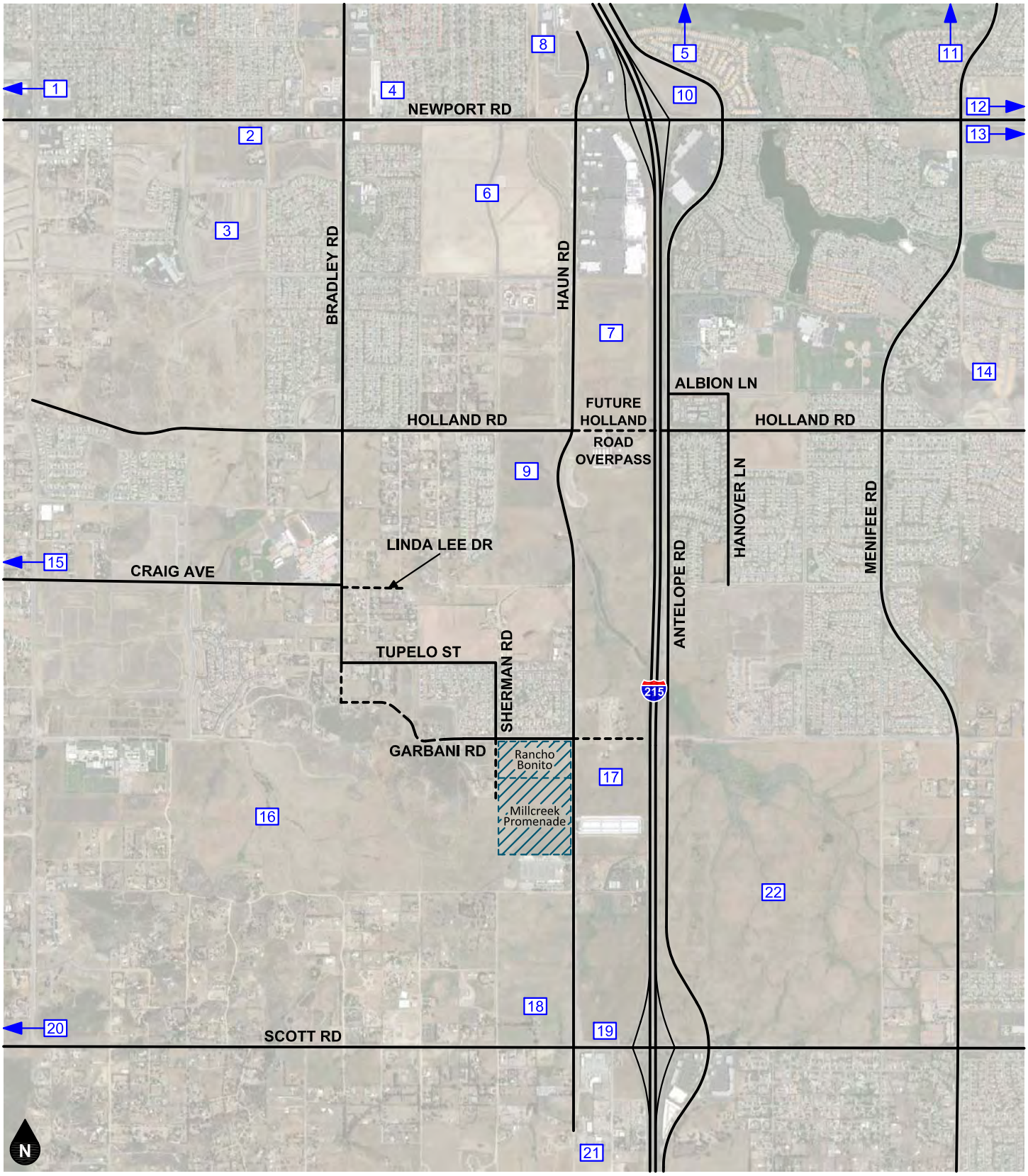
Intersection	Turning Movement	Existing Plus Ambient Growth Plus Project Plus Cumulative - Without Holland Road Overpass		Minimum Storage Length[2]	Existing Plus Ambient Growth Plus Project Plus Cumulative - With Holland Road Overpass		Minimum Storage Length[2]
		Peak Hour			Peak Hour		
		Morning	Evening		Morning	Evening	
Sherman Road (NS)							
Multi-Family Residential Access (EW) - #5	Southbound Shared Left/ Through Lane	<25 Feet[3]	<25 Feet	**25 Feet**	<25 Feet	<25 Feet	**25 Feet**
	Westbound Shared Left/Right Turn Lane	<25 Feet	<25 Feet	**25 Feet**	<25 Feet	<25 Feet	**25 Feet**
Single-Family Residential Access (EW) - #6	Southbound Shared Left/ Through Lane	<25 Feet	<25 Feet	**25 Feet**	<25 Feet	<25 Feet	**25 Feet**
	Westbound Shared Left/Right Turn Lane	<25 Feet	<25 Feet	**25 Feet**	<25 Feet	<25 Feet	**25 Feet**
Multi-Family Residential Access (NS) at:							
Garbani Road (EW) - #7	Northbound Shared Left/Right Turn Lane	<25 Feet	<25 Feet	**25 Feet**	<25 Feet	<25 Feet	**25 Feet**
	Eastbound Shared Through/Right Turn Lane	<25 Feet	<25 Feet	**25 Feet**	<25 Feet	<25 Feet	**25 Feet**
	Westbound Left Turn Lane	<25 Feet	<25 Feet	**25 Feet**	<25 Feet	<25 Feet	**25 Feet**
Commercial Access (NS) at:							
Garbani Road (EW) - #8	Northbound Right Turn Lane	<25 Feet	<25 Feet	**25 Feet**	<25 Feet	<25 Feet	**25 Feet**
	Eastbound Shared Through/Right Turn Lane	<25 Feet	<25 Feet	**25 Feet**	<25 Feet	<25 Feet	**25 Feet**
Haun Road (NS) at:							
North Project Access (EW) - #12	Northbound Left Turn Lane	<25 Feet	27.50 Feet	**50 Feet**	<25 Feet	<25 Feet	**25 Feet**
	Southbound Shared Through/Right Turn Lane	104.95 Feet	119.24 Feet	**125 Feet**	27.24 Feet	74.17 Feet	**75 Feet**
	Eastbound Shared Left/Right Turn Lane	52.94 Feet	200.16 Feet	**225 Feet**	58.83 Feet	216.29 Feet	**225 Feet**
Central Project Access (EW) - #13	Northbound Left Turn Lane	<25 Feet	57.16 Feet	**75 Feet**	<25 Feet	32.91 Feet	**50 Feet**
	Southbound Shared Through/Right Turn Lane	51.06 Feet	110.44	**125 Feet**	39.99 Feet	59.35 Feet	**75 Feet**
	Eastbound Left Turn Lane	110.57 Feet	199.07 Feet	**200 Feet**	113.49 Feet	201.30 Feet	**225 Feet**
	Eastbound Right Turn Lane	87.47 Feet	100.81 Feet	**125 Feet**	85.36 Feet	97.69 Feet	**100 Feet**
South Project Access (EW) - #14	Southbound Shared Through/Right Turn Lane	<25 Feet	<25 Feet	**25 Feet**	<25 Feet	<25 Feet	**25 Feet**
	Eastbound Right Turn Lane	<25 Feet	<25 Feet	**25 Feet**	<25 Feet	<25 Feet	**25 Feet**

Notes:

(1) Queueing analysis based on 95th-Percentile Queue Length. See Appendix D.

(2) Minimum queue lengths rounded to nearest 25 feet.

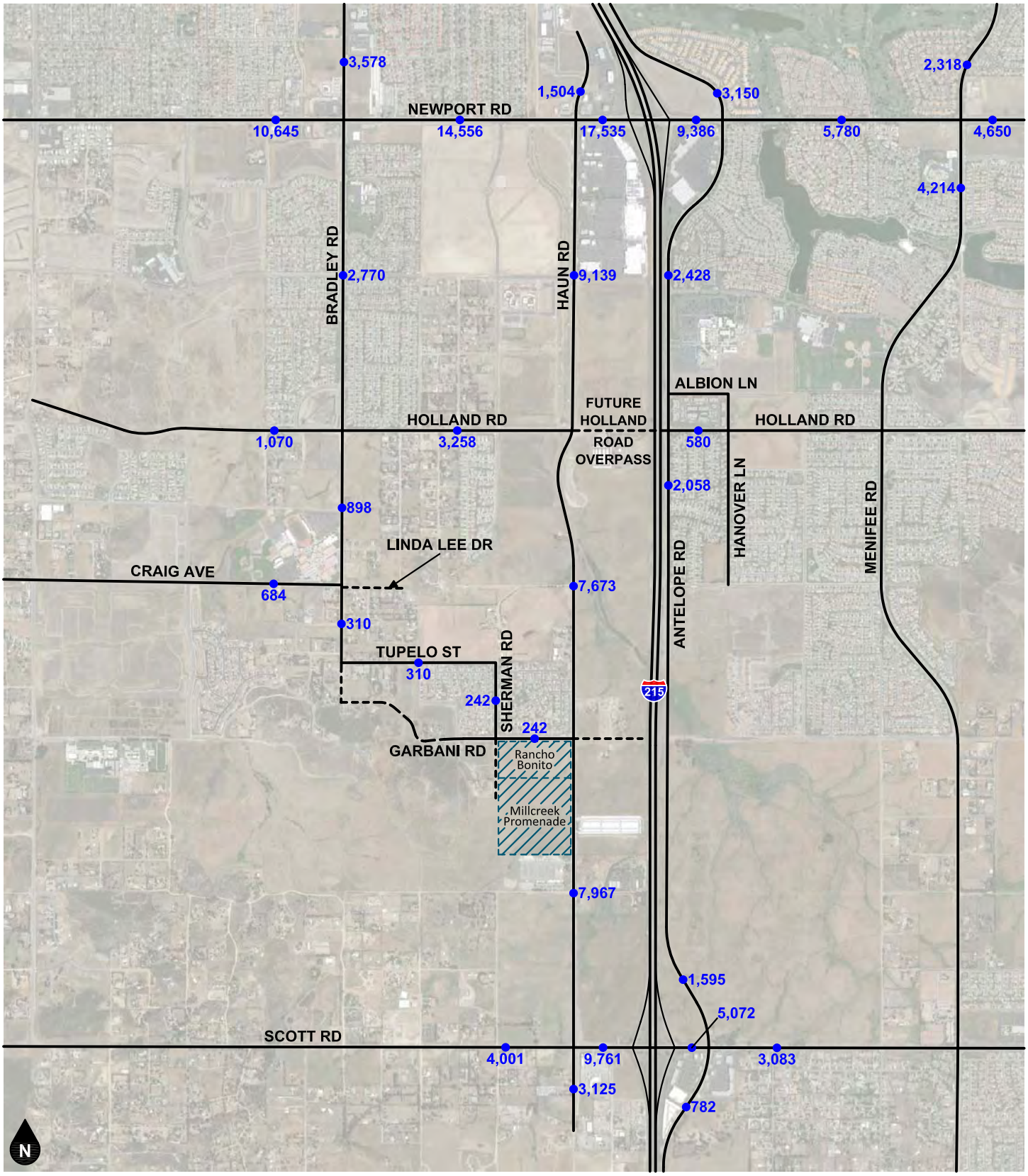
(3) <25 Feet = Queue length of less than 25 feet is rounded up to 25 feet to allow for one standard car length.



Legend

Traffic Analysis Zone

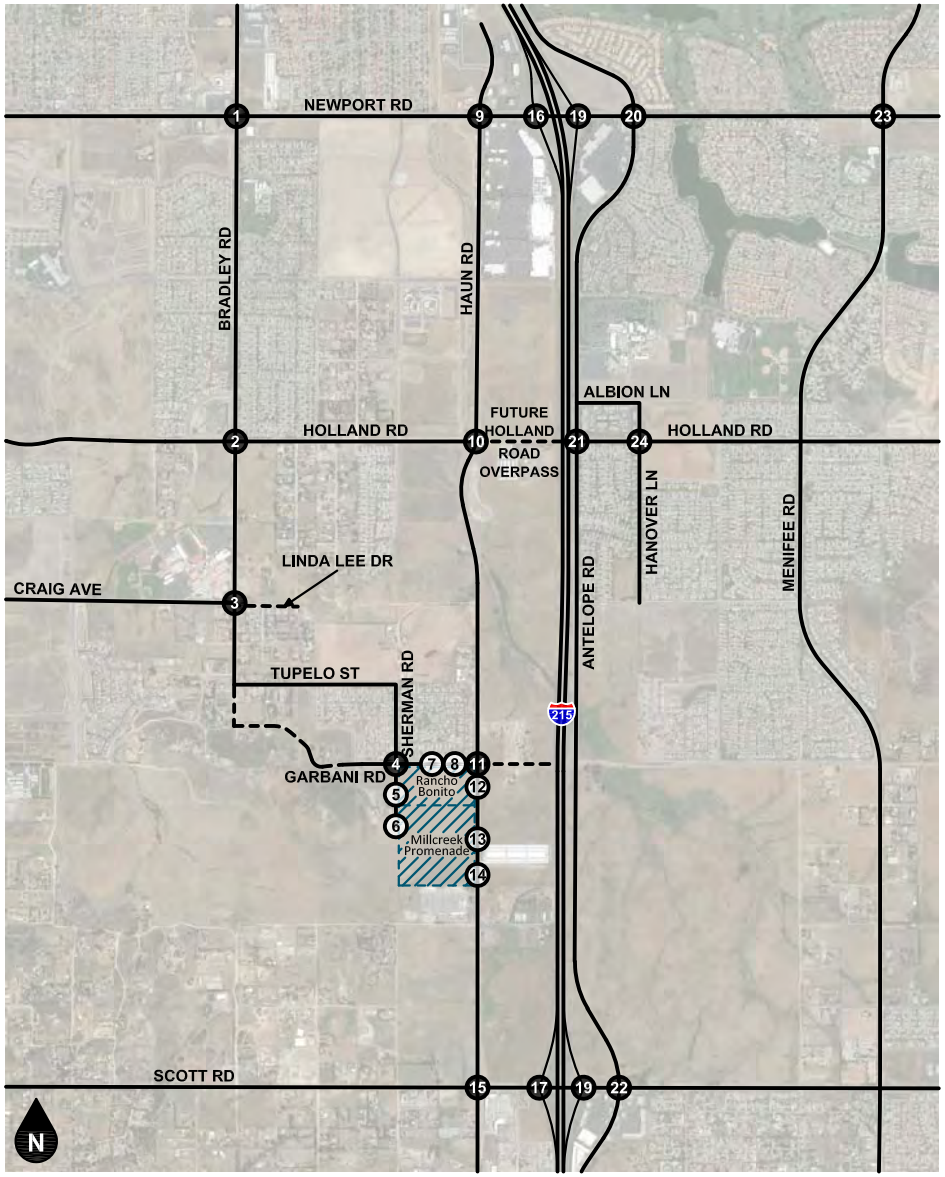
Figure 27
Other Development Traffic Analysis Zone Map

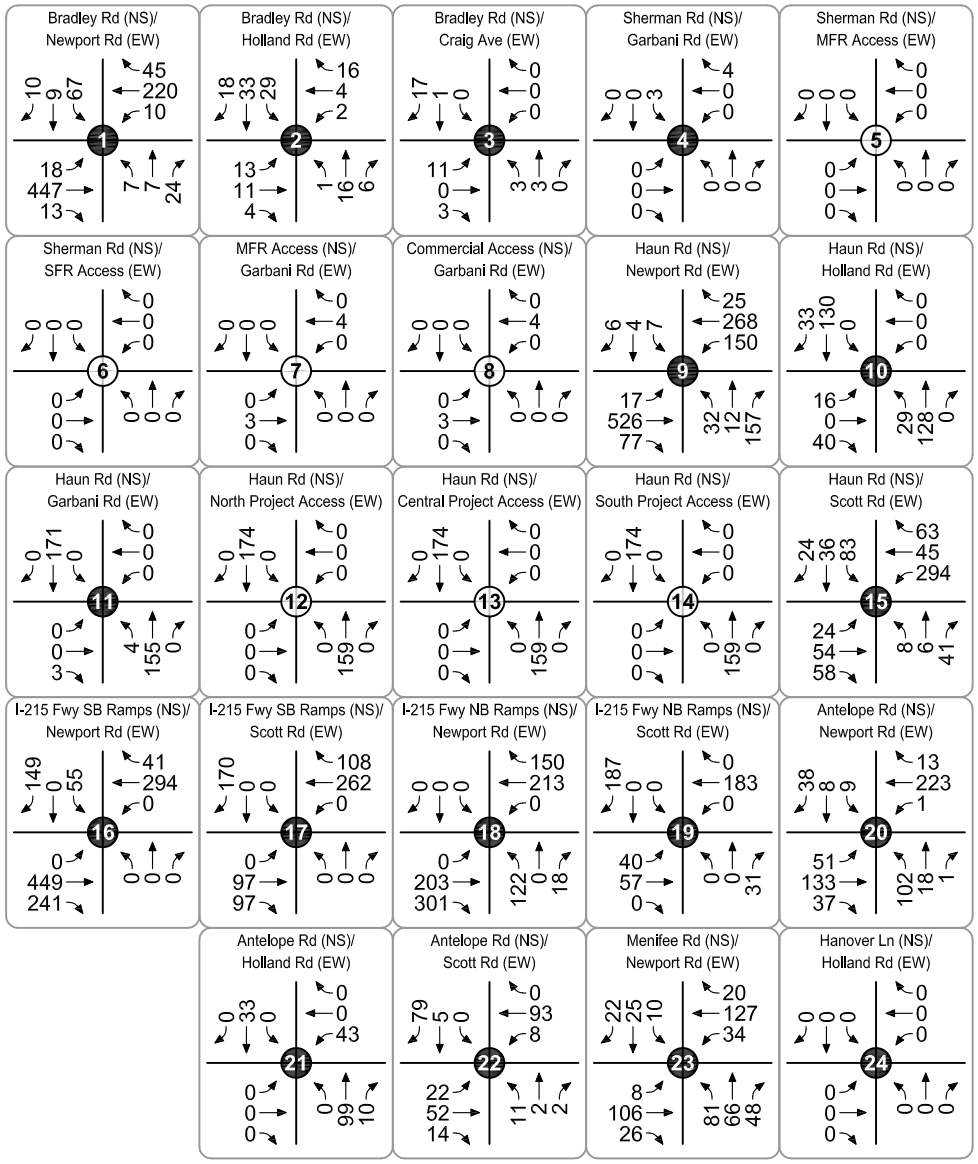


Legend

●## Vehicles Per Day

Figure 28
Other Development Average Daily Traffic Volumes



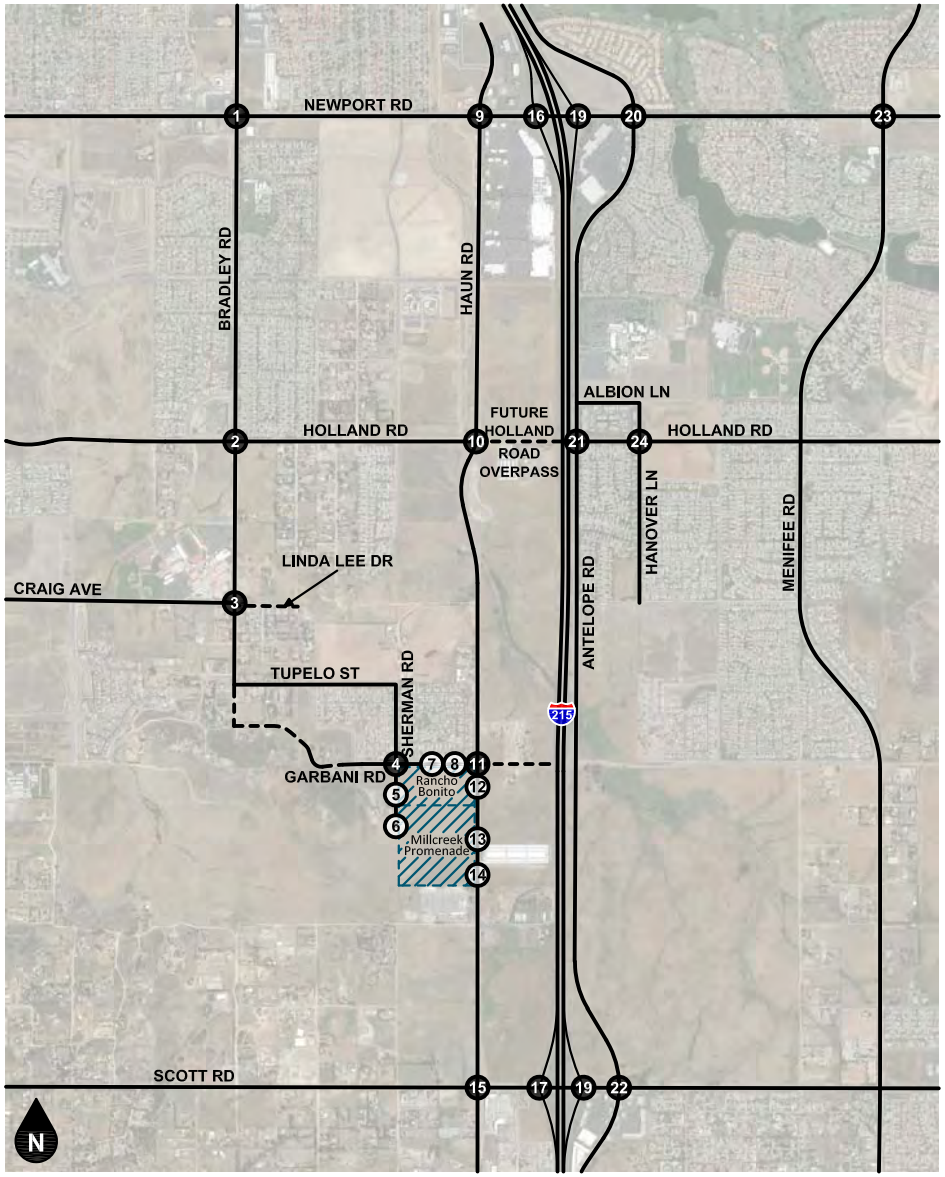


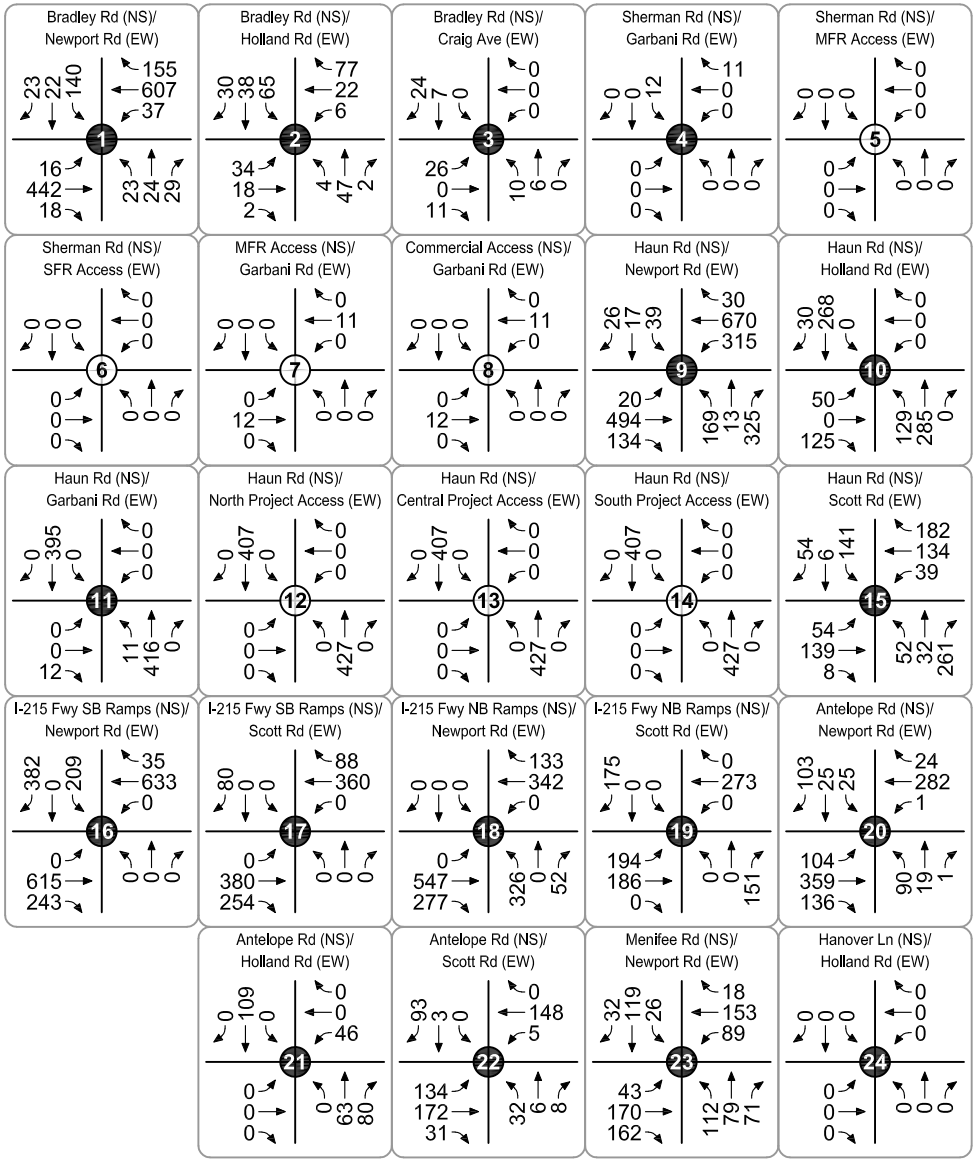
Legend

(#) Study Intersection

(#) Project Driveway

Figure 29
Other Development
AM Peak Hour Intersection Turning Movement Volumes



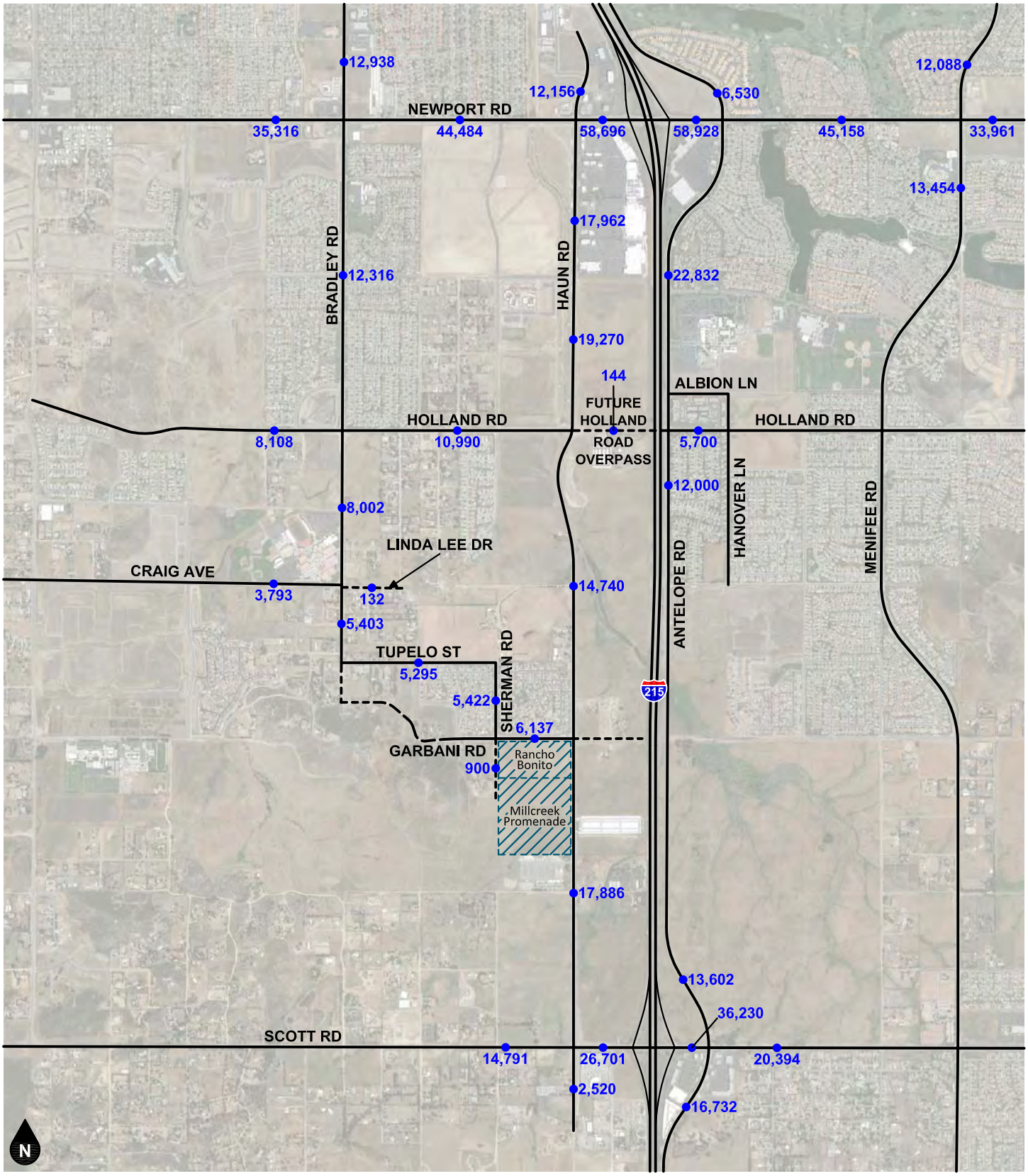


Legend

(#) Study Intersection

(#) Project Driveway

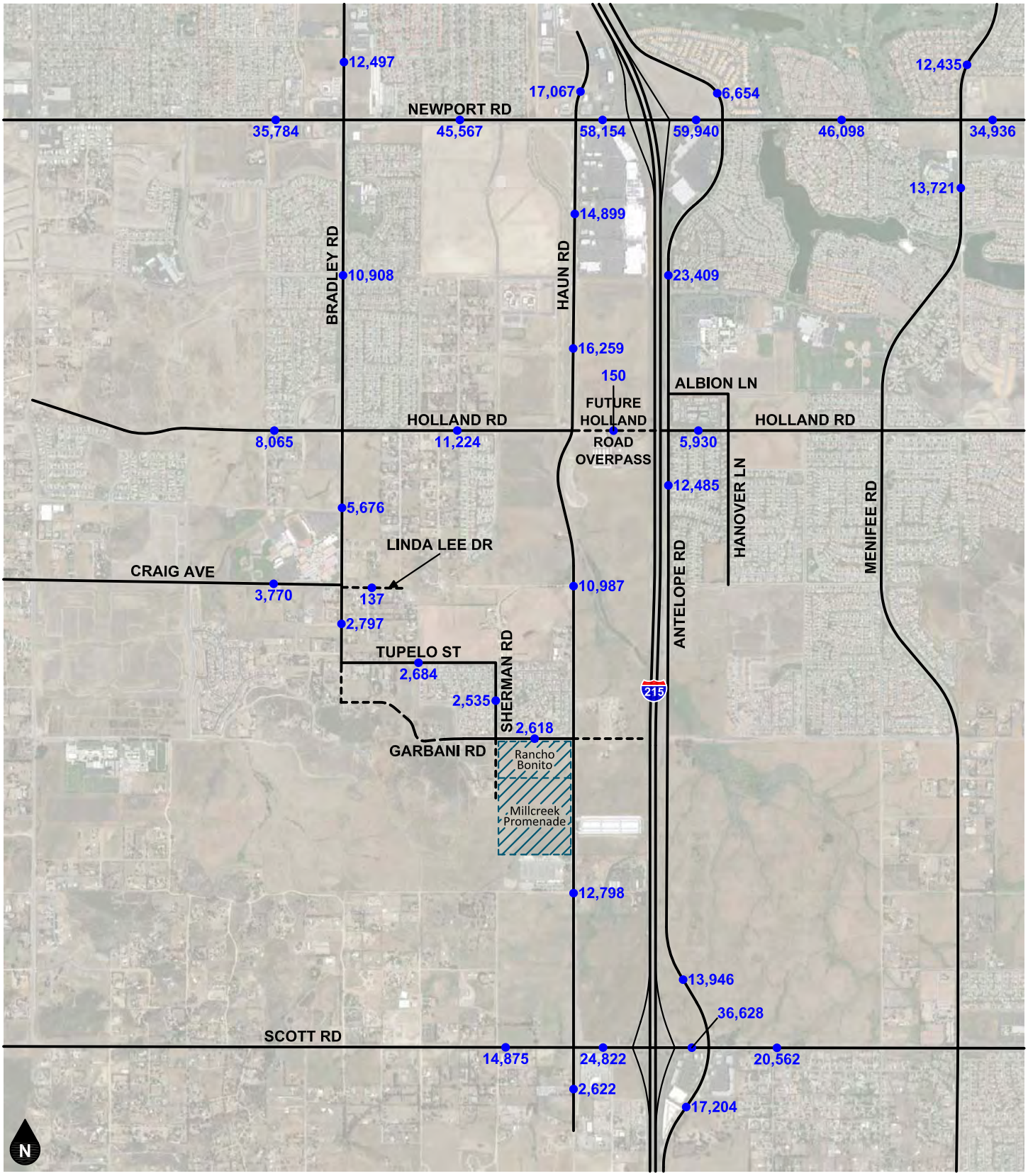
Figure 30
Other Development
PM Peak Hour Intersection Turning Movement Volumes



Legend

●## Vehicles Per Day

Figure 31
Existing Plus Project Average Daily Traffic Volumes



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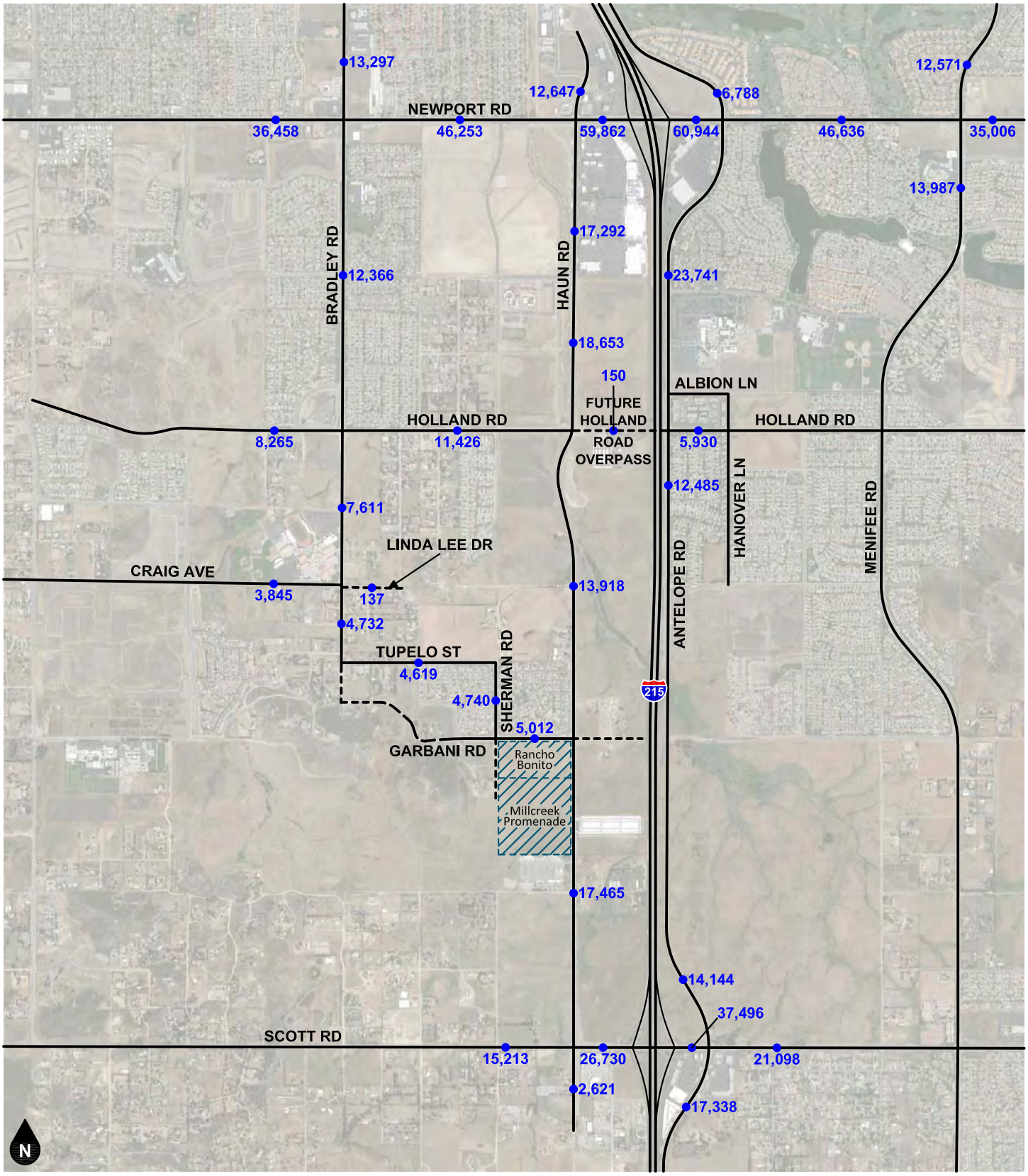
●## Vehicles Per Day

Figure 32
Existing Plus Ambient Growth Average Daily Traffic Volumes



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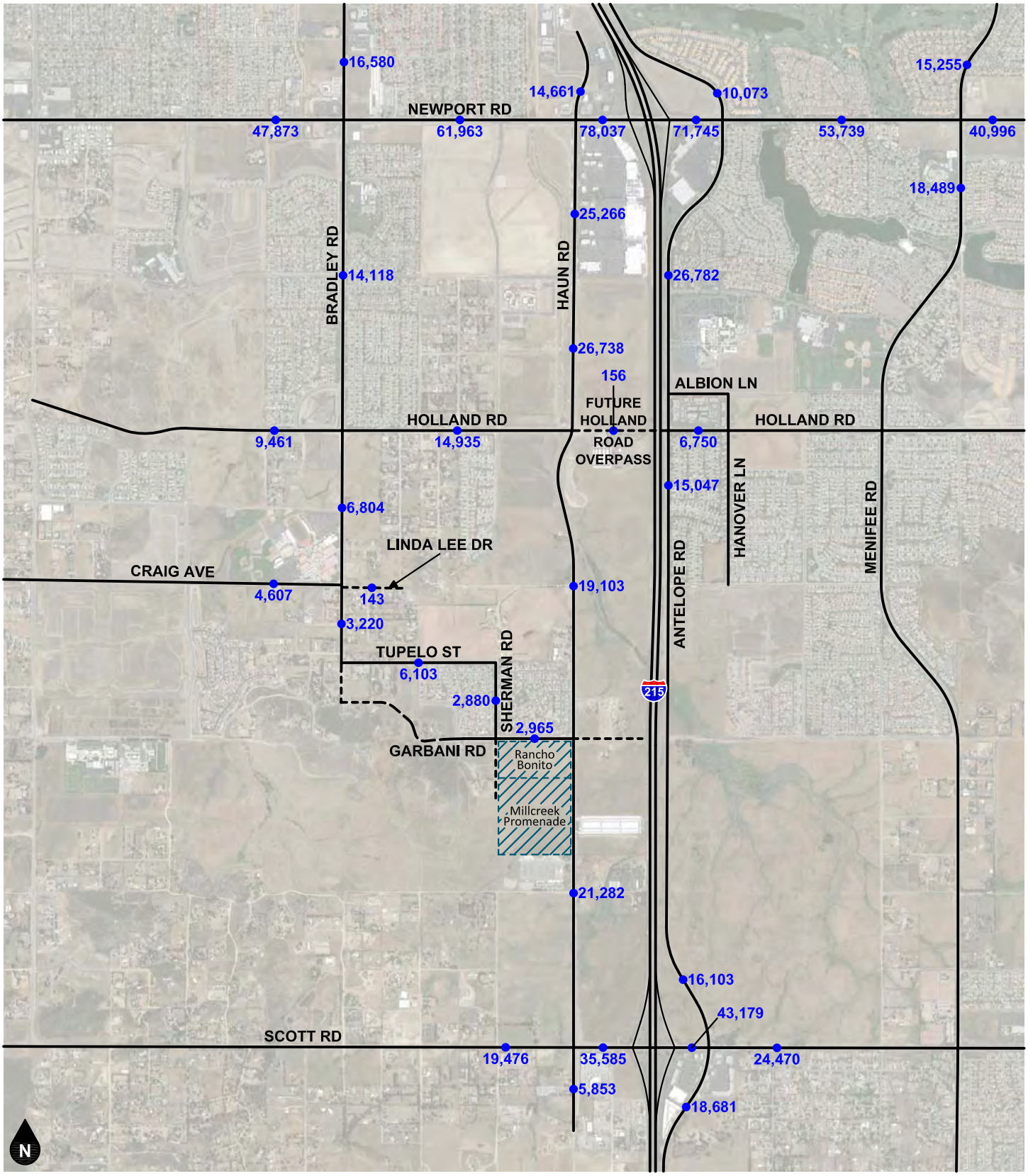
●## Vehicles Per Day

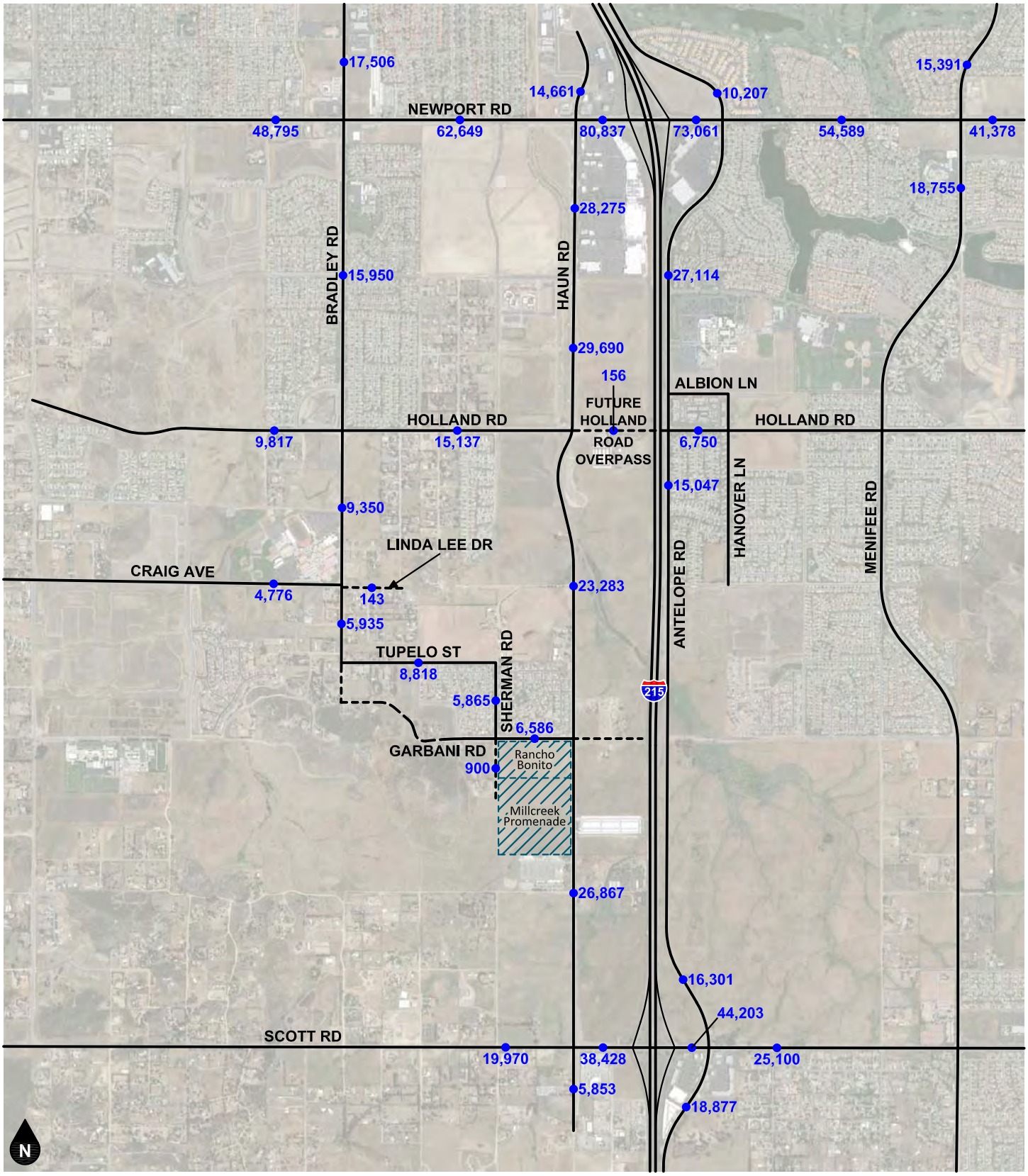
Figure 33
Existing Plus Ambient Growth Plus Project
Average Daily Traffic Volumes



Legend

●## Vehicles Per Day

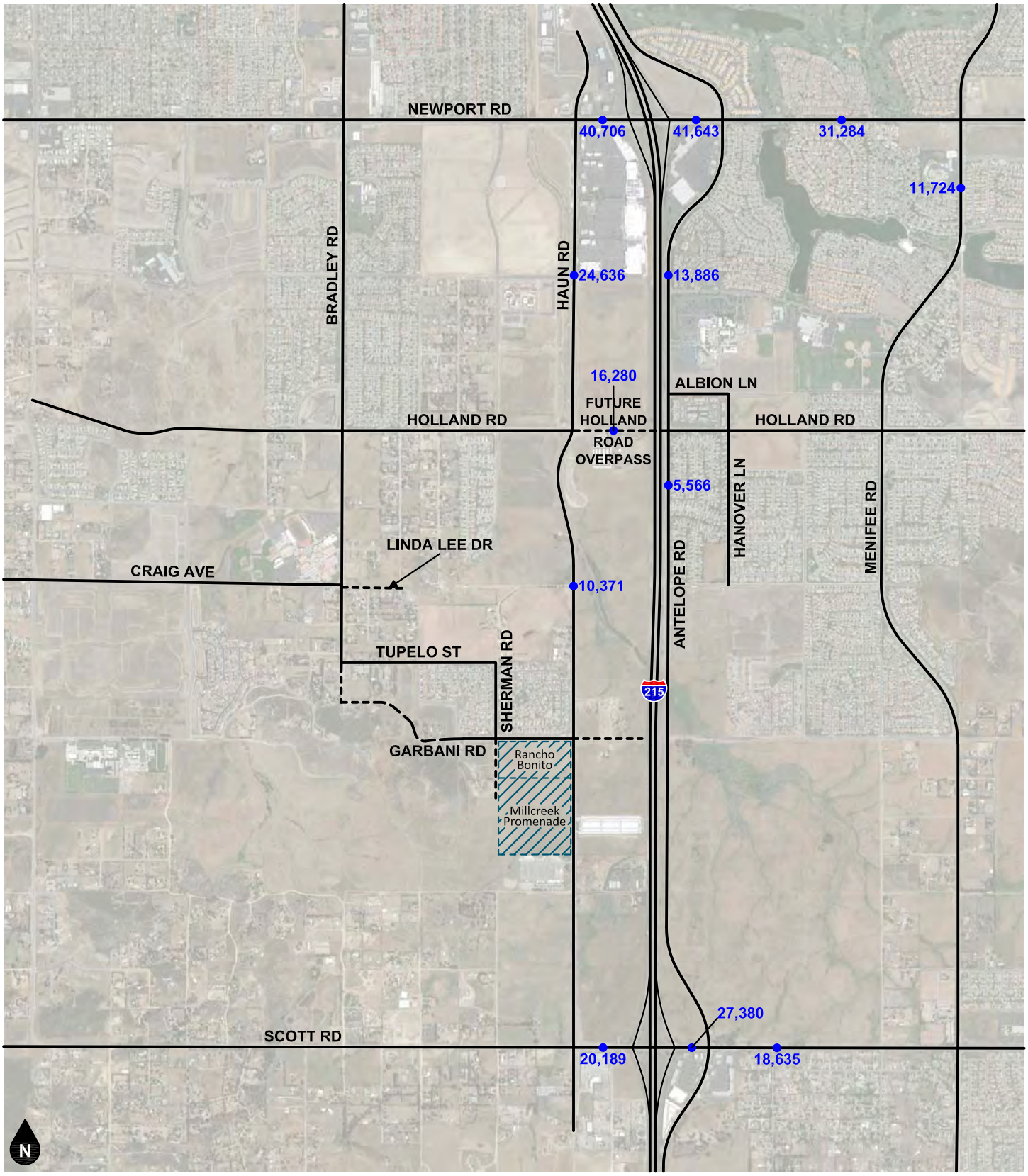
Figure 34
Existing Plus Ambient Growth Plus Cumulative Average Daily Traffic Volumes - Without Holland Road Overpass



Legend

●## Vehicles Per Day

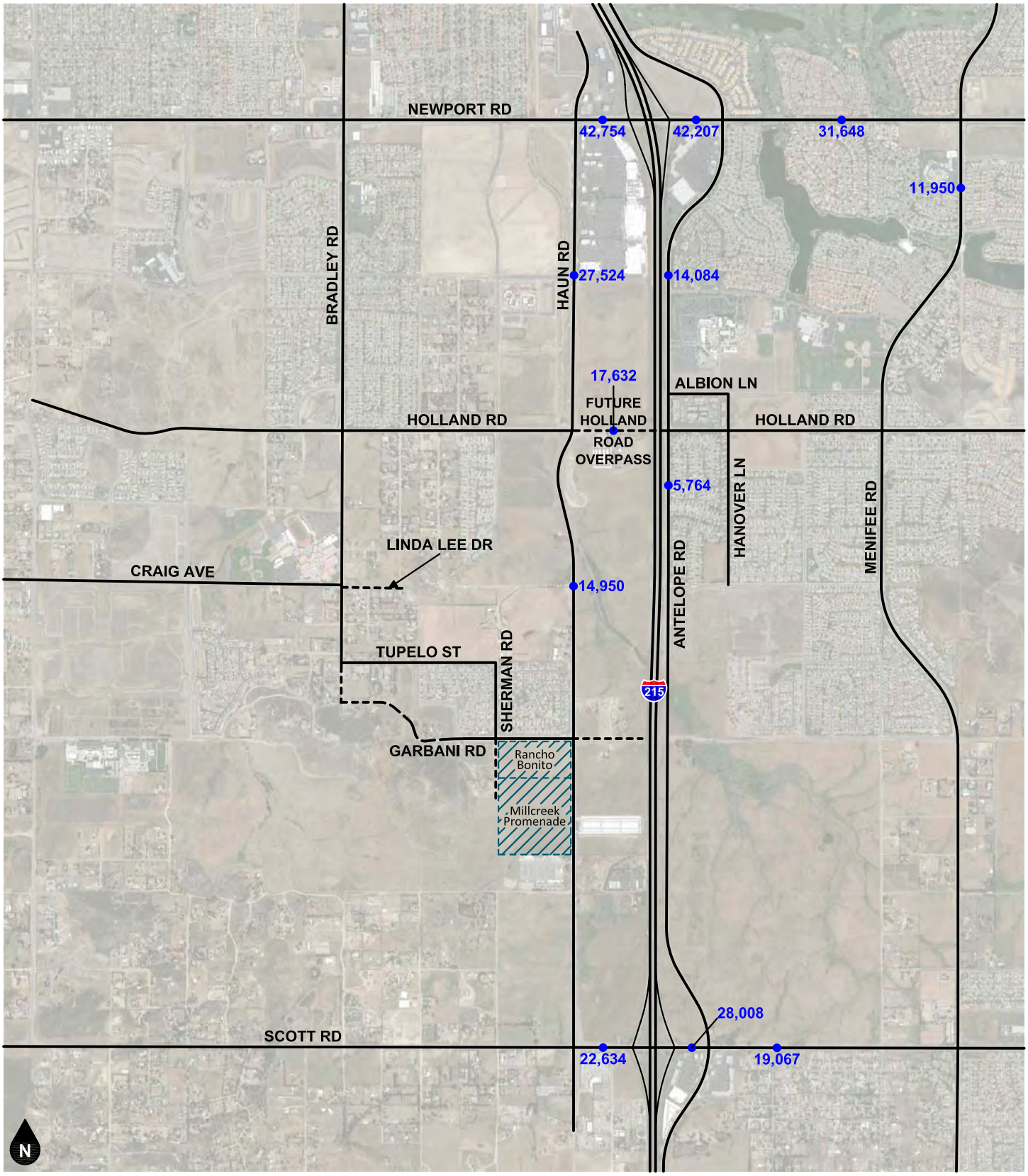
Figure 35
Existing Plus Ambient Growth Plus Project Plus Cumulative Average Daily Traffic Volumes - Without Holland Road Overpass



Legend

●## Vehicles Per Day

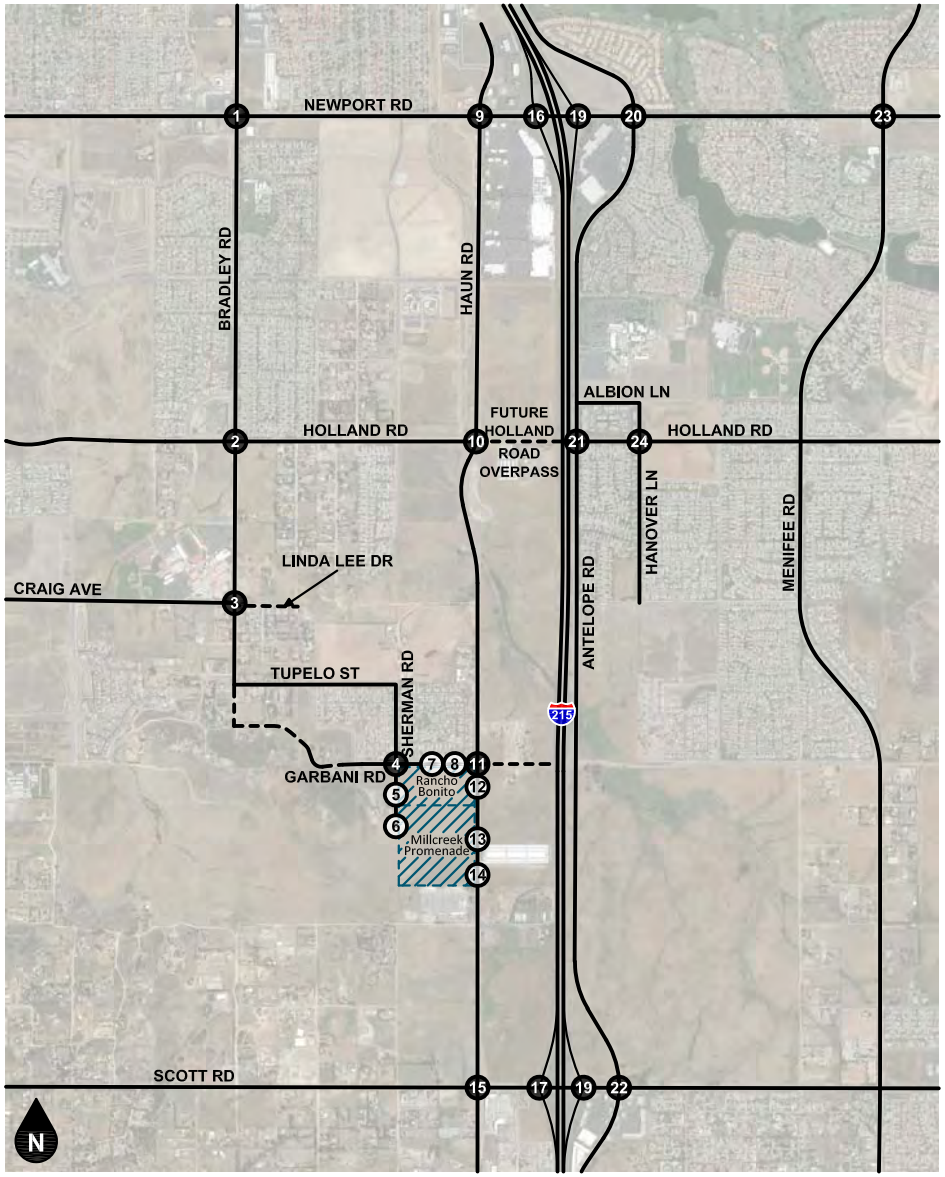
Figure 36
Existing Plus Ambient Growth Plus Cumulative
Average Daily Traffic Volumes - With Holland Road Overpass

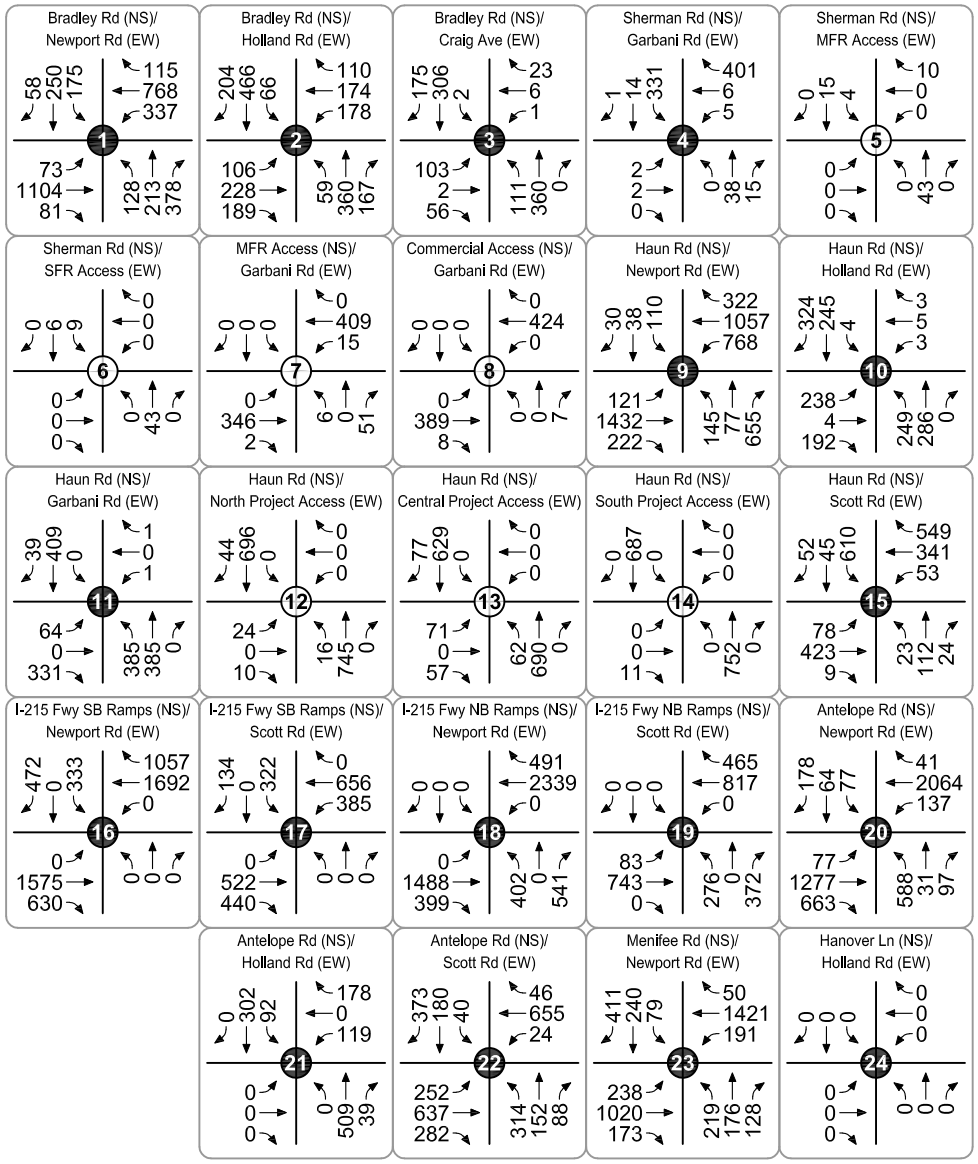


Legend

●## Vehicles Per Day

Figure 37
Existing Plus Ambient Growth Plus Project Plus Cumulative Average Daily Traffic Volumes - With Holland Road Overpass



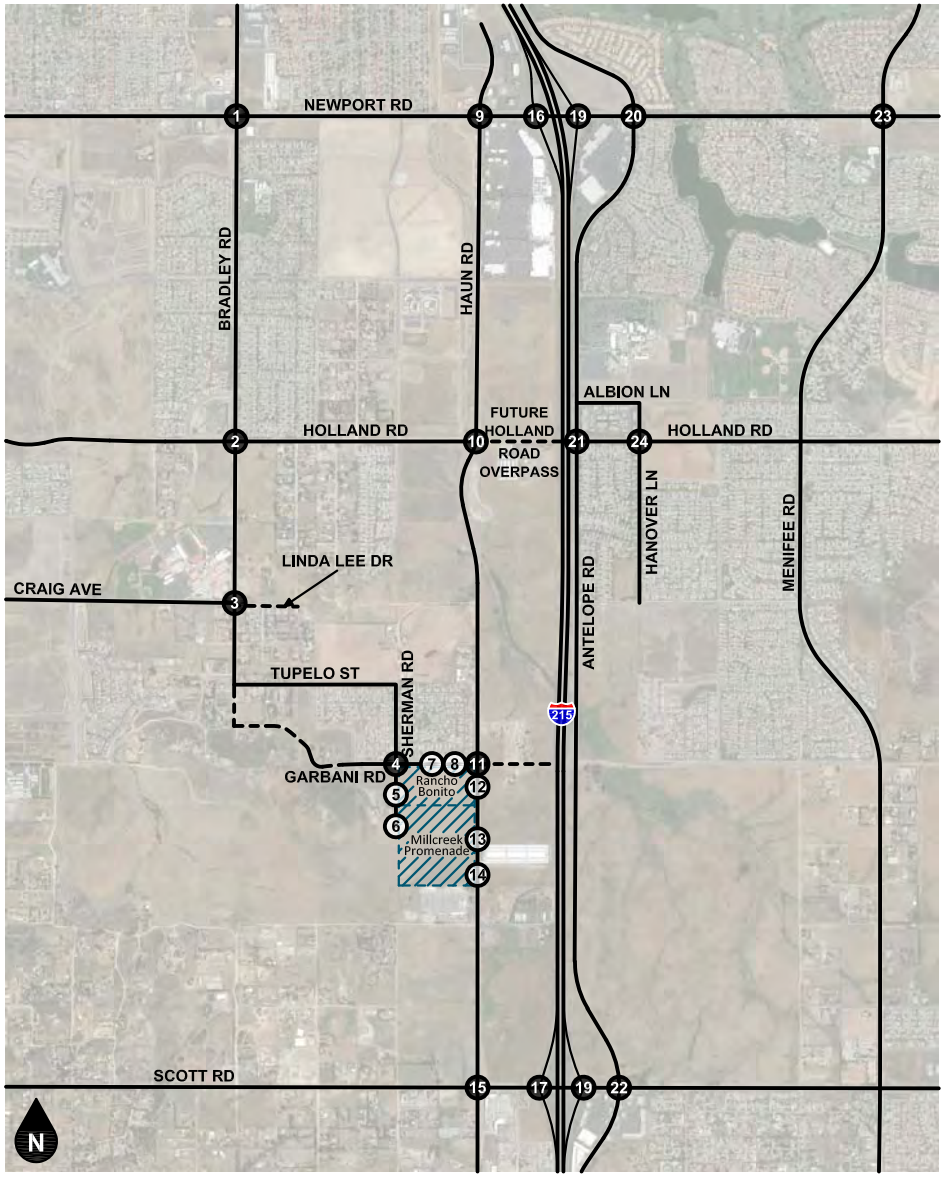


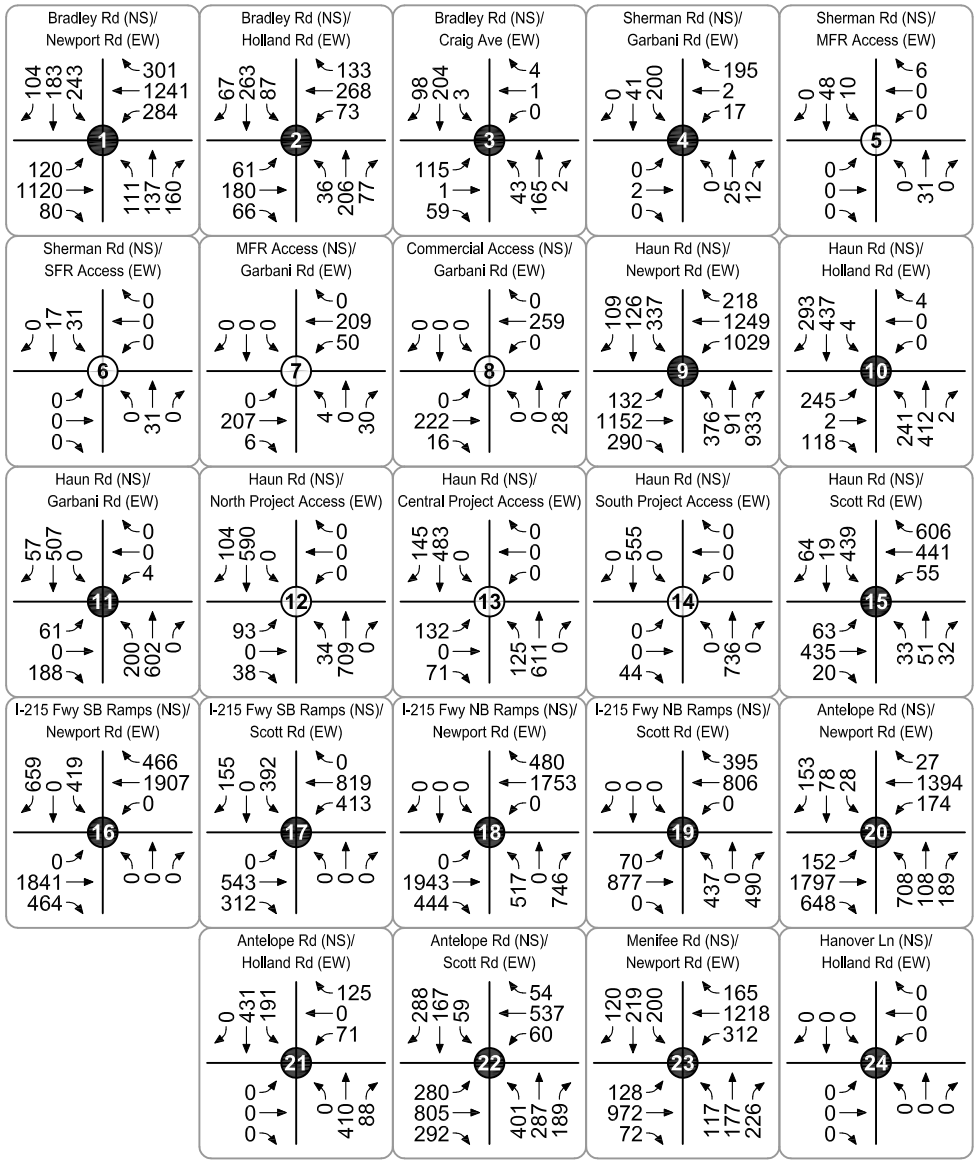
Legend

(#) Study Intersection

(#) Project Driveway

Figure 38
Existing Plus Project
AM Peak Hour Intersection Turning Movement Volumes



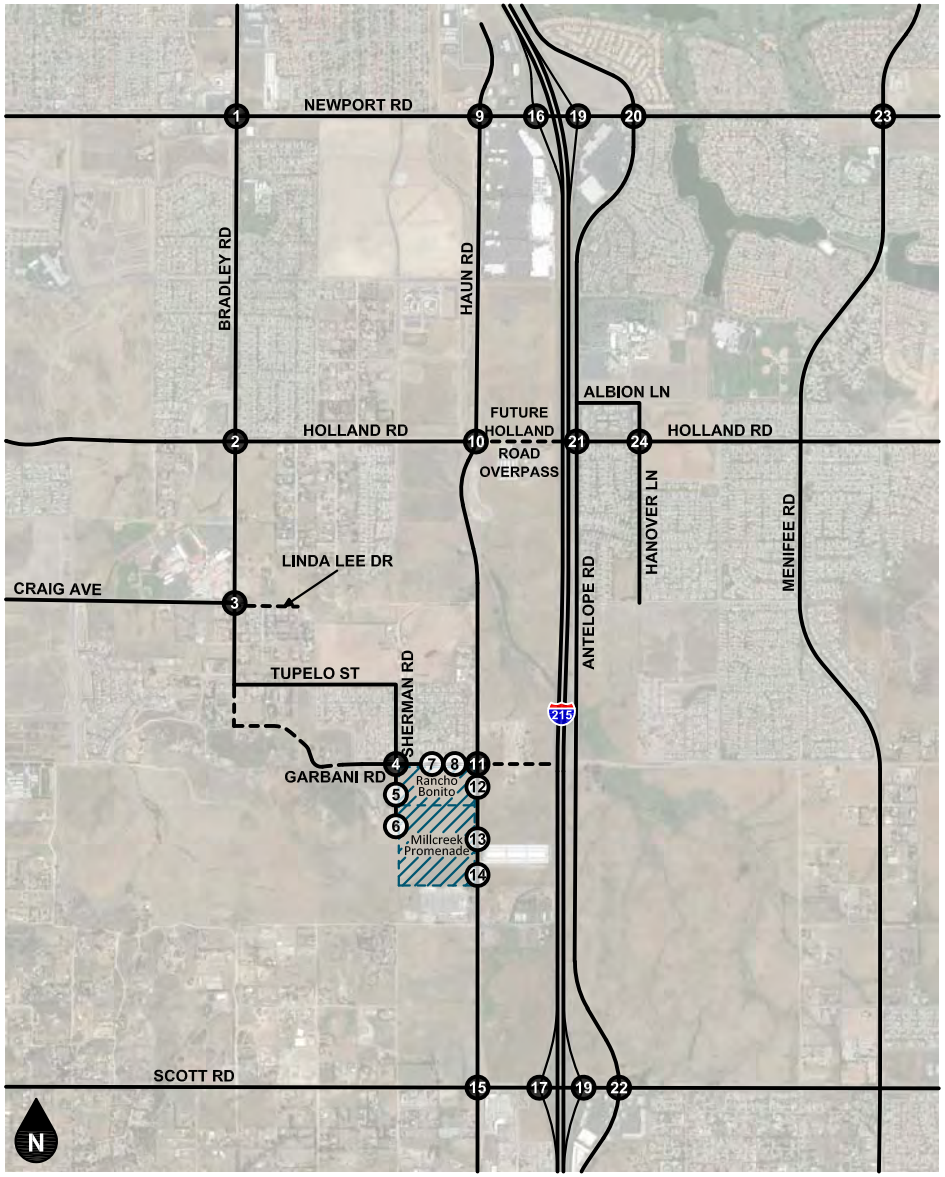


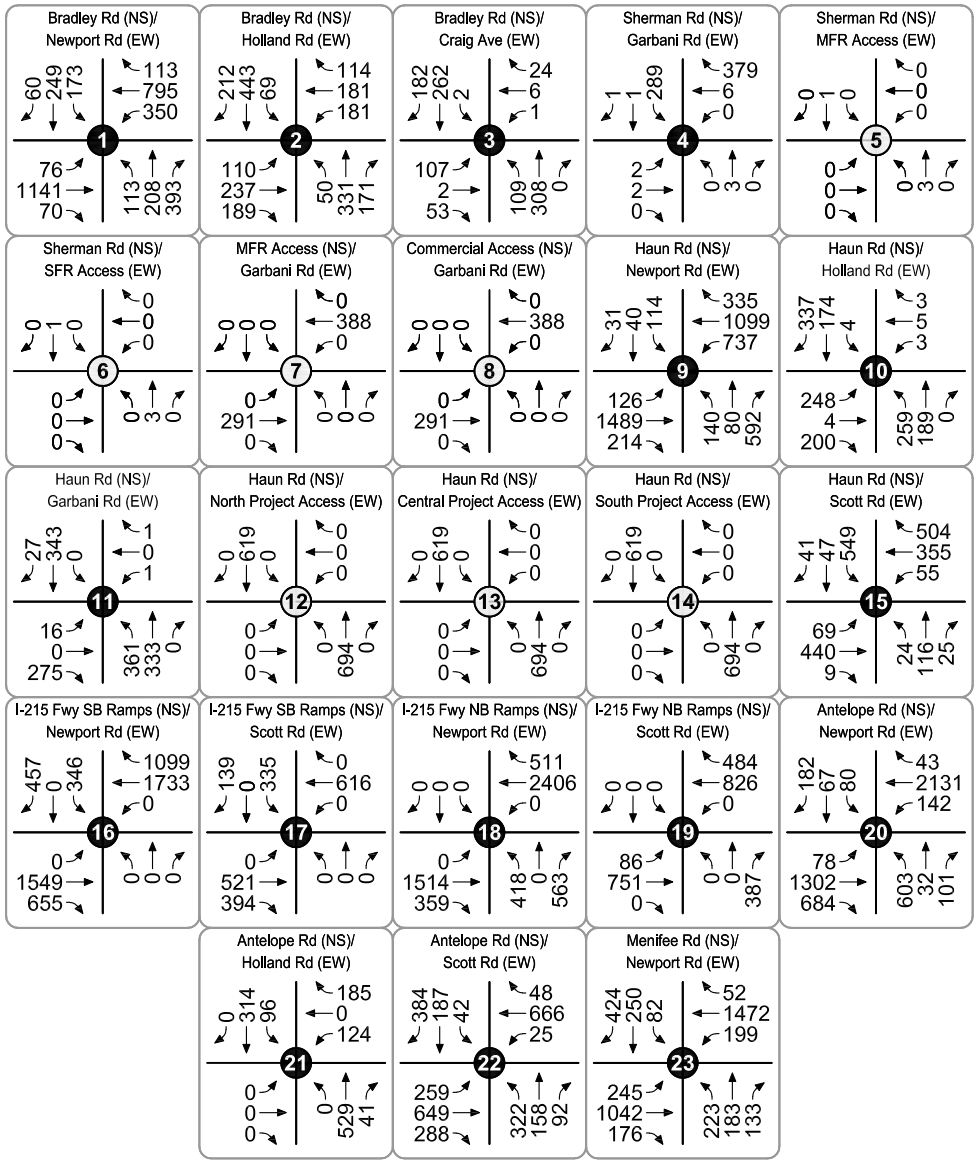
Legend

(#) Study Intersection

(#) Project Driveway

Figure 39
Existing Plus Project
PM Peak Hour Intersection Turning Movement Volumes



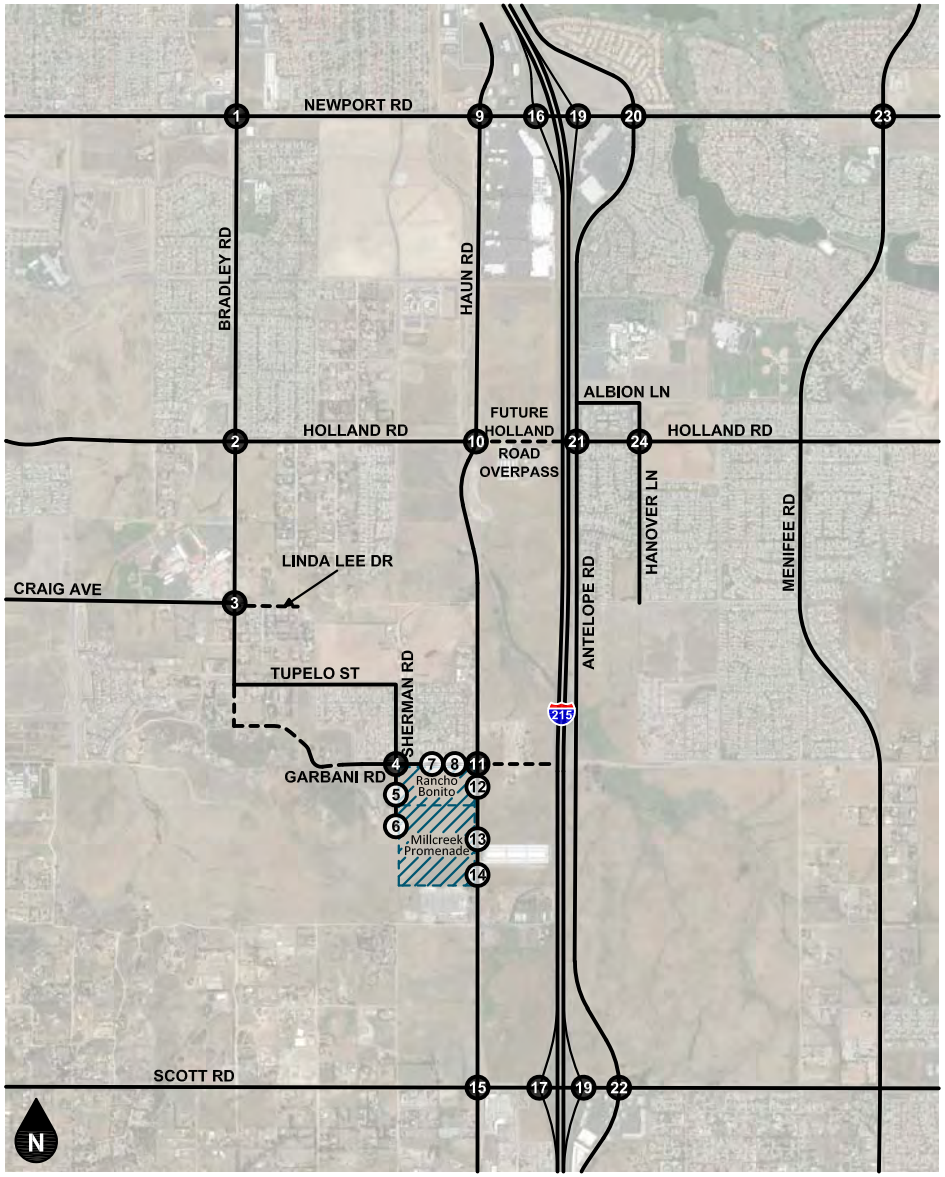


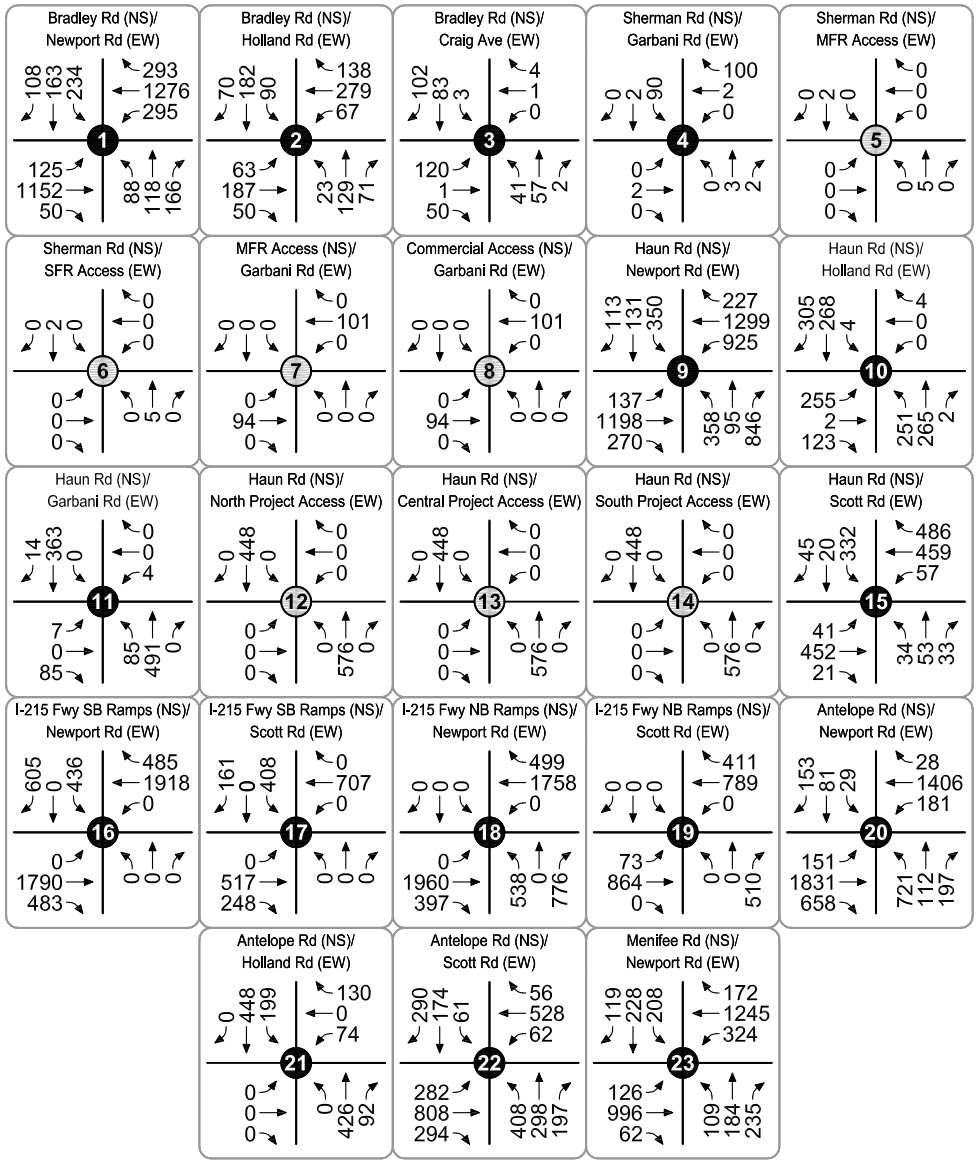
Legend

(#) Study Intersection

(#) Project Driveway

Figure 40
Existing Plus Ambient Growth
AM Peak Hour Intersection Turning Movement Volumes



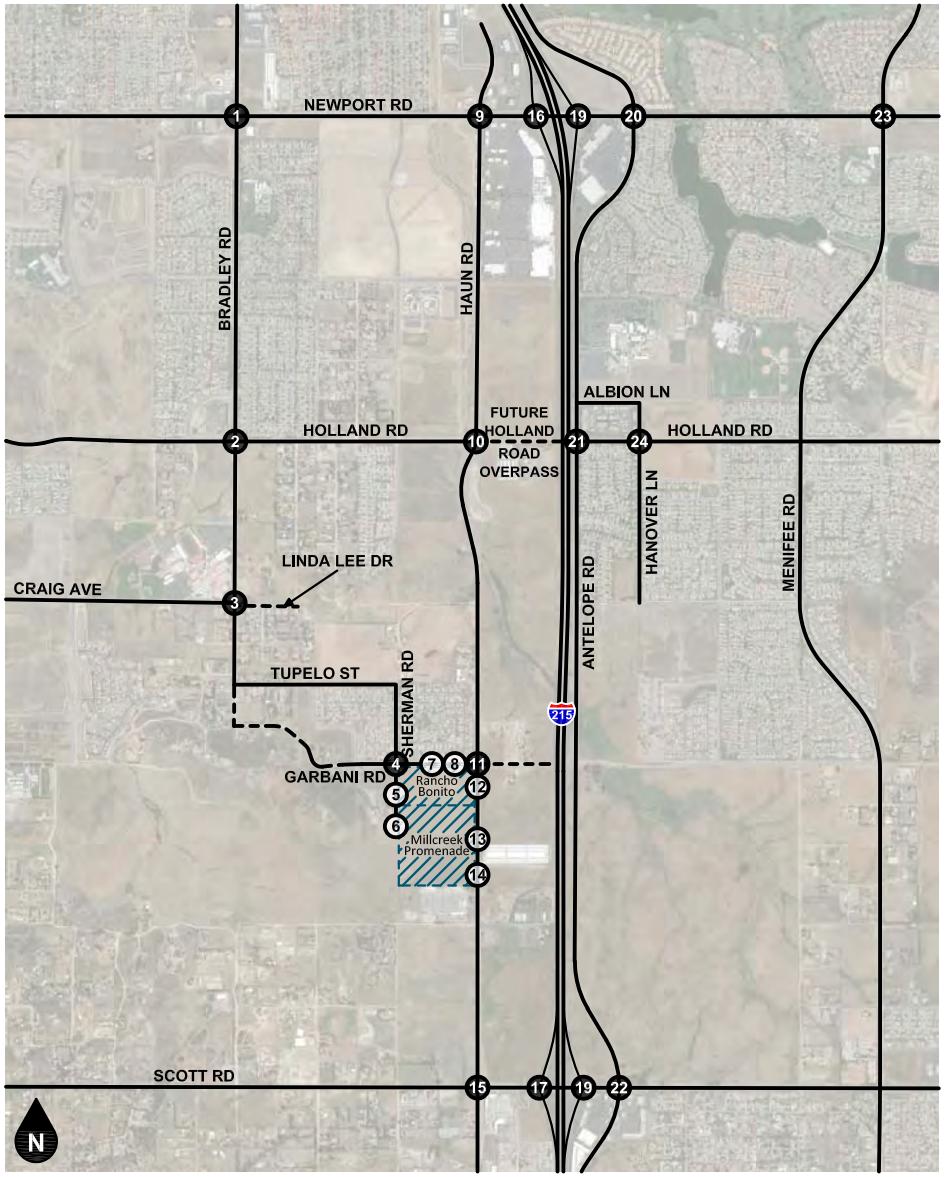


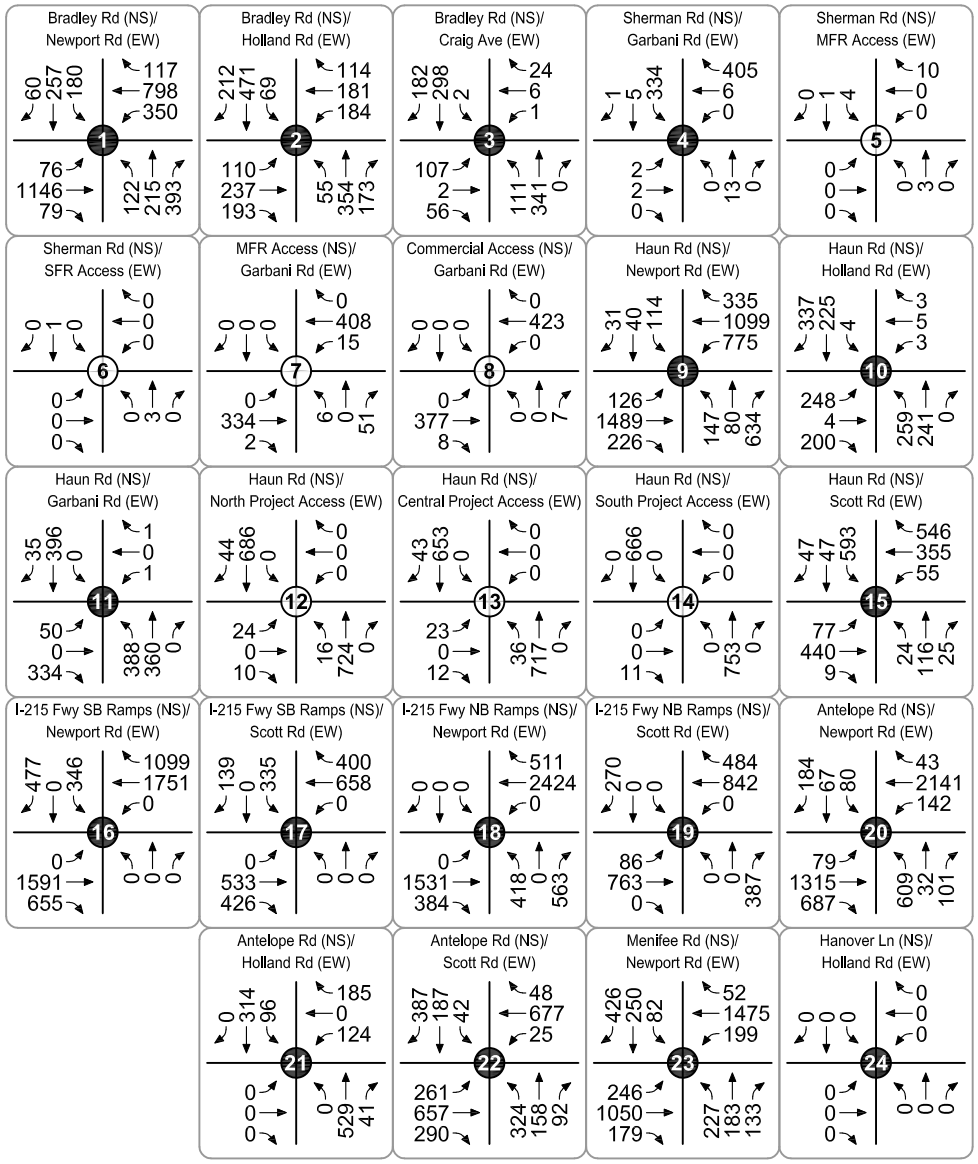
Legend

(#) Study Intersection

(#) Project Driveway

Figure 41
Existing Plus Ambient Growth
PM Peak Hour Intersection Turning Movement Volumes



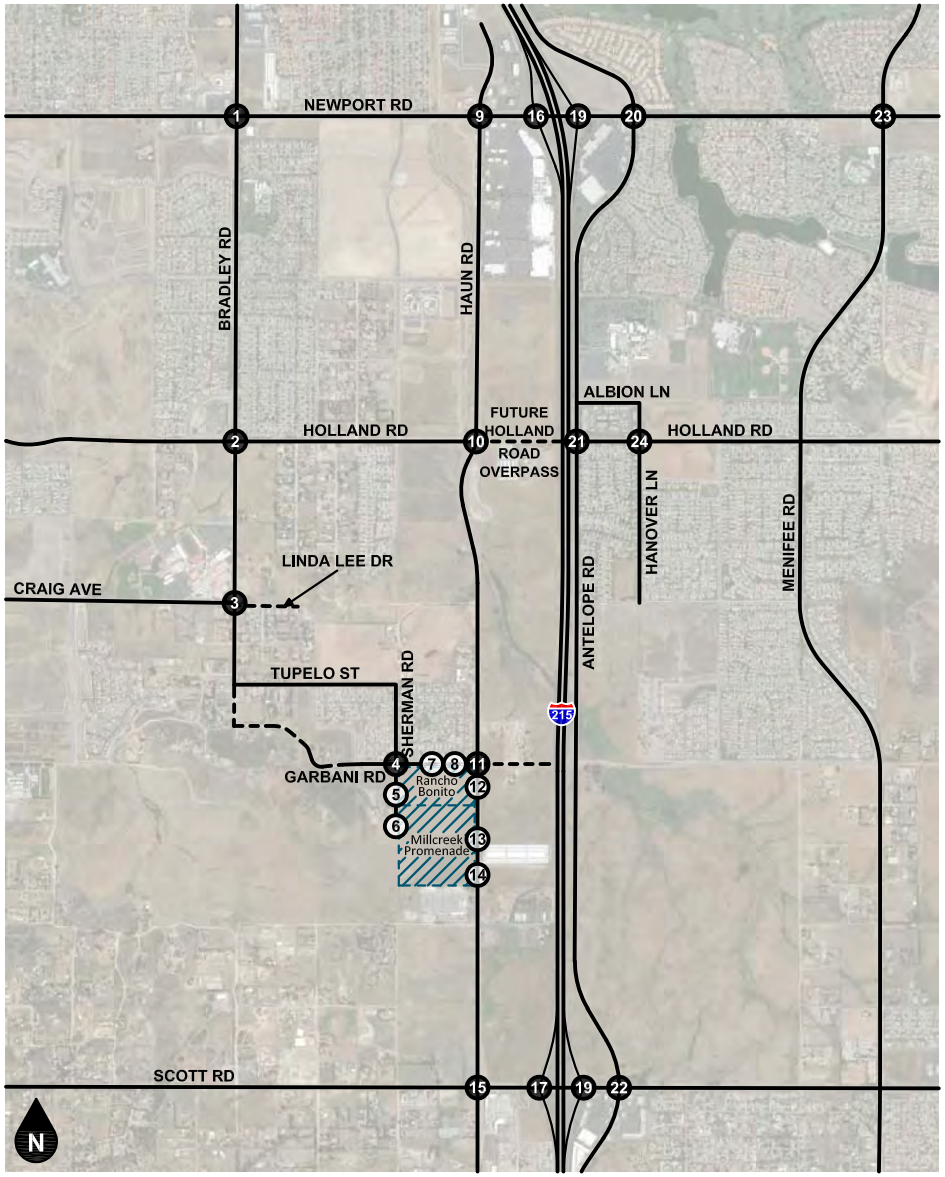


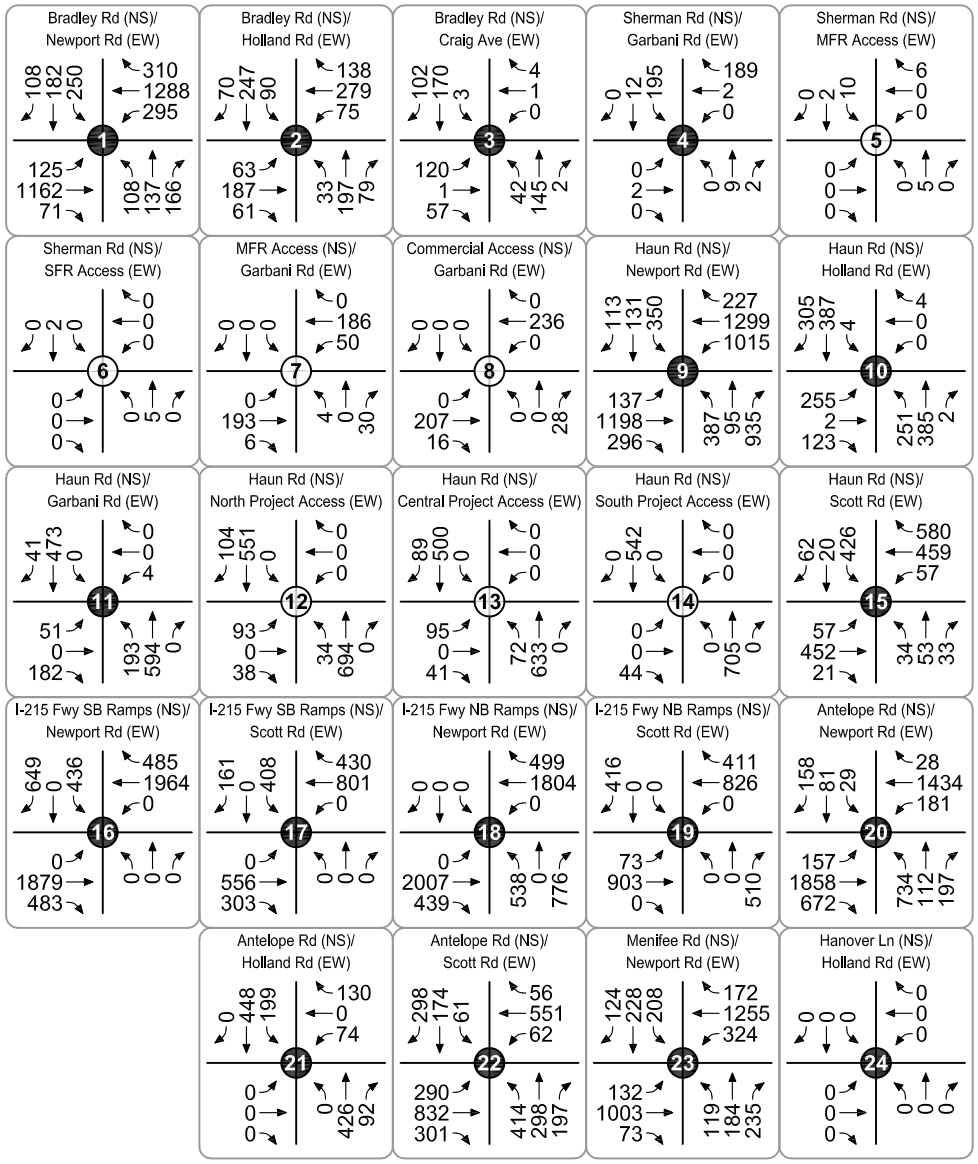
Legend

(#) Study Intersection

(#) Project Driveway

Figure 42
Existing Plus Ambient Growth Plus Project
AM Peak Hour Intersection Turning Movement Volumes



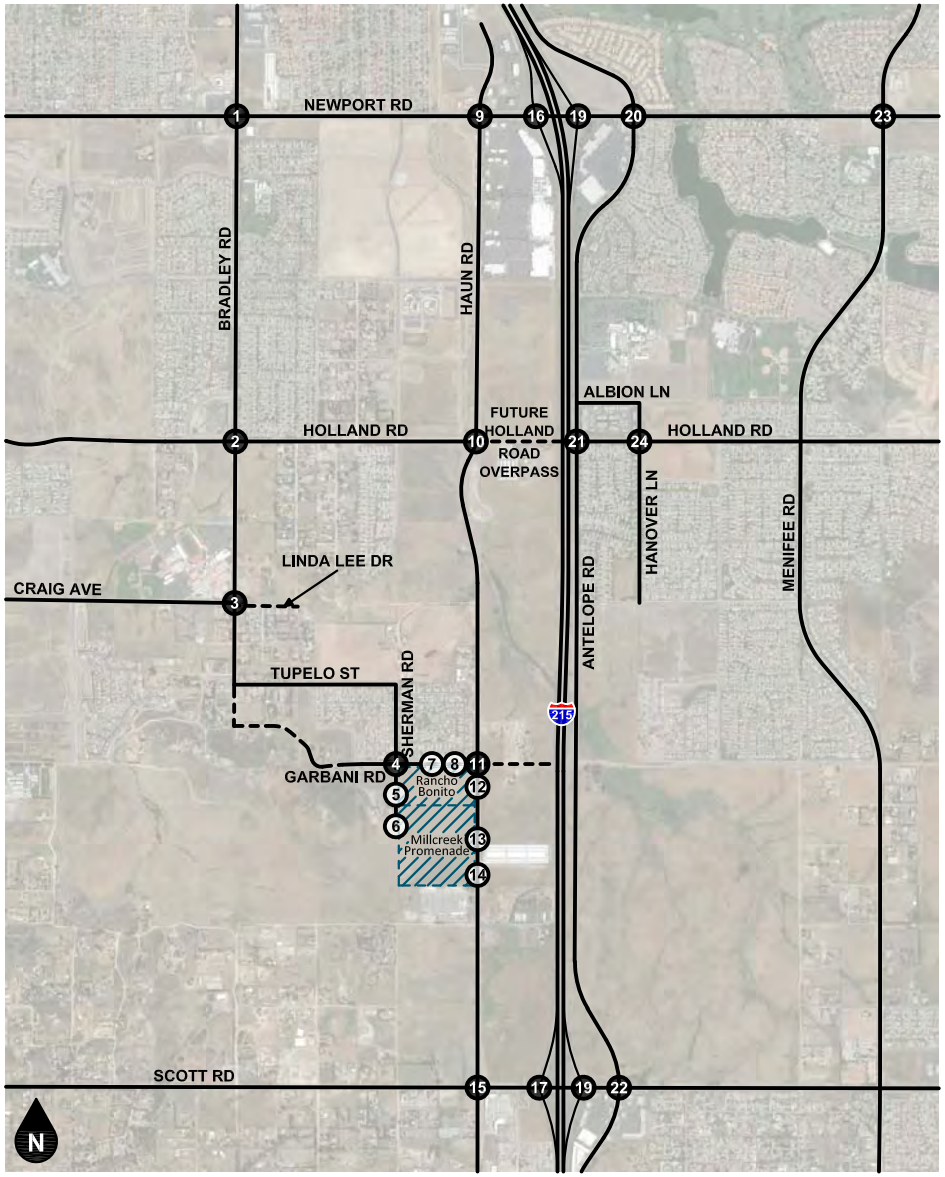


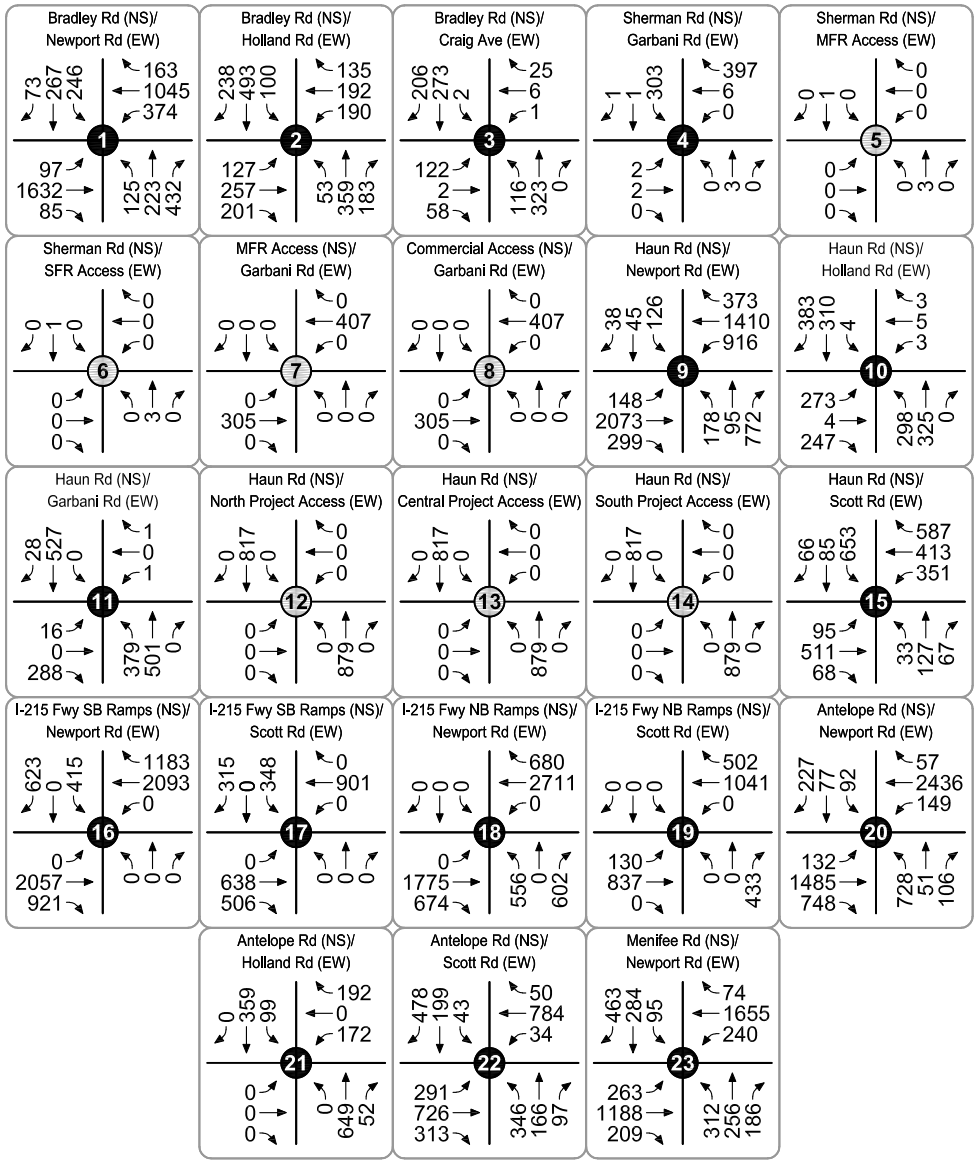
Legend

(#) Study Intersection

(#) Project Driveway

Figure 43
Existing Plus Ambient Growth Plus Project
PM Peak Hour Intersection Turning Movement Volumes





Legend

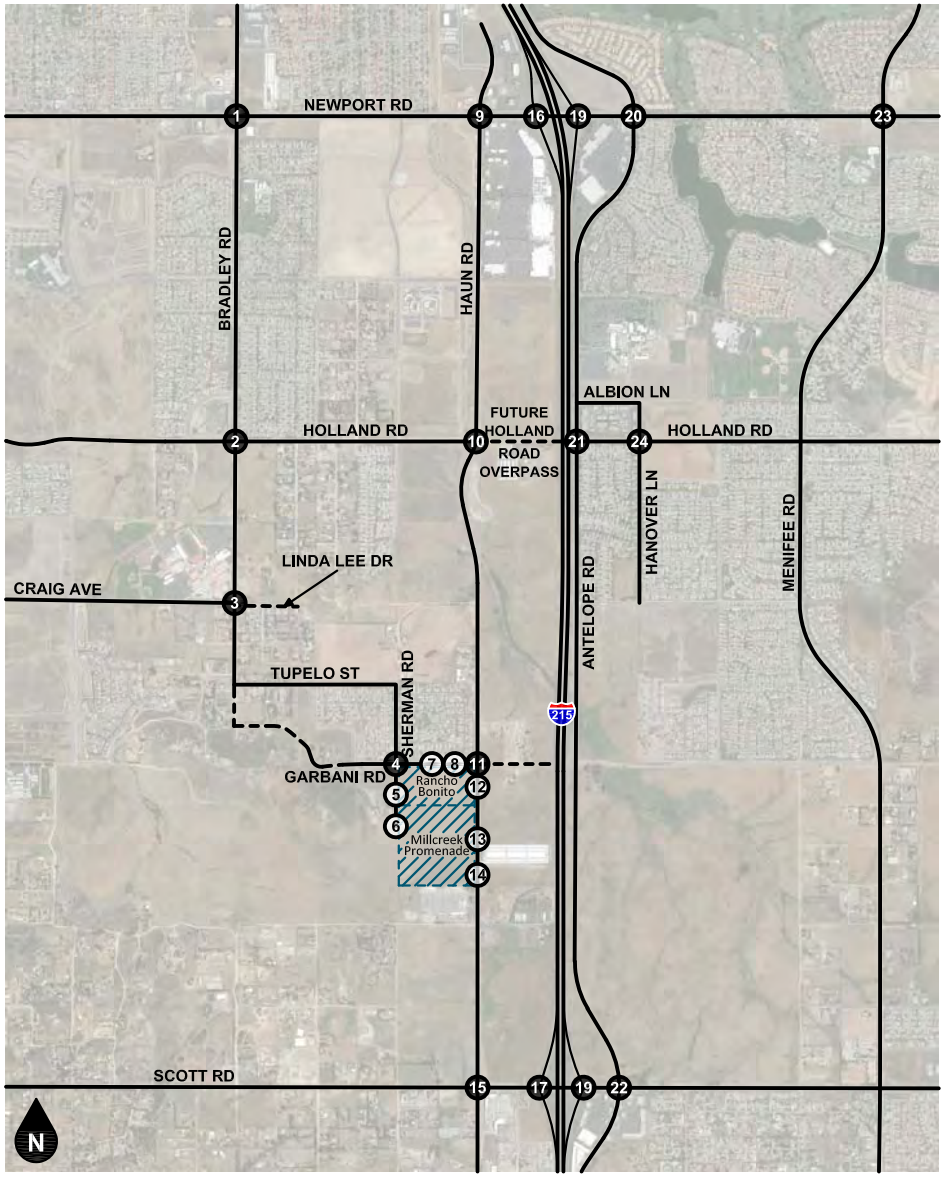
(#) Study Intersection

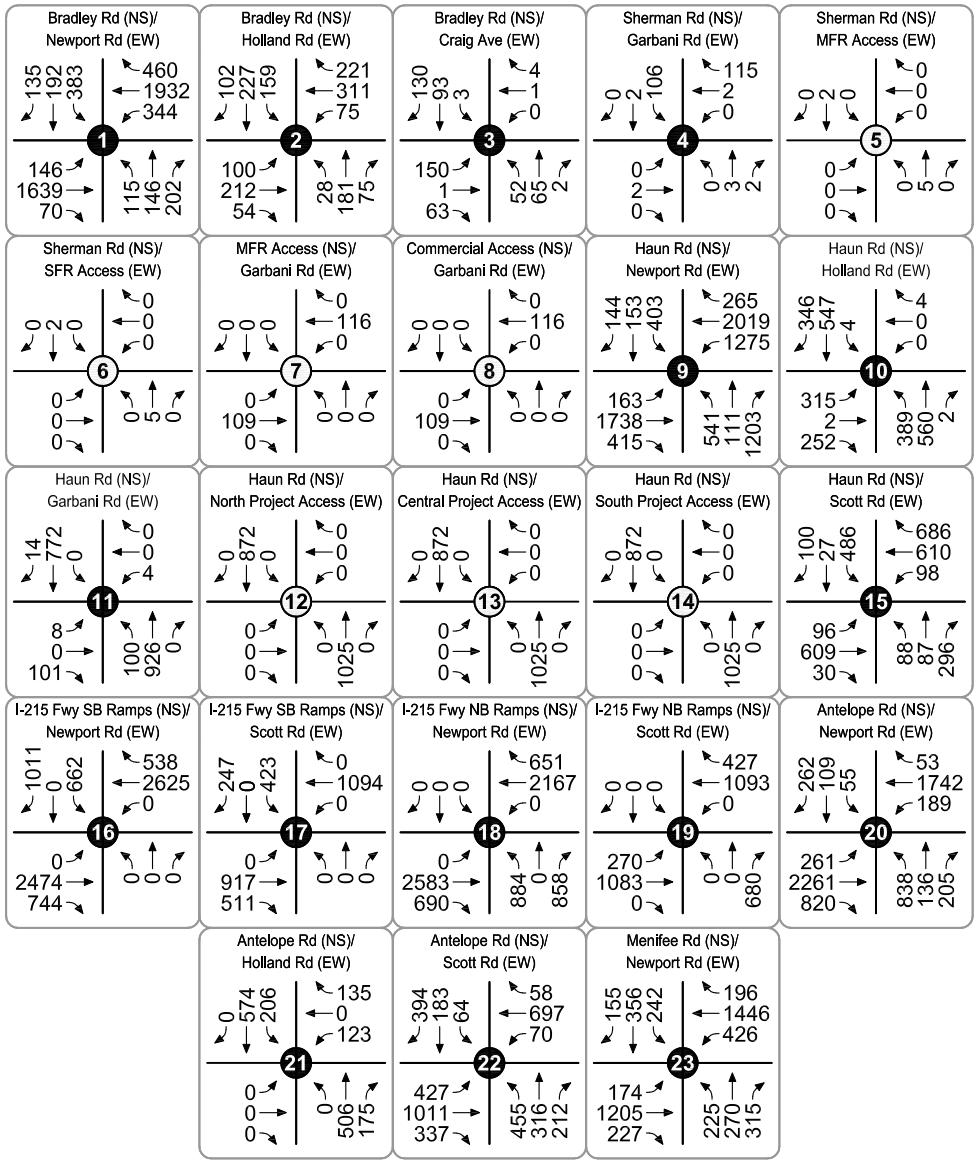
(#) Project Driveway

Figure 44

Existing Plus Ambient Growth Plus Cumulative

AM Peak Hour Intersection Turning Movement Volumes - Without Holland Road Overpass





Legend

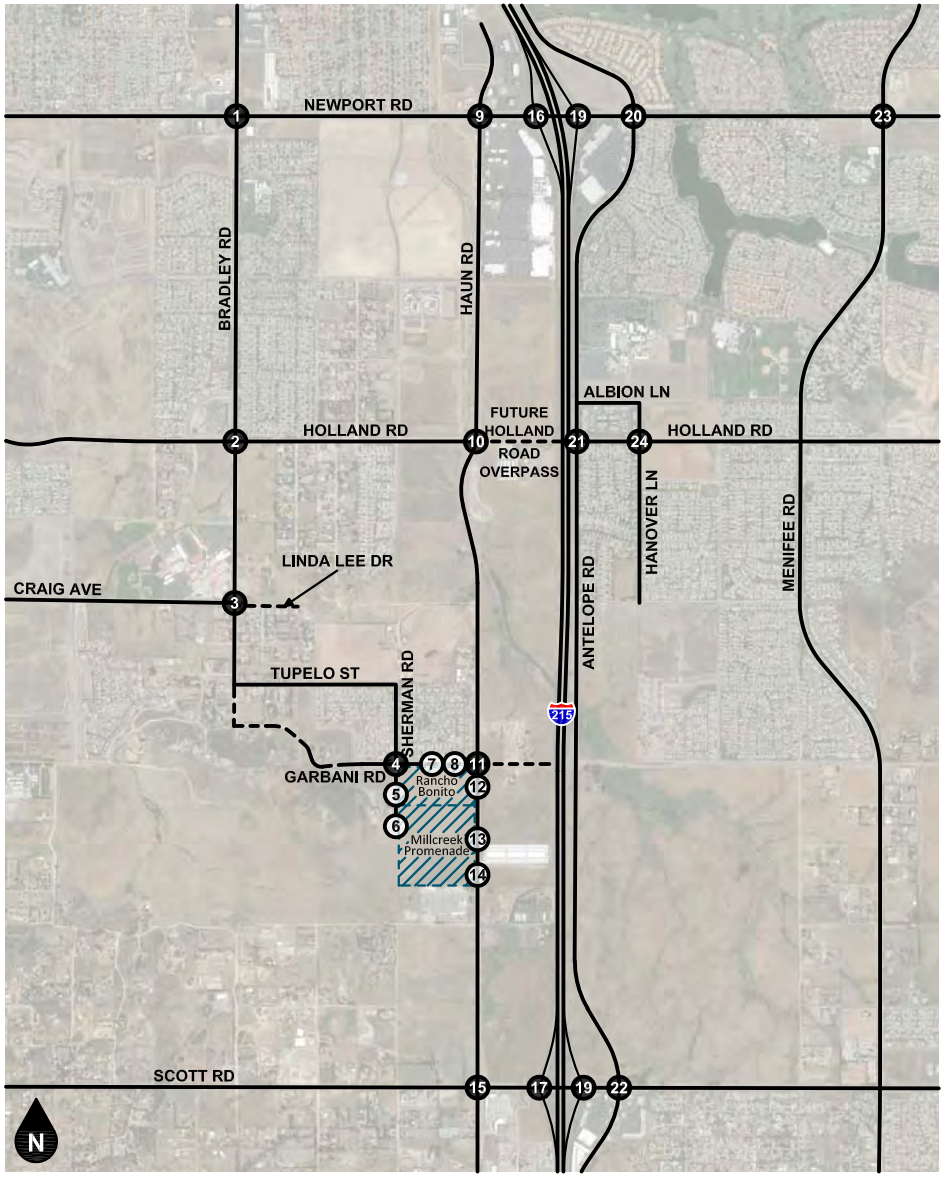
(#) Study Intersection

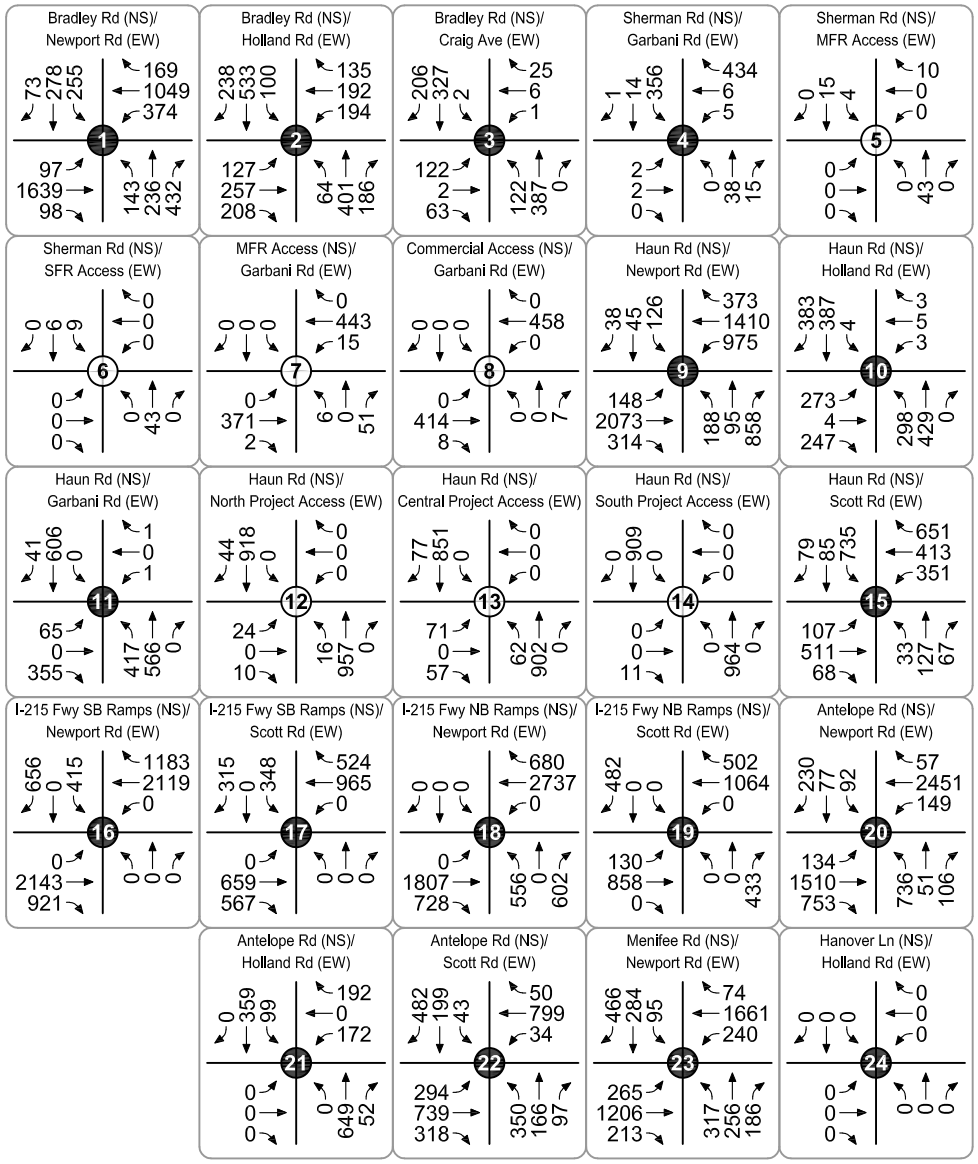
(#) Project Driveway

Figure 45

Existing Plus Ambient Growth Plus Cumulative

PM Peak Hour Intersection Turning Movement Volumes - Without Holland Road Overpass





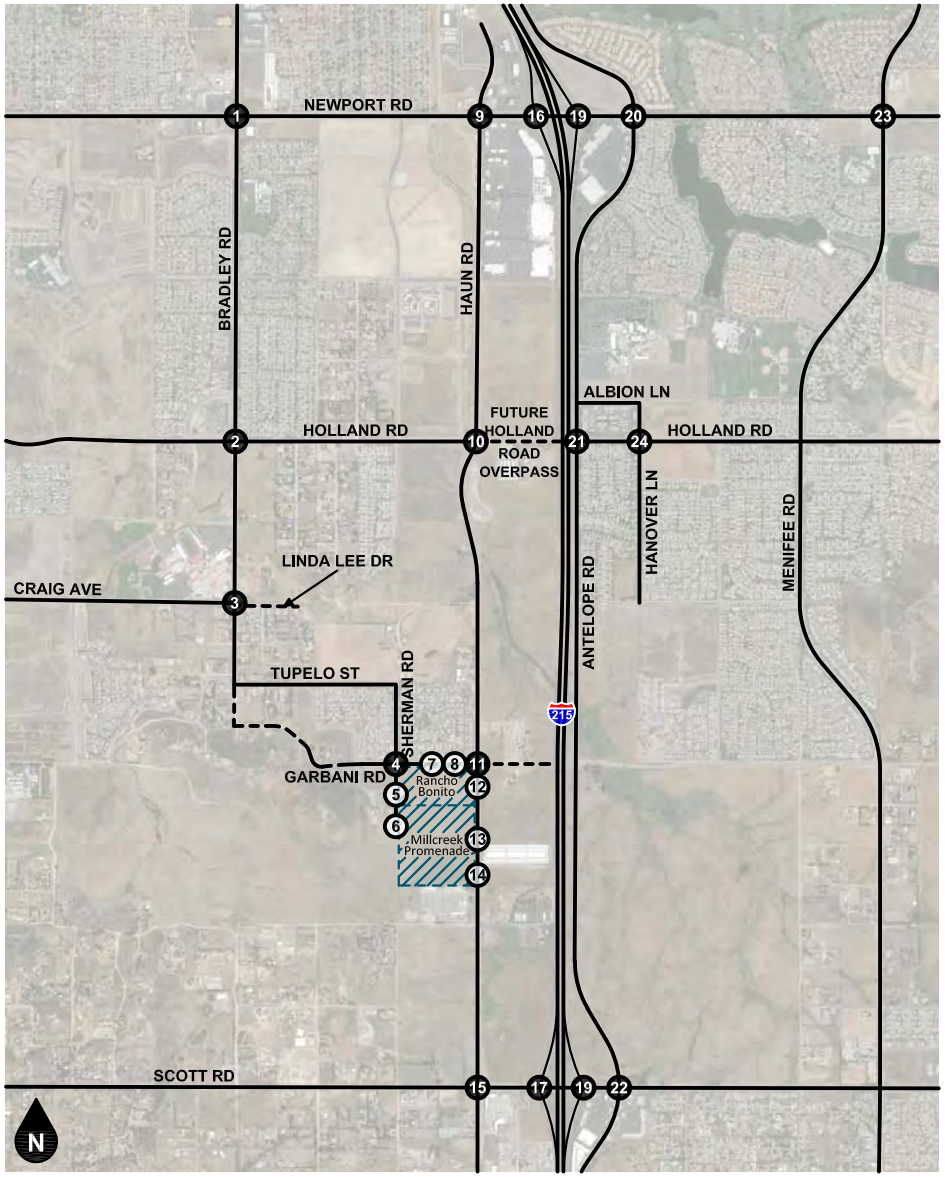
Legend

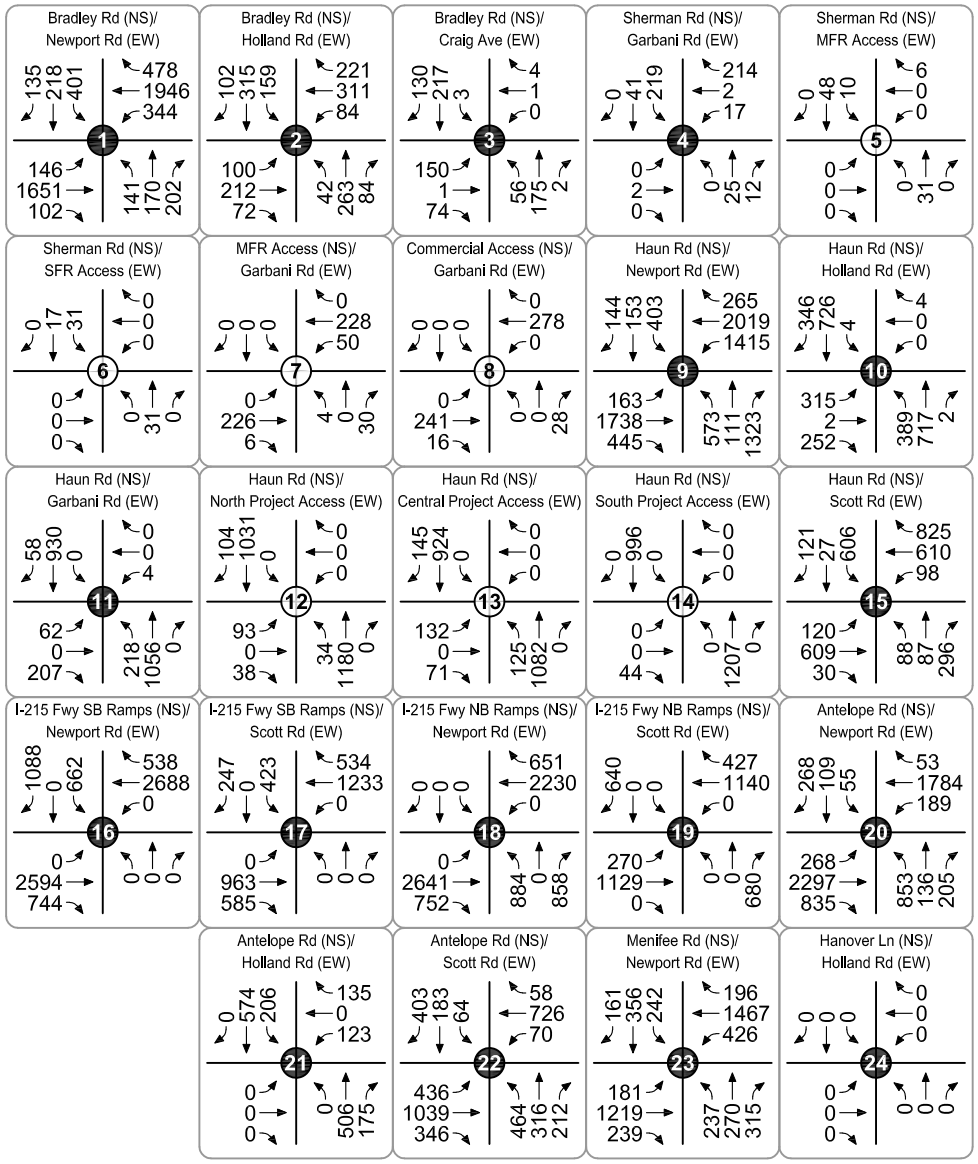
(#) Study Intersection

(#) Project Driveway

Figure 46

Existing Plus Ambient Growth Plus Project Plus Cumulative AM Peak Hour Intersection Turning Movement Volumes - Without Holland Road Overpass





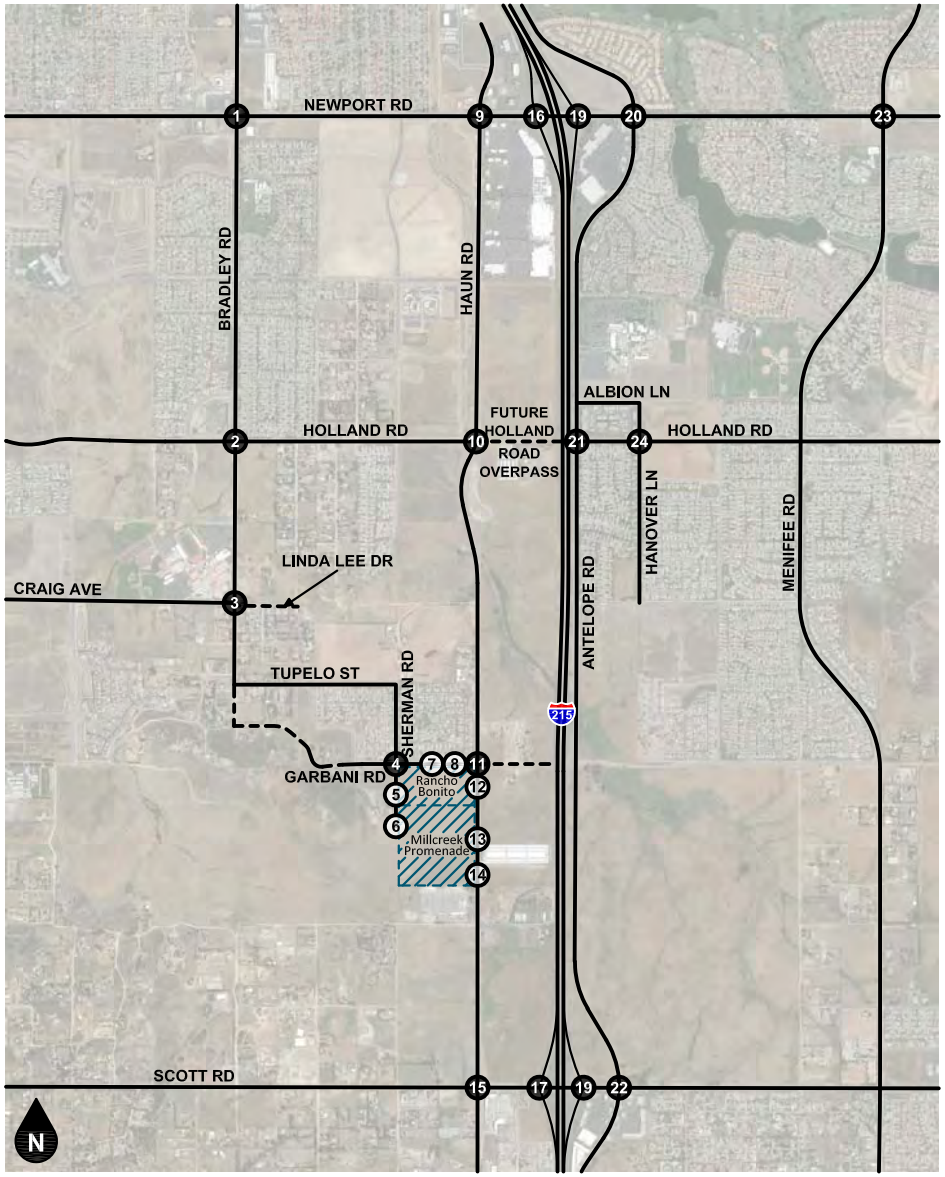
Legend

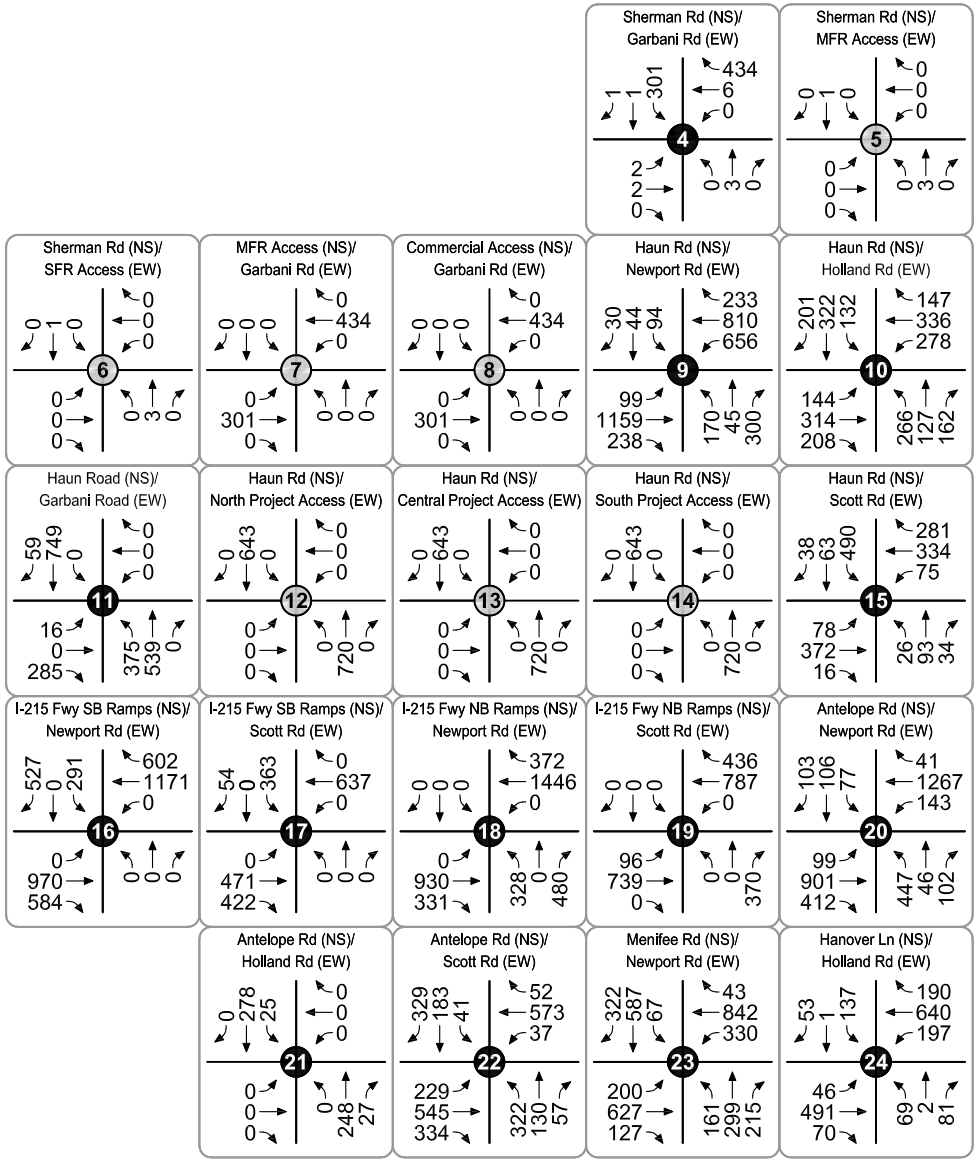
(#) Study Intersection

(#) Project Driveway

Figure 47

Existing Plus Ambient Growth Plus Project Plus Cumulative PM Peak Hour Intersection Turning Movement Volumes - Without Holland Road Overpass



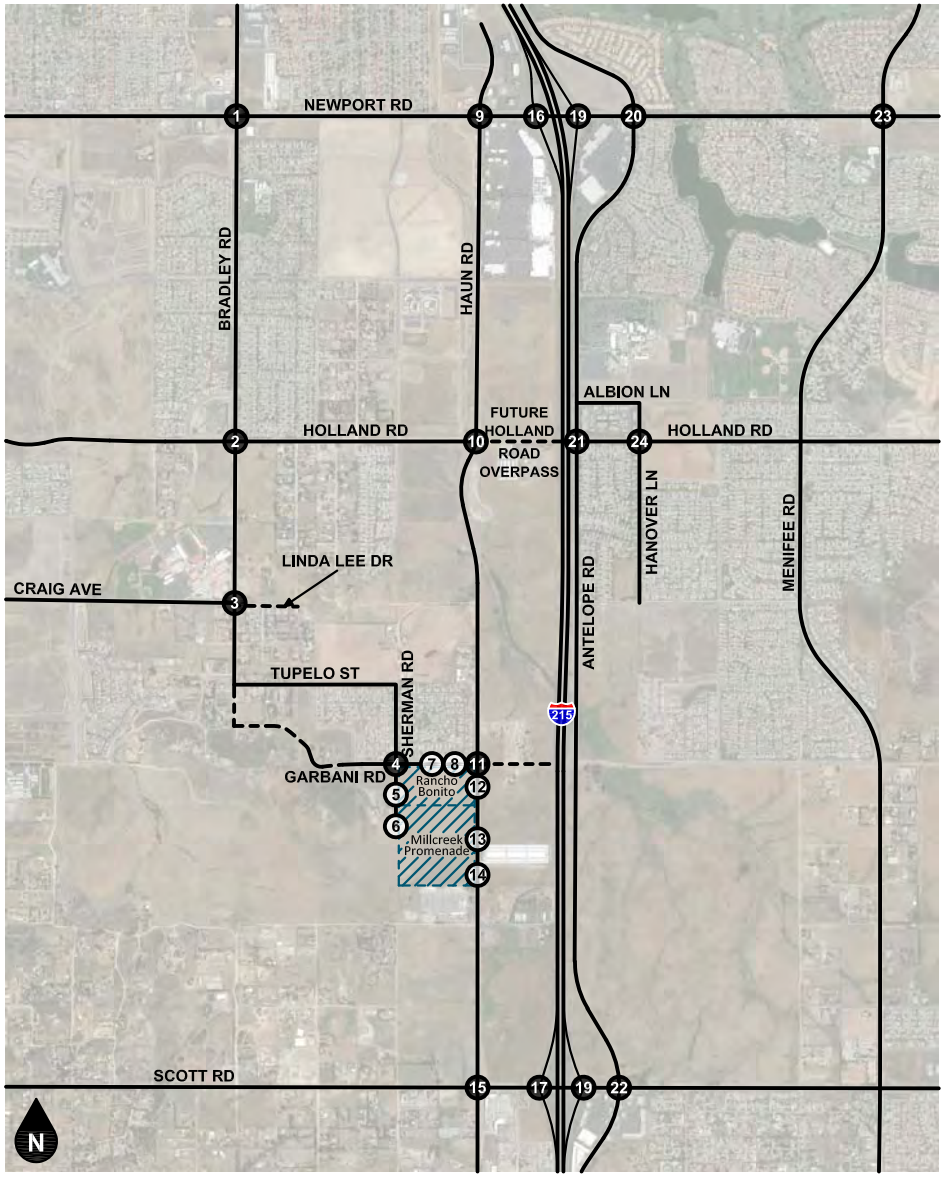


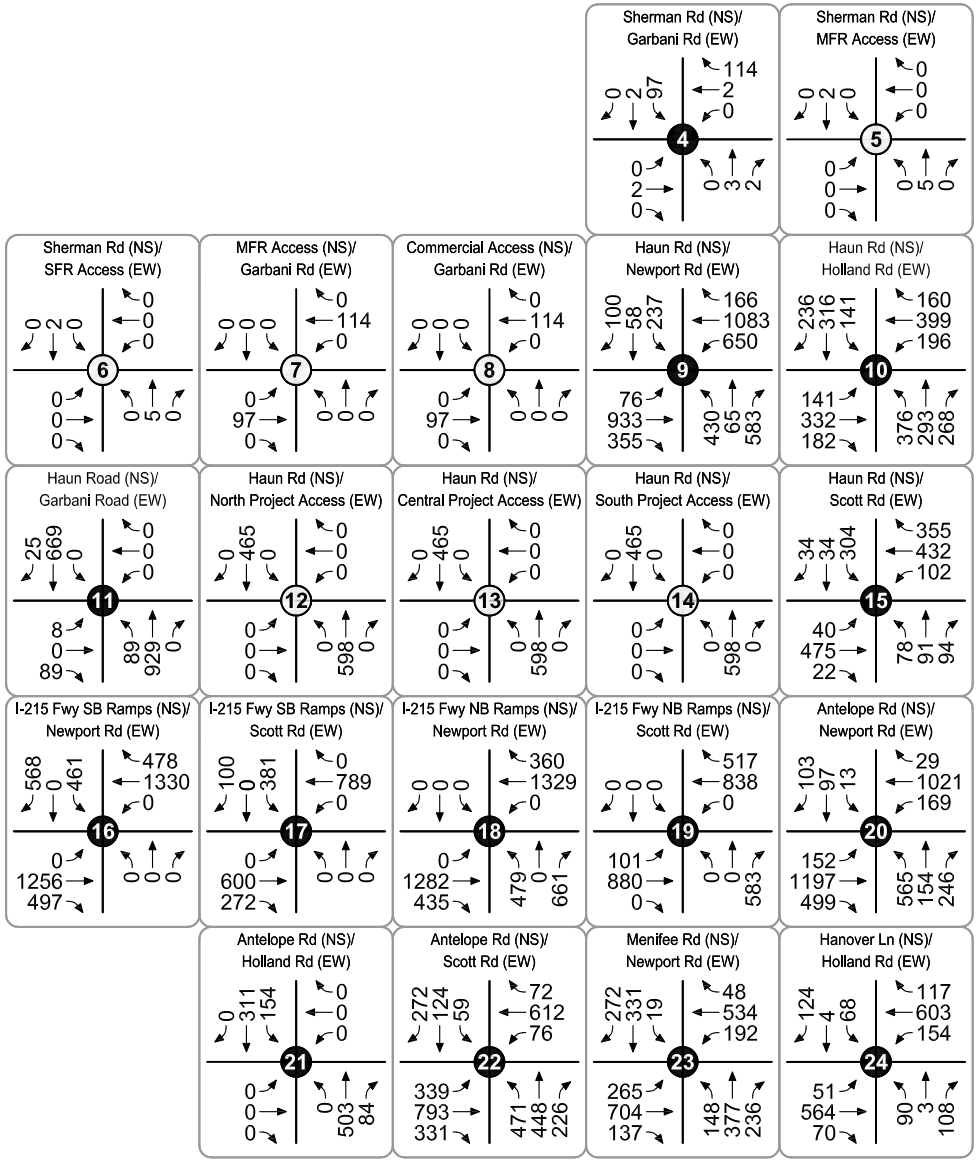
Legend

(#) Study Intersection

(#) Project Driveway

Figure 48
Existing Plus Ambient Growth Plus Cumulative AM Peak Hour Intersection Turning Movement Volumes - With Holland Road Overpass



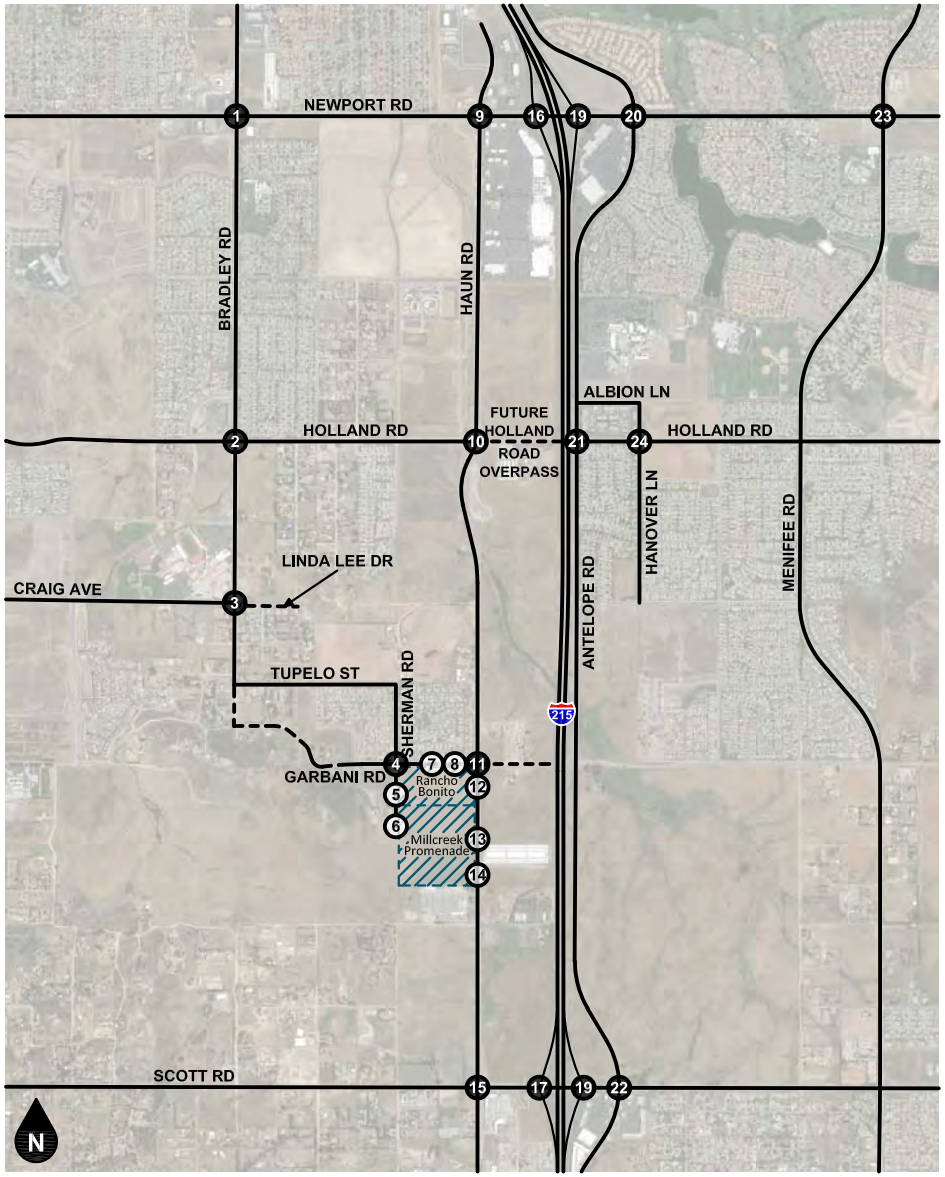


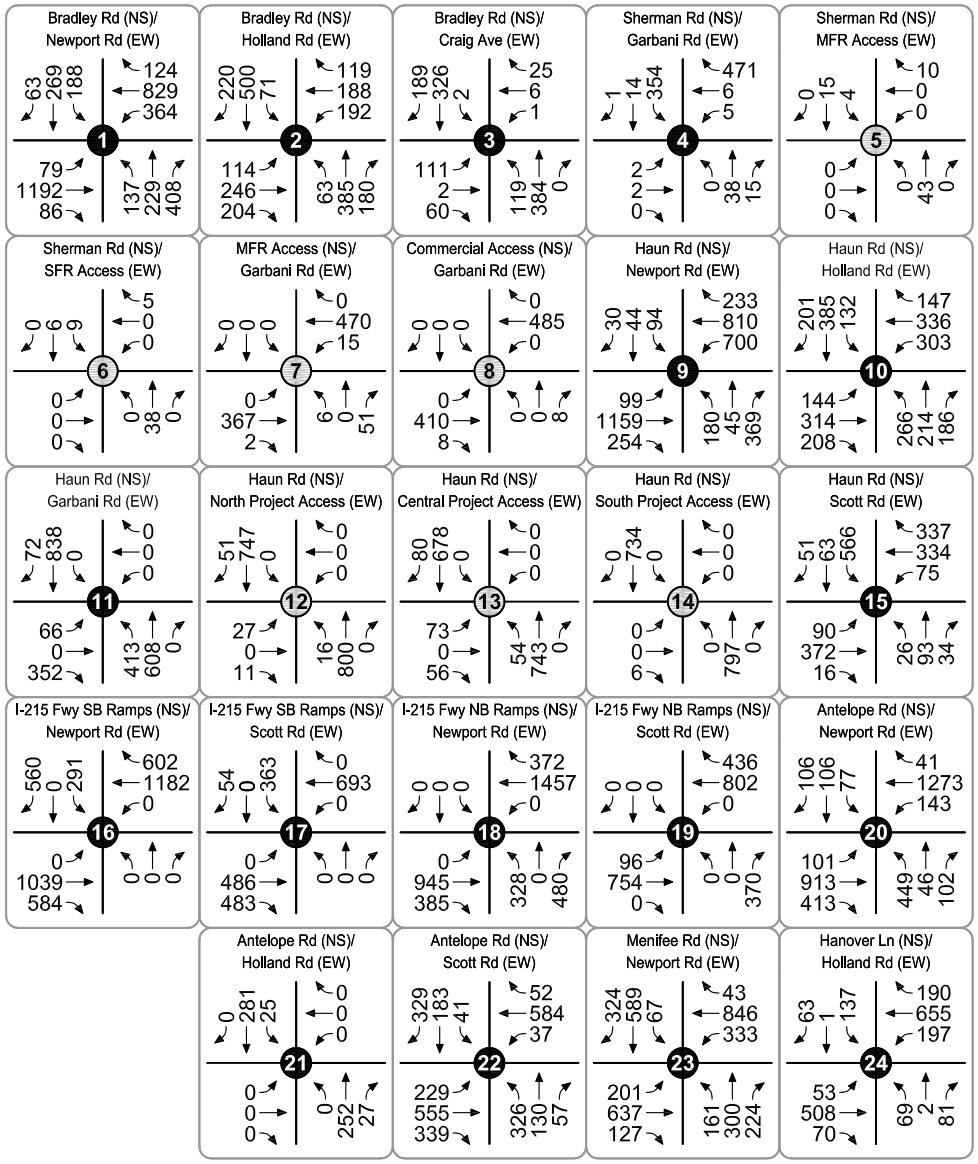
Legend

(#) Study Intersection

(#) Project Driveway

Figure 49
Existing Plus Ambient Growth Plus Cumulative PM Peak Hour Intersection Turning Movement Volumes - With Holland Road Overpass





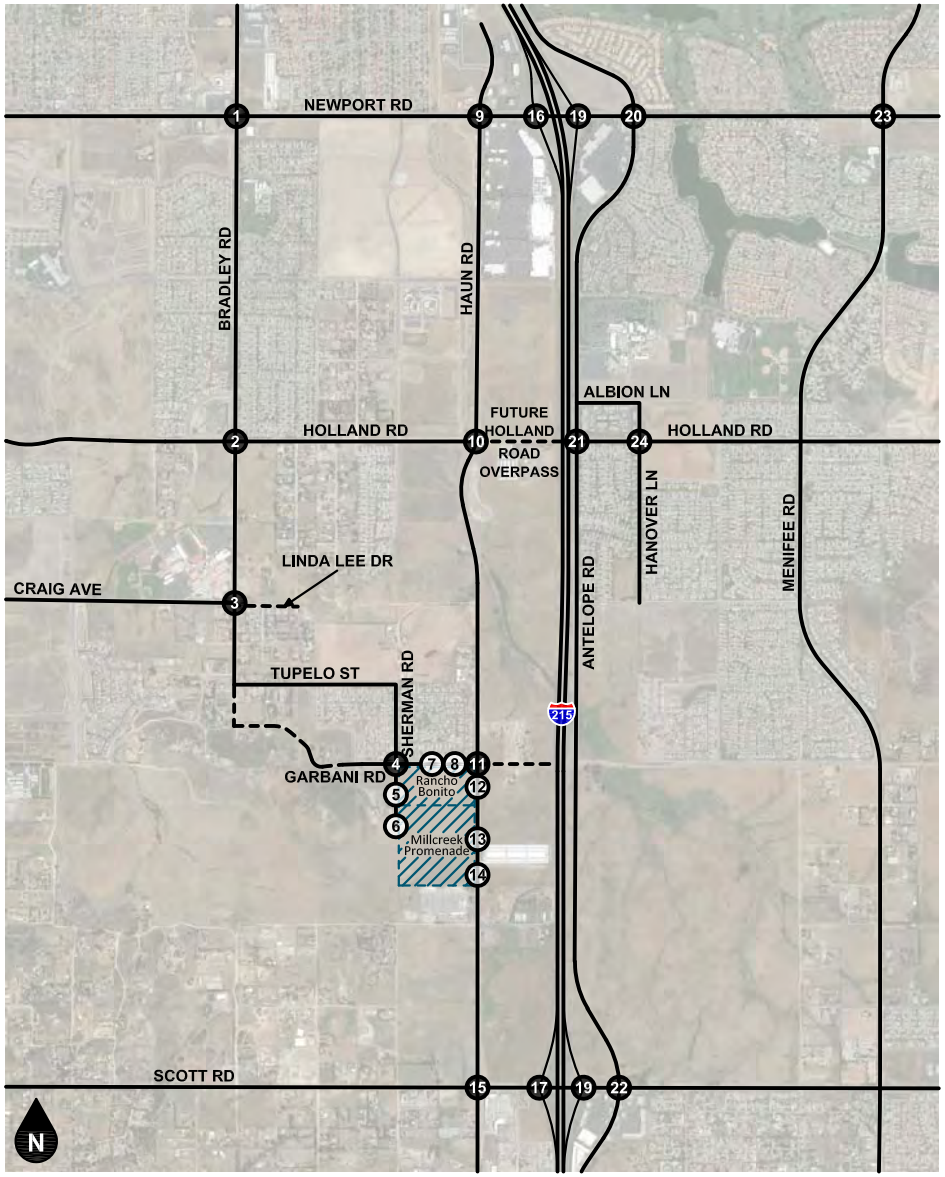
Legend

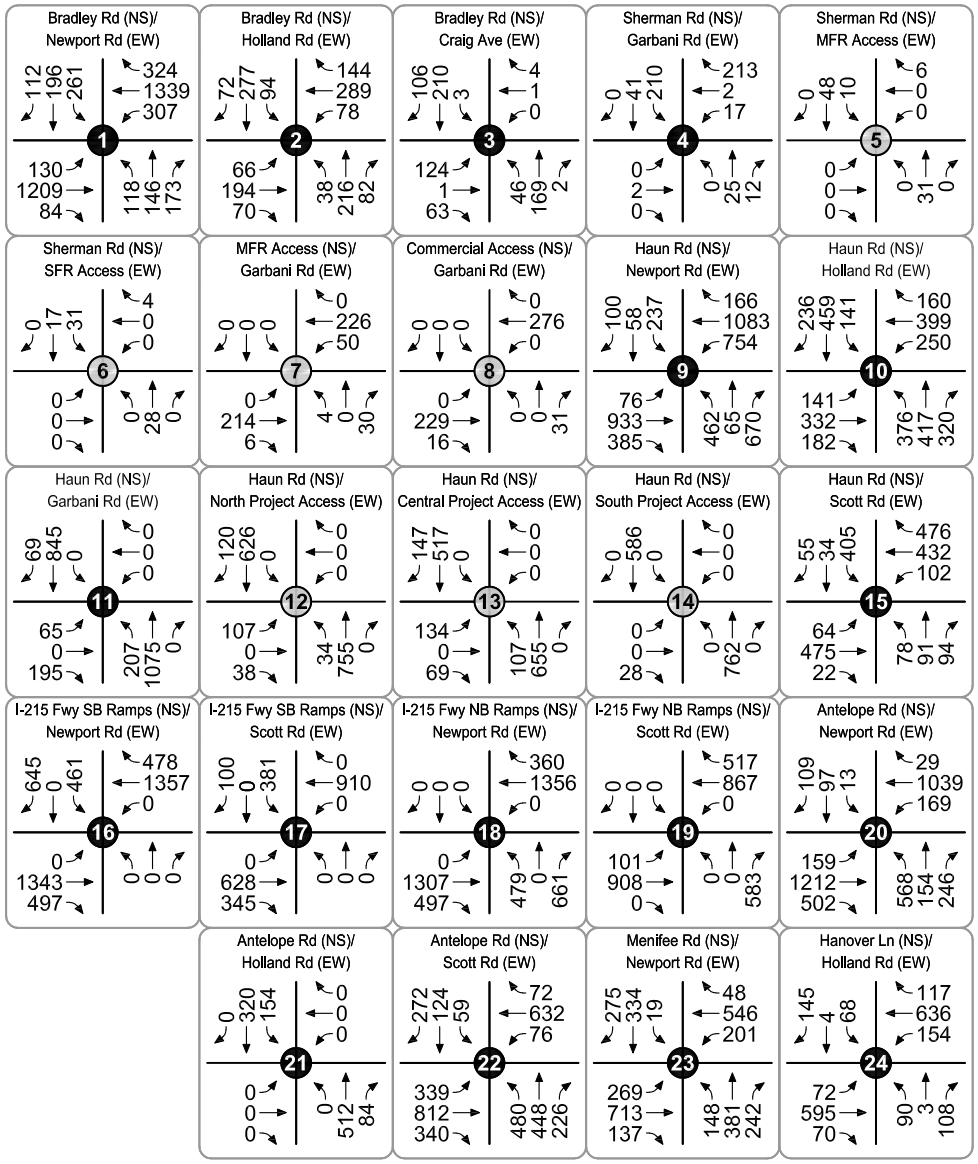
(#) Study Intersection

(#) Project Driveway

Figure 50

Existing Plus Ambient Growth Plus Project Plus Cumulative AM Peak Hour Intersection Turning Movement Volumes - With Holland Road Overpass





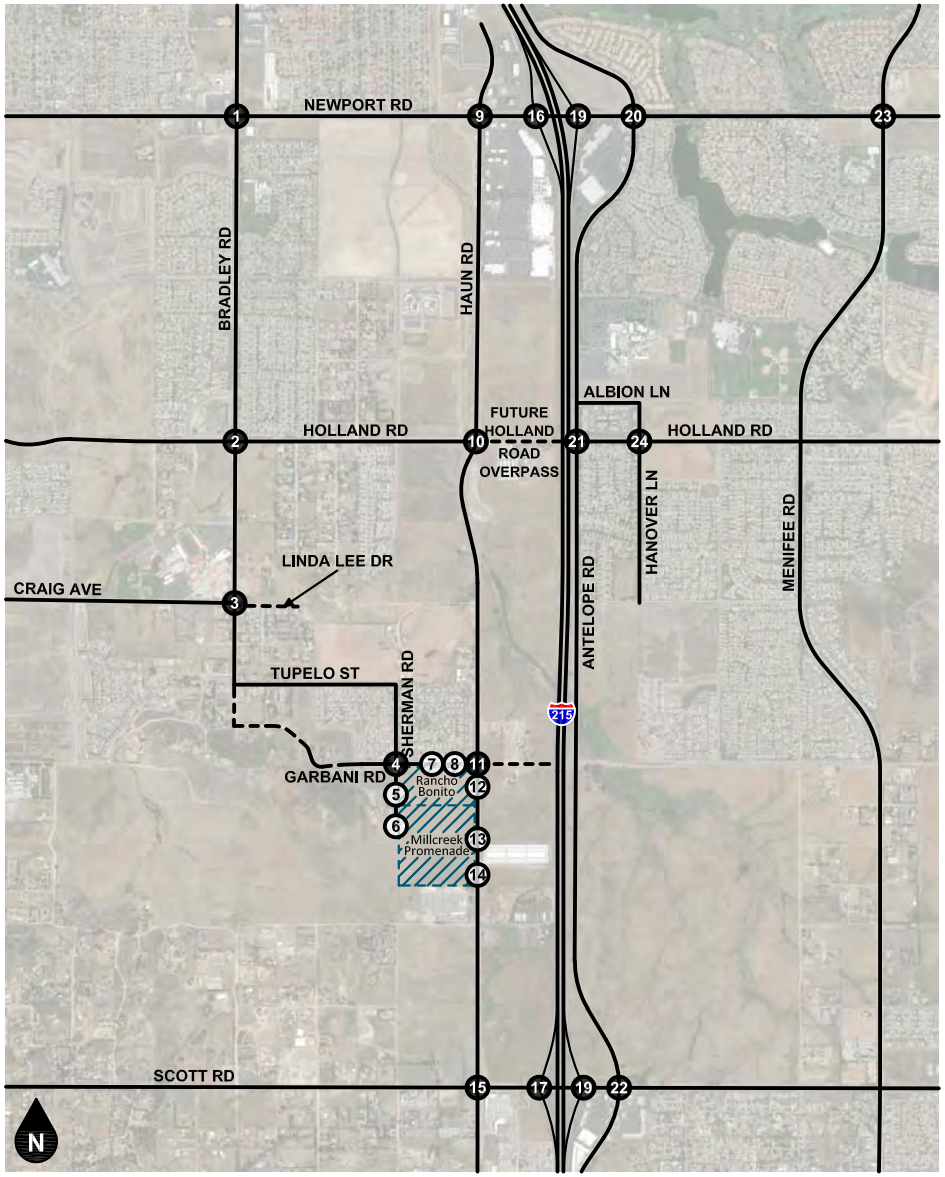
Legend

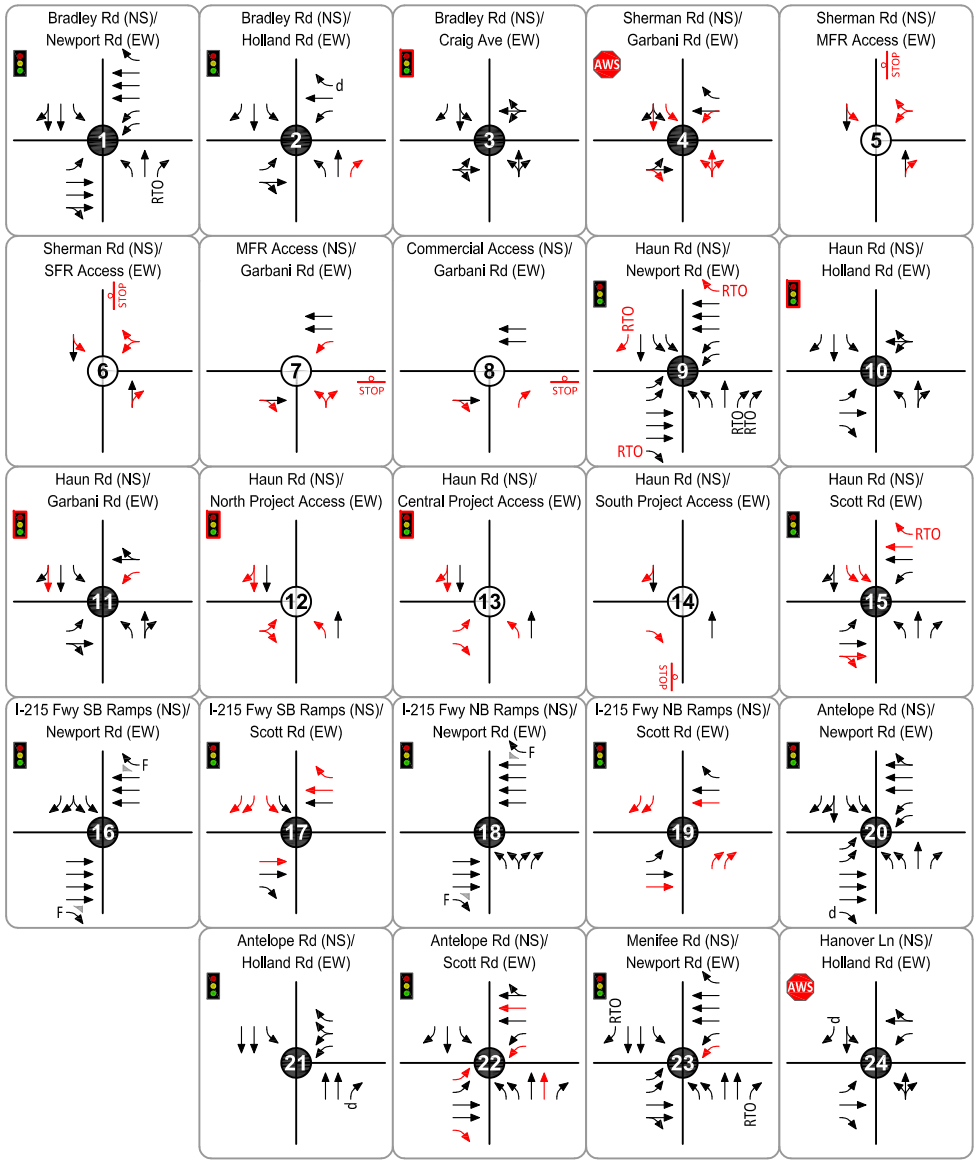
(#) Study Intersection

(#) Project Driveway

Figure 51

Existing Plus Ambient Growth Plus Project Plus Cumulative PM Peak Hour Intersection Turning Movement Volumes - With Holland Road Overpass

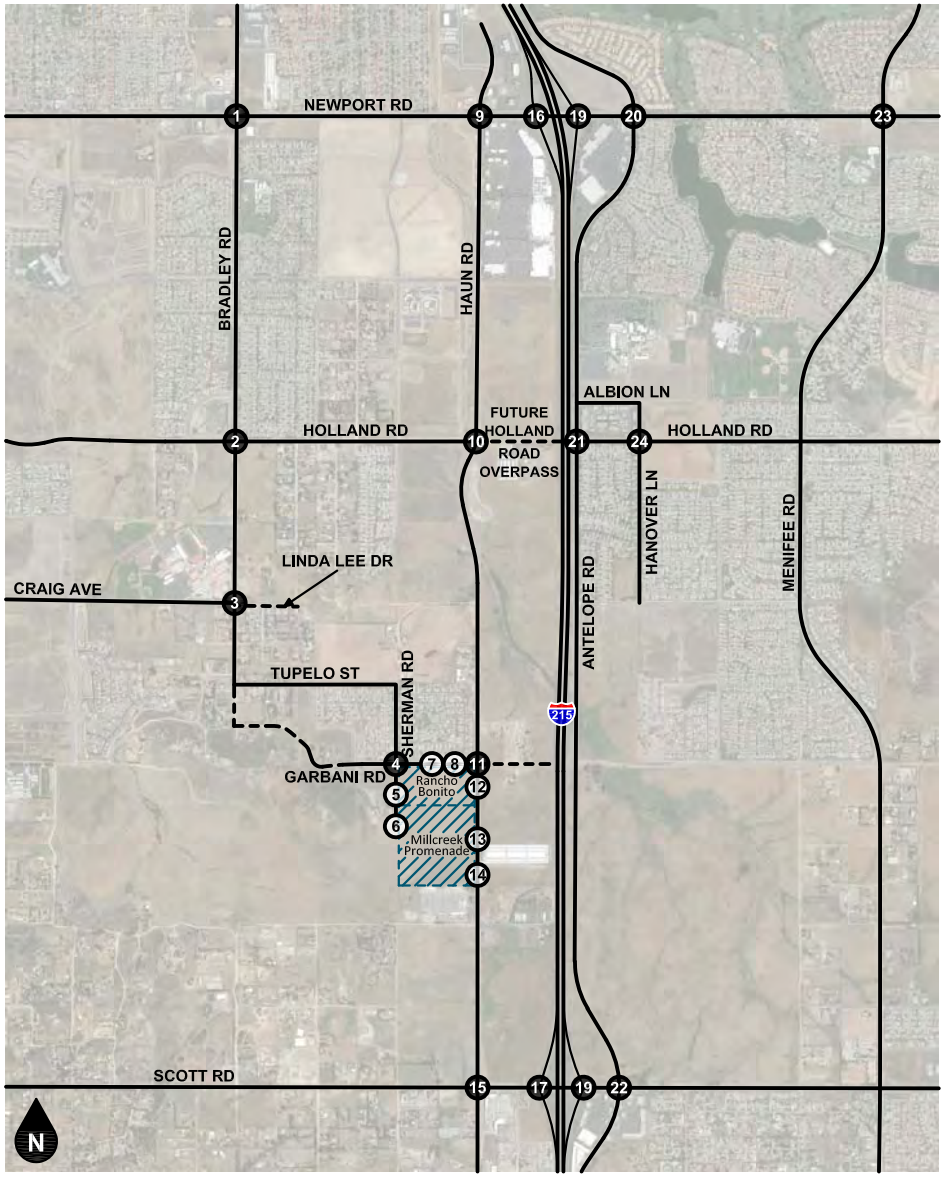


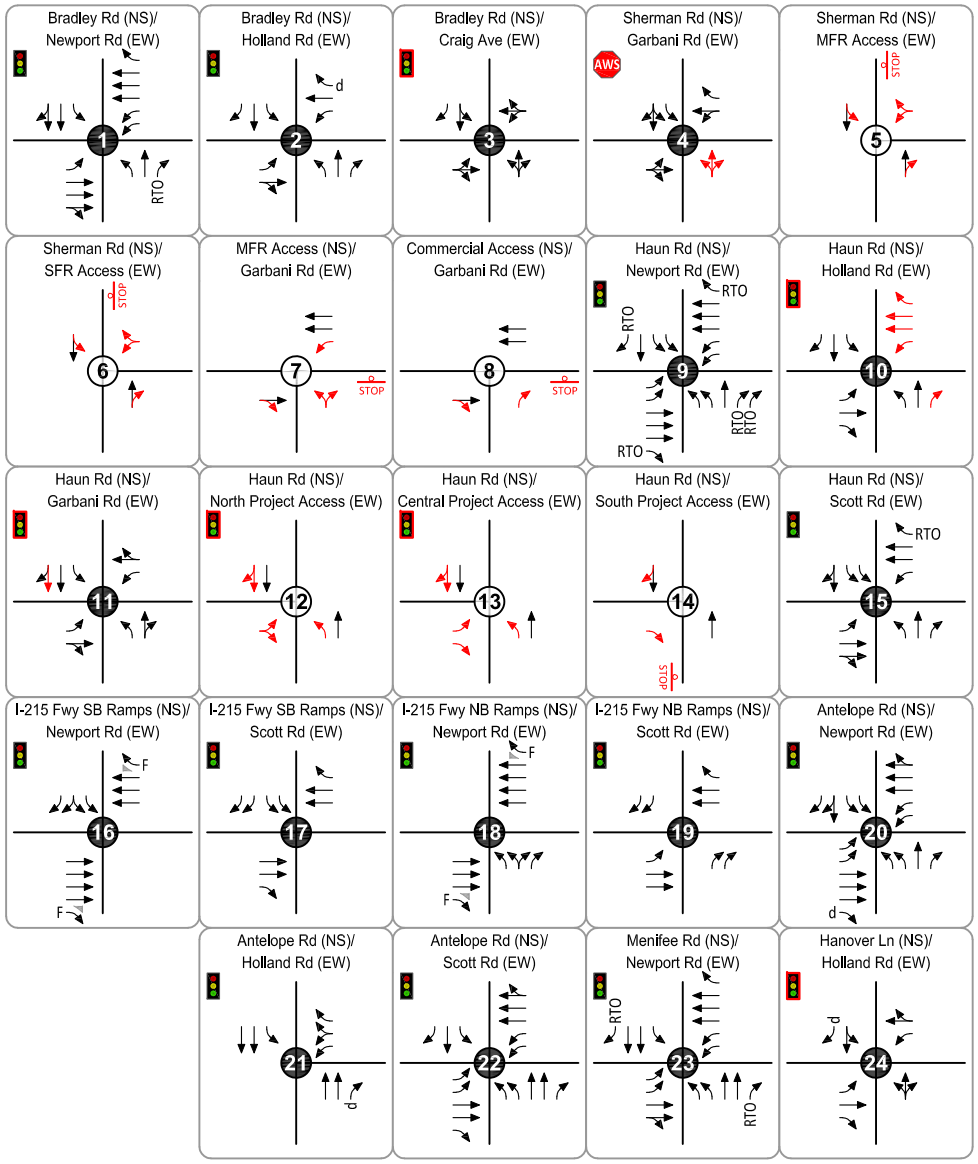


Legend

- Traffic Signal
- All Way Stop
- Stop Sign
- Existing Lane
- Improvements
- RTO Right Turn Overlap
- F Free Right Turn Lane
- d De Facto Right Turn Lane

Figure 52
Existing Plus Ambient Growth Plus Project Plus Cumulative
Lane Geometry and Intersection Traffic Controls - Without Holland Road Overpass





Legend

- Traffic Signal
- All Way Stop
- Stop Sign
- Existing Lane
- Improvements
- RTO Right Turn Overlap
- F Free Right Turn Lane
- d De Facto Right Turn Lane

Figure 53
Existing Plus Ambient Growth Plus Project Plus Cumulative
Lane Geometry and Intersection Traffic Controls - With Holland Road Overpass

5. RECOMMENDATIONS

RECOMMENDED MITIGATION MEASURES

Figure 54 exhibits the recommended off-site mitigation measures for all study intersections for Existing Plus Ambient Growth Plus Project Plus Cumulative traffic conditions, without Holland Road Overpass.

Figure 55 exhibits the recommended off-site mitigation measures for all study intersections for Existing Plus Ambient Growth Plus Project Plus Cumulative traffic conditions, with Holland Road Overpass.

SITE ACCESS

Access to the commercial component of the project is proposed to be provided via full access to Haun Road at the north and central accesses, restricted access (right turns in/out only) at the south access on Haun Road, and restricted access (right turns in/out only) to Garbani Road.

Access to the multi-family residential component of the project is proposed to be provided via full access to Sherman Road and Garbani Road.

Access to the restaurant and industrial components of the project is proposed to be provided via full access to Haun Road.

Access to the single-family residential component of the Millcreek Promenade project is proposed to be provided via full access to Sherman Road and Haun Road.

The distance between Garbani Road and the proposed North Project Access is approximately 637 feet. The distance between the proposed North Project Access and the proposed Central Project Access is approximately 708 feet. The County of Riverside Roadway Design Requirements (Standard No. 114) states that a Major Highway (Haun Road's classification) shall have intersection intervals at a minimum distance of 660 feet. The distance between Garbani Road and the proposed North Project Access is deficient by 23 feet. However, both the Haun Road and Garbani Road intersection and the Haun Road and North Project Access intersection are recommended for traffic signalization and the southbound shared through/right turn lane 95th percentile queue length at the North Project Access is less than the distance between the intersections. Therefore, with these improvements and based on the results of the analysis, it is anticipated that sufficient driveway spacing will be provided.

PROJECT IMPROVEMENTS

On-site improvements and improvements adjacent to the site will be required in conjunction with the proposed development to ensure adequate circulation within the project itself (see Figure 56).

Construct Sherman Road from Garbani Road to the south project boundary at its ultimate half-section width including landscaping and parkway improvements in conjunction with development. This north-south roadway is classified as a Collector/Interconnected Local (2 lanes) on the City of Menifee General Plan Circulation Element and as a Class III Bike Routes on the City of Menifee General Plan Proposed Bikeway and Community Pedestrian Network. Therefore, a community trail and bicycle specific signage shall be provided.

Construct Garbani Road from Sherman Road to Haun Road at its ultimate half-section width including landscaping and parkway improvements in conjunction with development. This east-west roadway is classified as a Major (4 lanes, divided) on the City of Menifee General Plan Circulation Element and as a Community On-Street Bike Lanes (Class II) on the City of Menifee General Plan Proposed Bikeway and Community Pedestrian Network. Therefore, a community trail/sidewalk and an on-street striped bicycle lane shall be provided.

Construct Haun Road from Garbani Road to the south project boundary at its ultimate half-section width including landscaping and parkway improvements in conjunction with development. This north-south roadway is classified as a Major (4 lanes, divided) on the City of Menifee General Plan Circulation Element and as a Community Off-Road Bike Trail (Class I) on the City of Menifee General Plan Proposed Bikeway and Community Pedestrian Network. Therefore, a community trail/sidewalk and an off-street bicycle path shall be provided.

Signalize the internal intersection directly west of the Haun Road and Central Project Access intersection including coordination and overlap with the traffic signal at the intersection of Haun Road and Central Project Access.

The project site should provide sufficient parking spaces to meet City of Menifee parking code requirements in order to service on-site parking demand.

On-site traffic signing/striping should be implemented in conjunction with detailed construction plans for the project site.

Sight distance at the project accesses shall comply with standard California Department of Transportation and City of Menifee sight distance standards. The final grading, landscaping, and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed and approved as consistent with this measure prior to issuance of grading permits.

As is the case for any roadway design, the City of Menifee should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

The following project-specific measures are recommended to provide access for the project site:

Sherman Road (NS) at:

Garbani Road (EW) - #4

- Construct northbound shared left/through/right turn lane

Multi-Family Residential Access (EW) - #5

- Construct northbound shared through/right turn lane
- Construct southbound shared left/through lane
- Construct westbound shared left/right turn lane

Single-Family Residential Access (EW) - #6

- Construct northbound shared through/right turn lane
- Construct southbound shared left/through lane
- Construct westbound shared left/right turn lane

Multi-Family Residential Access (NS) at:

Garbani Road (EW) - #7

- Construct northbound shared left/right turn lane
- Construct westbound left turn lane

Commercial Access (NS) at:

Garbani Road (EW) - #8

- Construct northbound right turn lane

Haun Road (NS) at:

North Project Access (EW) - #12

- Construct northbound left turn lane
- Construct additional southbound shared through/right turn lane
- Construct eastbound shared left/right turn lane
- Install traffic signal

Central Project Access (EW) - #1 3

- Construct northbound left turn lane
- Construct additional southbound shared through/right turn lane
- Construct eastbound left turn lane
- Construct eastbound right turn lane
- Install traffic signal

South Project Access (EW) - #14

- Construct eastbound right turn lane

PROJECT PHASING

The project site is proposed to be developed with 210 multi-family housing dwelling units, 204 single-family detached residential dwelling units, 38,400 square feet of industrial park, 122,727 square feet of commercial retail, and 8,000 square feet of high-turnover (sit-down) restaurant. The build out year for the project is 2022. Phase 1 includes the commercial retail, industrial park, and high-turnover (sit-down) restaurant components of the proposed project and is anticipated for an Opening Year of 2020.

For Phase 1, project frontage improvements include all of Haun Road and Garbani Road from Haun Road west to the residential boundary line adjacent to the project site. For Buildout, project frontage improvements include all of Haun Road, Garbani Road, and Sherman Road adjacent to the project site.

MITIGATION MEASURES

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for Without Holland Overpass traffic conditions:

Bradley Road (NS) at:

Holland Road (EW) - #2

- Construct northbound right turn lane

Craig Avenue / Linda Lee Drive (EW) - #3

- Install traffic signal

Sherman Road (NS) at:

Garbani Road (EW) - #4

- Construct southbound left turn lane

Haun Road (NS) at:

Newport Road (EW) - #9

- Restripe southbound shared through/right turn lane to right turn lane
- Install southbound right turn overlap
- Install eastbound right turn overlap
- Construct additional westbound right turn lane with overlap

Holland Road (EW) - #10

- Install traffic signal

Garbani Road (EW) - #11
- Restripe southbound right turn lane to shared through/right turn lane
- Construct westbound left turn lane
- Install traffic signal

Scott Road (EW) - #15
- Construct additional southbound left turn lane
- Install westbound right turn overlap

The following measures are recommended to mitigate the impact of the project on off-site traffic circulation for With Holland Overpass traffic conditions:

Haun Road (NS) at:

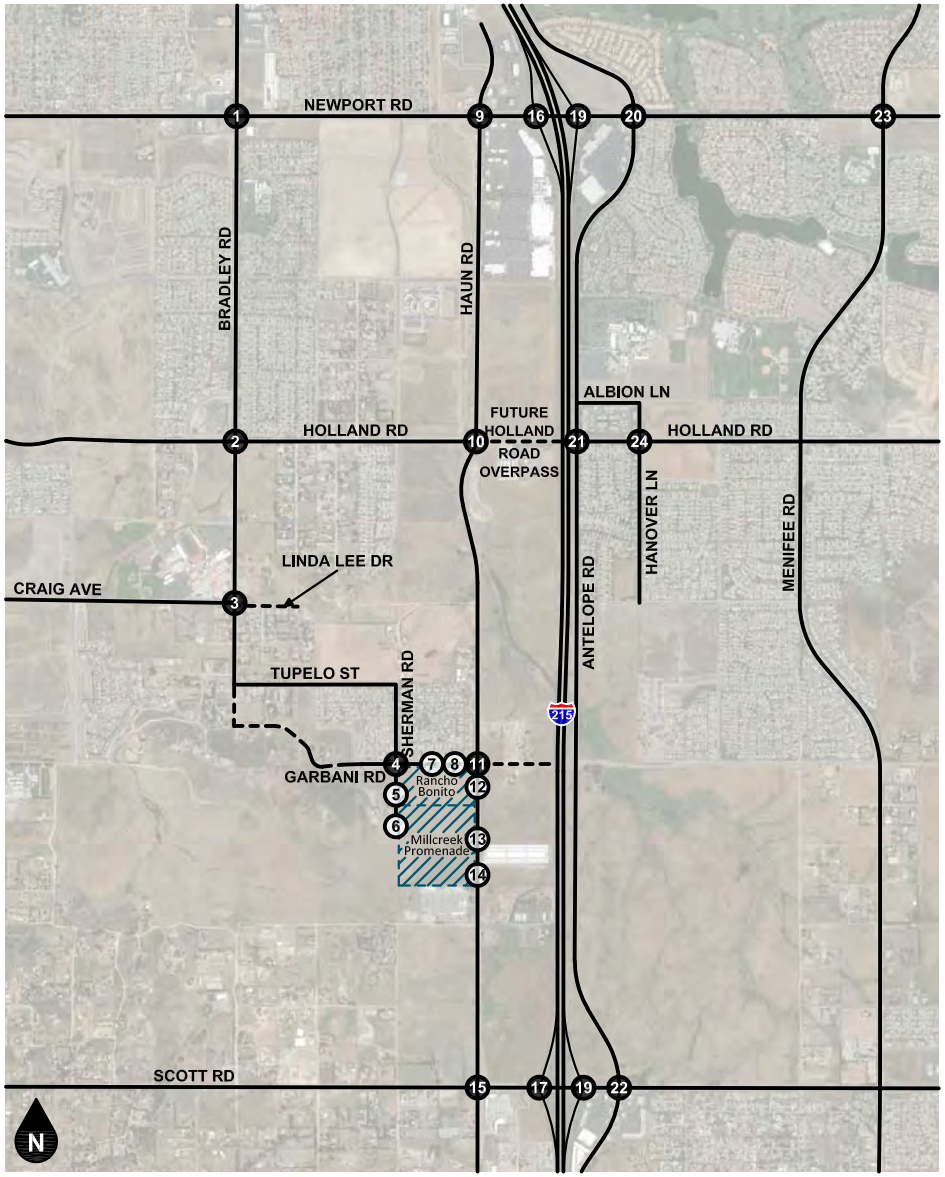
Holland Road (EW) - #10
- Construct northbound right turn lane
- Construct westbound left turn lane
- Construct additional westbound through lane
- Construct westbound right turn lane
- Install traffic signal

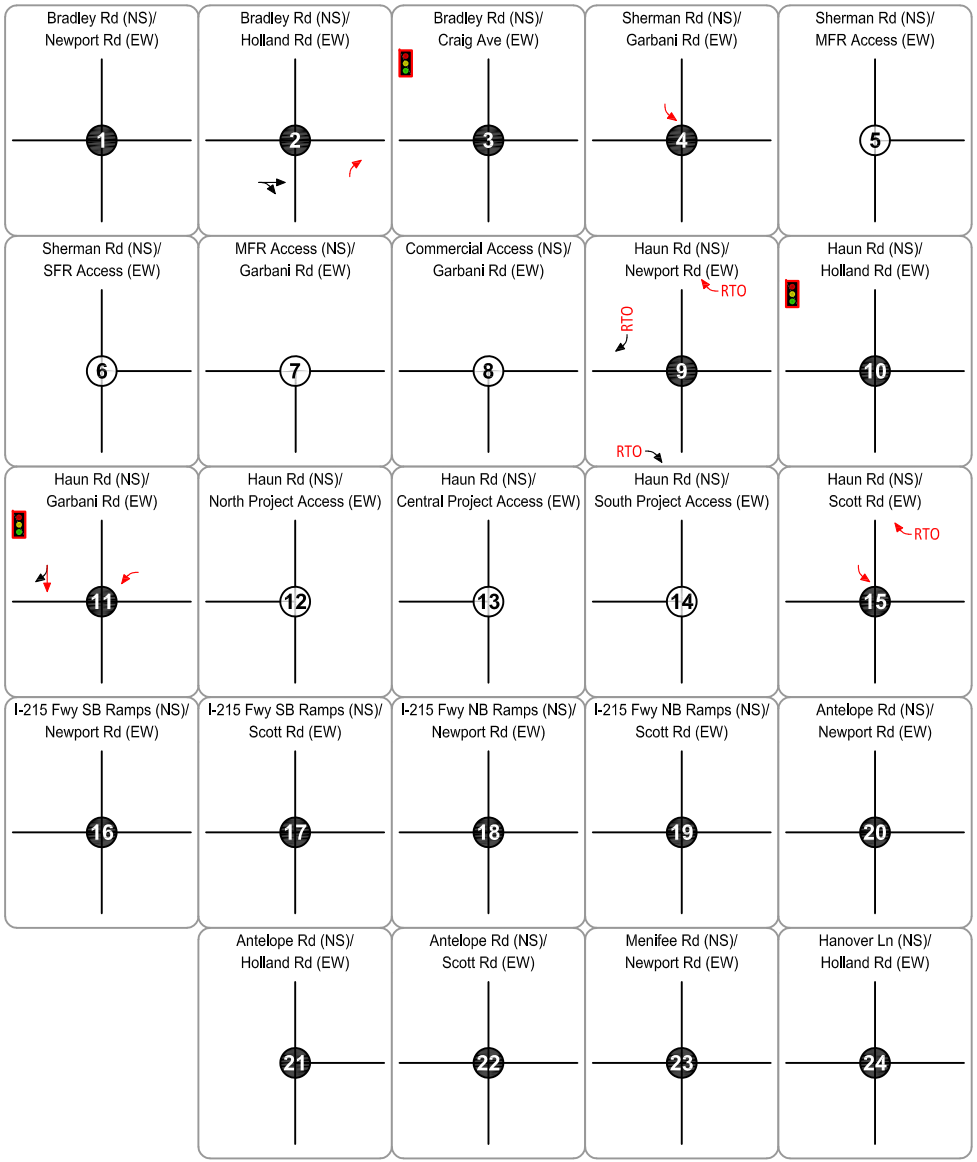
Garbani Road (EW) - #11
- Restripe southbound right turn lane to shared through/right turn lane
- Install traffic signal

Hanover Lane (NS) at:

Holland Road (EW) - #24
- Install traffic signal

Participate in specified City development fees to fund local roadway improvements that will be required as a result of the growth that development creates. The Western Riverside Council of Governments administers the Transportation Uniform Mitigation Fee (TUMF) for regional transportation improvements

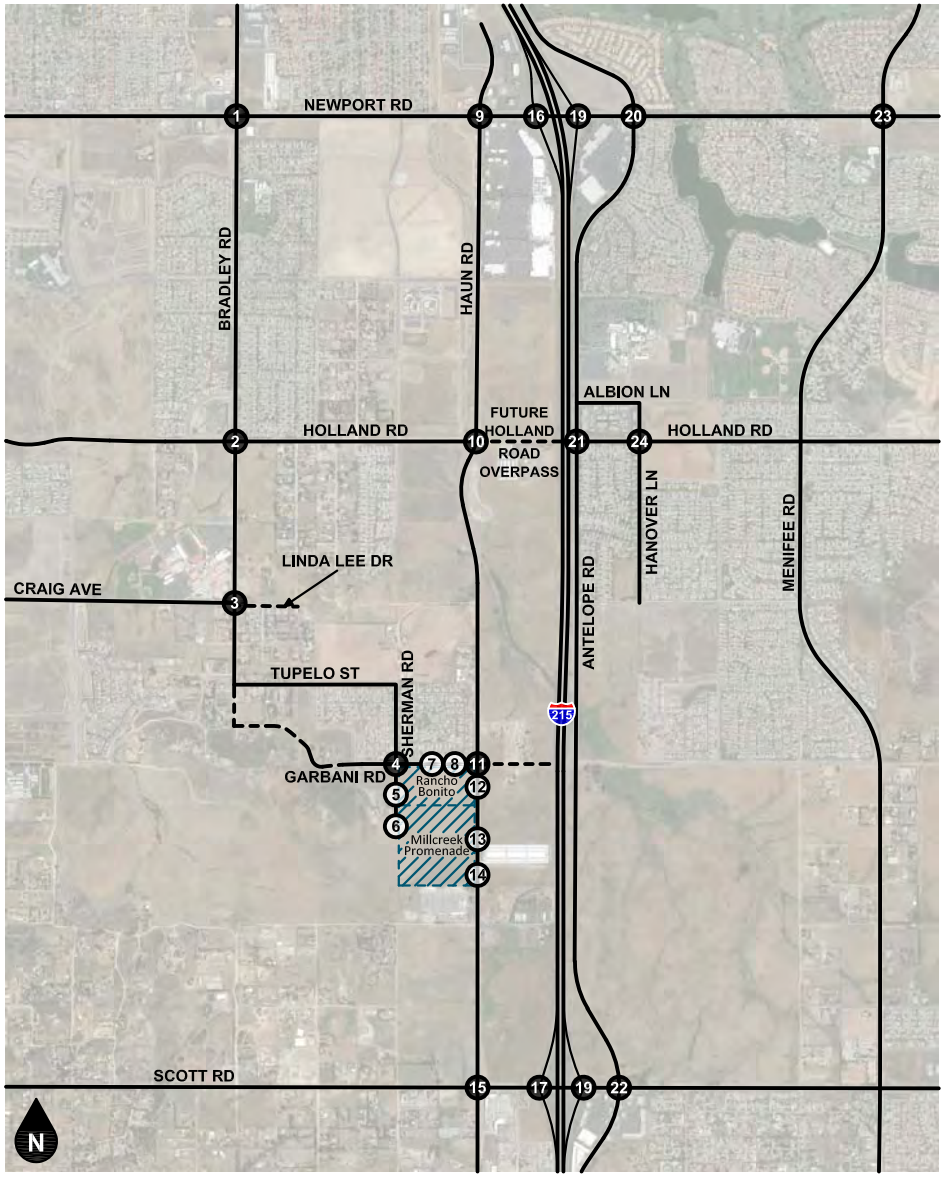


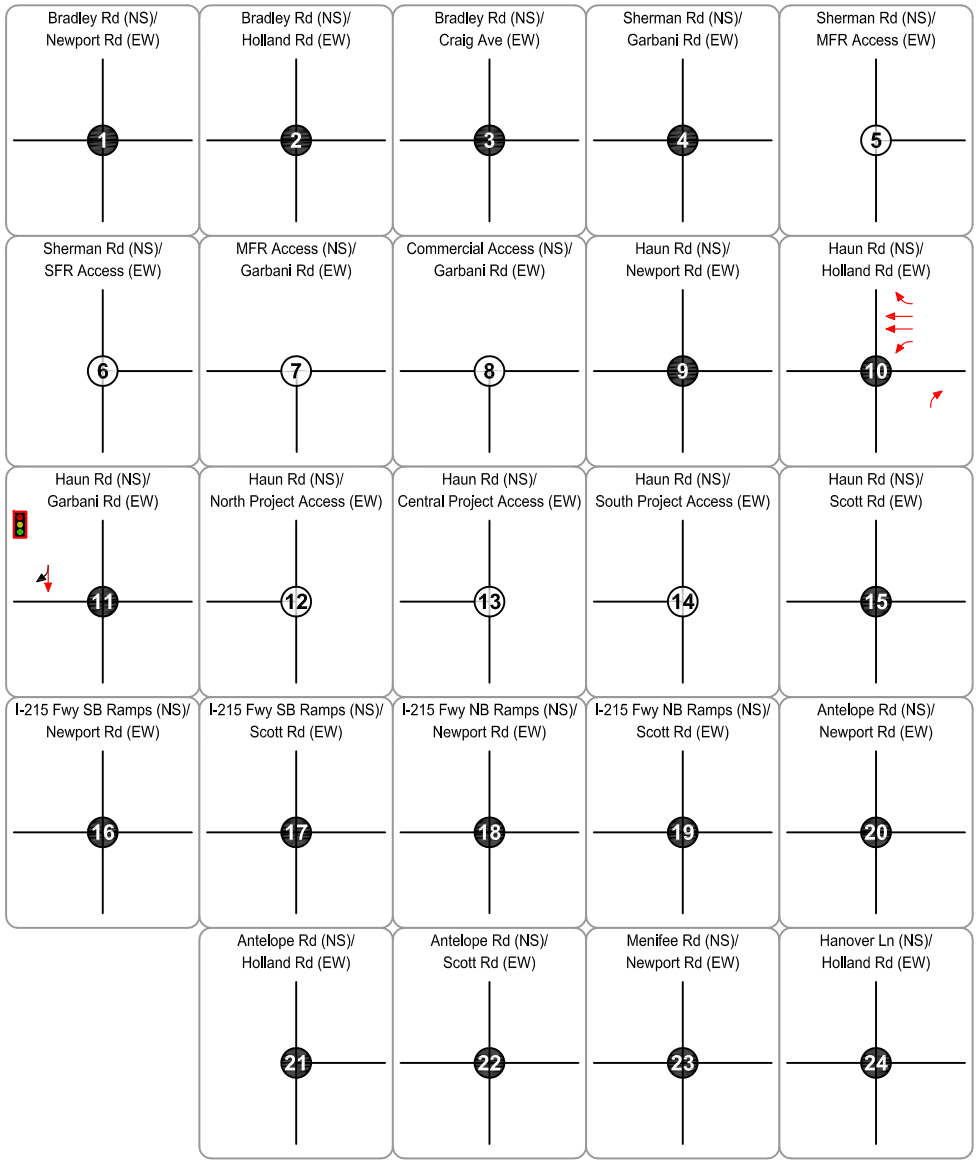


Legend

- Traffic Signal
- All Way Stop
- Stop Sign
- Existing Lane
- Improvements
- RTO Right Turn Overlap
- F Free Right Turn Lane
- d De Facto Right Turn Lane

Figure 54
Existing Plus Ambient Growth Plus Project Plus Cumulative Off-Site Recommended Mitigation Measures - Without Holland Road Overpass

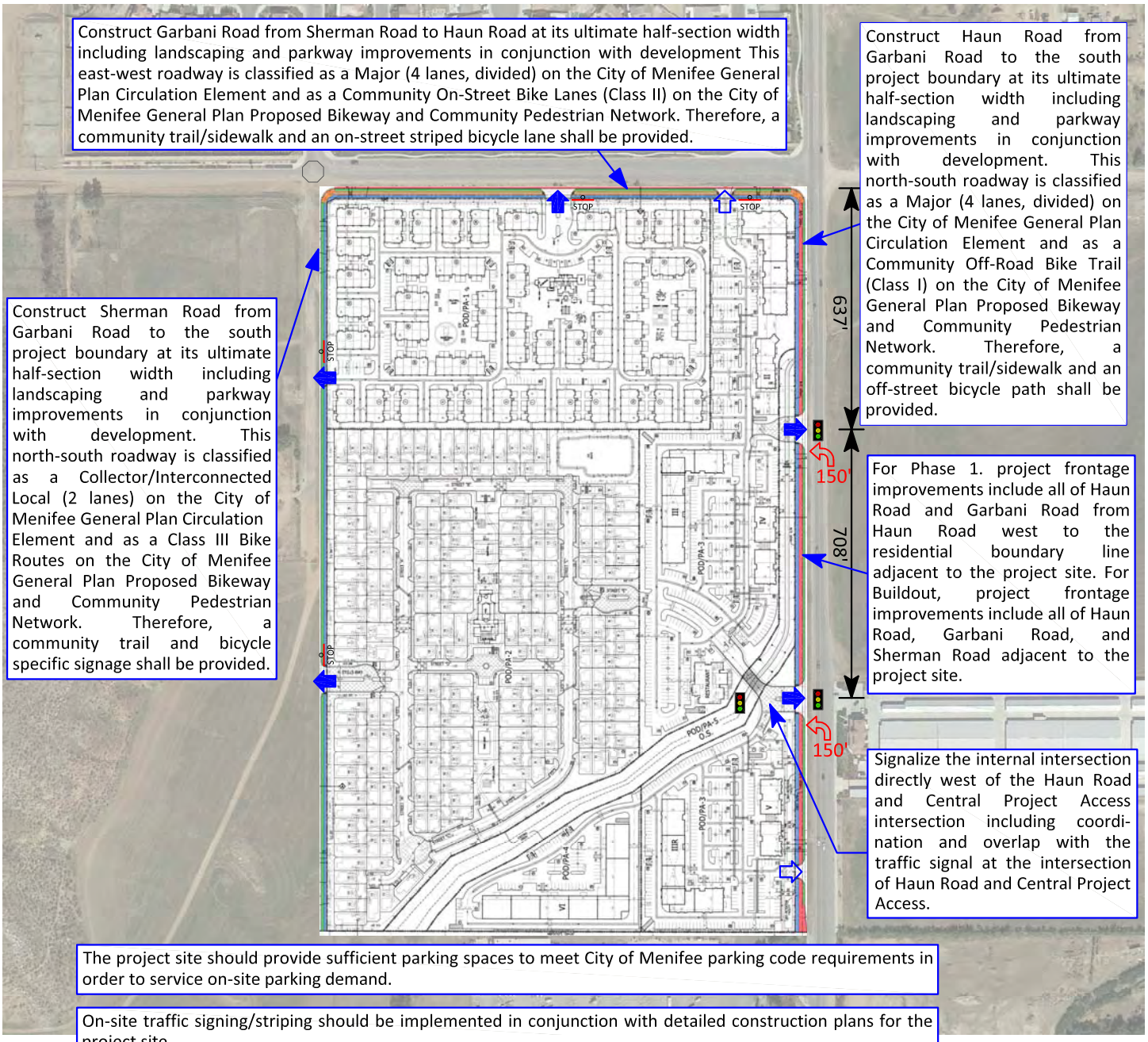




Legend

- Traffic Signal
- All Way Stop
- Stop Sign
- Existing Lane
- Improvements
- RTO Right Turn Overlap
- F Free Right Turn Lane
- d De Facto Right Turn Lane

Figure 55
Existing Plus Ambient Growth Plus Project Plus Cumulative Off-Site Recommended Mitigation Measures - With Holland Road Overpass



The project site should provide sufficient parking spaces to meet City of Menifee parking code requirements in order to service on-site parking demand.

On-site traffic signing/striping should be implemented in conjunction with detailed construction plans for the project site.

Sight distance at the project accesses shall comply with standard California Department of Transportation and City of Menifee sight distance standards. The final grading, landscaping, and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed and approved as consistent with this measure prior to issuance of grading permits.

As is the case for any roadway design, the City of Menifee should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Participate in specified City development fees to fund local roadway improvements that will be required as a result of the growth that development creates. The Western Riverside Council of Governments administers the Transportation Uniform Mitigation Fee (TUMF) for regional transportation improvements.

N

Legend

- Traffic Signal (Project Improvement)
- 150' Left Turn Pocket Length
- STOP Stop Sign (Project Improvement)
- AWS All Way Stop
- Full Access Driveway
- Right Turns In/Out Only Access Driveway

Figure 56
Circulation Recommendations

APPENDICES

Appendix A Glossary
Appendix B Scoping Agreement
Appendix C Traffic Count Worksheets
Appendix D Explanation and Calculation of Intersection Delay
Appendix E Traffic Signal Warrant Worksheets
Appendix F Trip Generation Comparison
Appendix G Synchro Signal Timing and Delay Reports

APPENDIX A

GLOSSARY

GLOSSARY OF TERMS

ACRONYMS

AC	Acres
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
DU	Dwelling Unit
ICU	Intersection Capacity Utilization
LOS	Level of Service
TSF	Thousand Square Feet
V/C	Volume/Capacity
VMT	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CONTROL DELAY: The component of delay, typically expressed in seconds per vehicle, resulting from the type of traffic control at an intersection. Control delay is measured by comparison with the uncontrolled condition; it includes delay incurred by slowing down, stopping/waiting, and speeding up.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CORNER SIGHT DISTANCE: The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic travelling at a given speed to radically alter their speed or trajectory. Corner sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 36 inches above the pavement in the center of the nearest approach lane.

CYCLE LENGTH: The time period in seconds required for a traffic signal to complete one full cycle of indications.

CUL-DE-SAC: A local street open at one end only and with special provisions for turning around.

DAILY CAPACITY: A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

PASSENGER CAR EQUIVALENT (PCE): A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

QUEUE: The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

QUEUE LENGTH: The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SHARED/RECIPROCAL PARKING AGREEMENT: A written binding document executed between property owners to provide a designated number of off-street parking stalls within a designated area to be available for specified businesses or land uses.

SIGHT DISTANCE: The continuous length of roadway visible to a driver or roadway user.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STACKING DISTANCE: The length of area available behind a service area, such as a traffic signal or gate, for vehicle queueing to occur.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through an intersection.

STOPPING SIGHT DISTANCE: The minimum distance required by the driver of a vehicle on the major roadway travelling at a given speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 6 inches above the pavement.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

TURNING RADIUS: The circular arc formed by the smallest turning path radius of the front outside tire of a vehicle, such as that performed by a U-turn maneuver. This is based on the length and width of the wheel base as well as the steering mechanism of the vehicle.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

SCOPING AGREEMENT

CITY OF MENIFEE
ENGINEERING DEPARTMENT

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the City of Menifee requirements for the traffic impact analysis of the following project.

Case No. _____
Related Cases -
SP No. _____
EIR No. _____
GPA No. _____
CZ No. _____
Project Name: **Rancho Bonito & Millcreek Promenade**
Project Address: **South of Garbani Road between Sherman Road and Haun Road**
Project Description: **Rancho Bonito – 26,727 Square Feet of Commercial Retail and 210 Townhome Dwelling Units Millcreek Promenade - 392 Apartment Dwelling Units, 38,400 Square Feet of Industrial Park, 96,000 Square Feet of Commercial Retail, and 8,000 Square Feet of High Turnover Sit-Down Restaurant**

	Consultant	Developer
Name:	**KUNZMAN ASSOCIATES, INC.**	**Sherman & Haun, LLC**
Address:	**1111 Town & Country, Suite 34**	**31103 Rancho Viejo Road, #535**
	Orange, CA 92868	**San Juan Capistrano, CA 92675**
Telephone:	**(714) 973-8383**	

A. Trip Generation Source: **Institute of Transportation Engineers, Trip Generation, 9th Edition, 2012**

Existing Land Use **EDC** Proposed Land Use **14.1 – 20R and CR**
Existing Zoning **M-C/I-P** Proposed Zoning **R-2, R-3, I-P, and C-1**
Total Daily Trips **12,639**

	In	Out	Total
AM Trips	**232**	**329**	**561**
PM Trips	**594**	**529**	**1,123**

Internal Trip Allowance **Yes** No (**10** % Trip Discount) (see Attached)
Pass-By Trip Allowance **Yes** No (**15** %Trip Discount) (see Attached)

B. Trip Geographic Distribution: N____% S____% E____% W____% - See Attached
(See attached exhibit for detailed assignment)

C. Background Traffic

Project Build-out Year **2020** Annual Ambient Growth Rate: **2** %
Phase Year(s) **2018**
Other area projects to be analyzed: _____

Model/Forecast methodology _____

D. Study intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

1. Bradley Road (NS) / Newport Road (EW)
2. Bradley Road (NS) / Holland Road (EW)
3. Bradley Road (NS) / Craig Avenue (EW)
4. Sherman Road (NS) / Garbani Road (EW)
5. Sherman Road (NS) / Rancho Bonito Access (EW)
6. Sherman Road (NS) / Millcreek Prom Access (EW)
7. Rancho B West Access (NS) / Garbani Road (EW)
8. Rancho B East Access (NS) / Garbani Road (EW)
9. Haun Road (NS) / Newport Road (EW)
10. Haun Road (NS) / Holland Road (EW)
11. Haun Road (NS) / Garbani Road (EW)
12. Haun Road (NS) / Rancho Bonito Access (EW)
13. Haun Road (NS) / Millcreek Prom Access (EW)
14. Haun Road (NS) / Scott Road (EW)
15. I-215 FWY SB Ramps (NS) / Newport Road (EW)
16. I-215 FWY SB Ramps (NS) / Scott Road (EW)
17. I-215 FWY NB Ramps (NS) / Newport Road (EW)
18. I-215 FWY NB Ramps (NS) / Scott Road (EW)
19. Antelope Road (NS) / Newport Road (EW)
20. Antelope Road (NS) / Holland Road (EW)
21. Antelope Road (NS) / Scott Road (EW)
22. Menifee Road (NS) / Newport Road (EW)

Study Roadway Segments:

1. Garbani Road, Haun Road to Sherman Road
2. Tupelo Street, Sherman Road to Bradley Road
3. Sherman Road, Tupelo Street to Garbani Road
4. Haun Road, Newport Road to Holland Road
5. Haun Road, Holland Road to Garbani Road
6. Haun Road, Garbani Road to Scott Road
7. Bradley Road, Newport Road to Holland Road
8. Bradley Road, Holland Road to Tupelo Street
9. Scott Road, west of Haun Road
10. Scott Road, Haun Road to I-215
11. Scott Road, I-215 to Antelope Road
12. Newport Road, west of Bradley Road
13. Newport Road, Bradley Road to Haun Road
14. Newport Road, Antelope Road to Menifee Road
15. Newport Road, east of Menifee Road

E. Other Jurisdictional Impacts

Is this project within a City's Sphere of Influence or one-mile radius of City boundaries? Yes [No]
If so, name of City Jurisdiction: _____

F. Site Plan (See attached reduced copy)

G. Specific issues to be addressed in the Study (in addition to the standard analysis described in the standard analysis) (To be filled out by City of Menifee)
A trip generation comparison shall be provided in the study between the current proposed uses and the potential uses based on the current M-C/I-P zoning.

H. Existing Conditions

Traffic count data must be new or recent. Provide traffic counts if other than new counts.
Date of counts: **January 2016**

I. Analysis Scenarios

Three alternatives (Rancho Bonito only, Millcreek Promenade only, both projects combined)

Existing, Existing Plus Project (Buildout)

Project Opening Year 2018 (Existing + Ambient Growth + Phase 1 Project)

Cumulative Conditions Without Holland Overpass (Existing + Ambient Growth (2020) + Cumulative + Project Buildout)

Cumulative Conditions With Holland Overpass (Existing + Ambient Growth (2020) + Cumulative + Project Buildout)

Recommended by:

Bryan Crawford, Associate — **June 2, 2016**
Consultant's Representative — Date

Approved Scoping Agreement:

7/19/16
City of Menifee, Engineering Department — Date

#6347

Table 1

Rancho Bonito Trip Generation[1]

Land Use	Quantity	Units[2]	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
Trip Generation Rates									
Residential Condominiums/Townhomes	210	DU	0.07	0.37	0.44	0.35	0.17	0.52	5.81
Commercial Retail	26.727	TSF	1.61	0.97	2.58	4.45	4.83	9.28	107.76
Phase 1 - 2018 (Commercial Only)									
Trips Generated									
Commercial Retail	26.727	TSF	43	26	69	119	129	248	2,880
- Pass-By Trip Reduction (15%)[3]			-6	-4	-10	-18	-19	-37	-432
Total			37	22	59	101	110	211	2,448
Phase 2 - 2020									
Trips Generated									
Residential Condominiums/Townhomes	210	DU	16	77	93	73	36	109	1,220
Commercial Retail	26.727	TSF	43	26	69	119	129	248	2,880
- Pass-By Trip Reduction (15%)[3]			-6	-4	-10	-18	-19	-37	-432
Subtotal			53	99	152	174	146	320	3,668
Internal Capture (10%)[4]			-4	-2	-6	-7	-4	-11	-122
Total			49	97	146	167	142	309	3,546

[1] Source: Institute of Transportation Engineers, Trip Generation, 9th Edition, 2012, Land Use Categories 230 and 820.

[2] DU = Dwelling Unit; TSF = Thousand Square Feet

[3] Pass-by reduction based on the commercial retail trip generation minus the internal interaction reduction.

[4] Internal capture reduction based on 10% of the lowest generating end of trip between the residential condominiums/townhomes land use and the commercial retail land use.

Table 2

Millcreek Promenade Trip Generation[1]

Land Use	Quantity	Units[2]	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
Trip Generation Rates									
Apartments	392	DU	0.10	0.41	0.51	0.40	0.22	0.62	6.65
Industrial Park	38.400	TSF	0.67	0.15	0.82	0.18	0.67	0.85	6.83
Commercial Retail	96.000	TSF	0.98	0.60	1.58	2.92	3.16	6.07	68.89
High Turnover Sit-Down Restaurant	8.000	TSF	5.95	4.86	10.81	5.91	3.94	9.85	127.15
Phase 1 - 2018 (Commercial and Restaurant Only)									
Trips Generated									
Industrial Park	38.400	TSF	26	6	32	7	26	33	262
Commercial Retail	96.000	TSF	94	58	152	280	303	583	6,613
- Pass-By Trip Reduction (15%)[3]			-14	-9	-23	-42	-45	-87	-992
High Turnover Sit-Down Restaurant	8.000	TSF	48	39	87	47	32	79	1,017
- Pass-By Trip Reduction (15%)[3]			-7	-6	-13	-7	-5	-12	-153
Total			147	88	235	285	311	596	6,747
Phase 2 - 2020									
Trips Generated									
Apartments	392	DU	40	160	200	158	85	243	2,607
Industrial Park	38.400	TSF	26	6	32	7	26	33	262
Commercial Retail	96.000	TSF	94	58	152	280	303	583	6,613
- Pass-By Trip Reduction (15%)[3]			-14	-9	-23	-42	-45	-87	-992
High Turnover Sit-Down Restaurant	8.000	TSF	48	39	87	47	32	79	1,017
- Pass-By Trip Reduction (15%)[3]			-7	-6	-13	-7	-5	-12	-153
Subtotal			187	248	435	443	396	839	9,354
Internal Capture (10%)[4]			-4	-16	-20	-16	-9	-25	-261
Total			183	232	415	427	387	814	9,093

[1] Source: Institute of Transportation Engineers, Trip Generation, 9th Edition, 2012, Land Use Categories 130, 220, 820, and 932.

[2] DU = Dwelling Unit; TSF = Thousand Square Feet

[3] Pass-by reduction based on the commercial retail and restaurant trip generation minus the internal interaction reduction.

[4] Internal capture reduction based on 10% of the lowest generating end of trip between the apartment land use and the other combined land uses.

Table 3

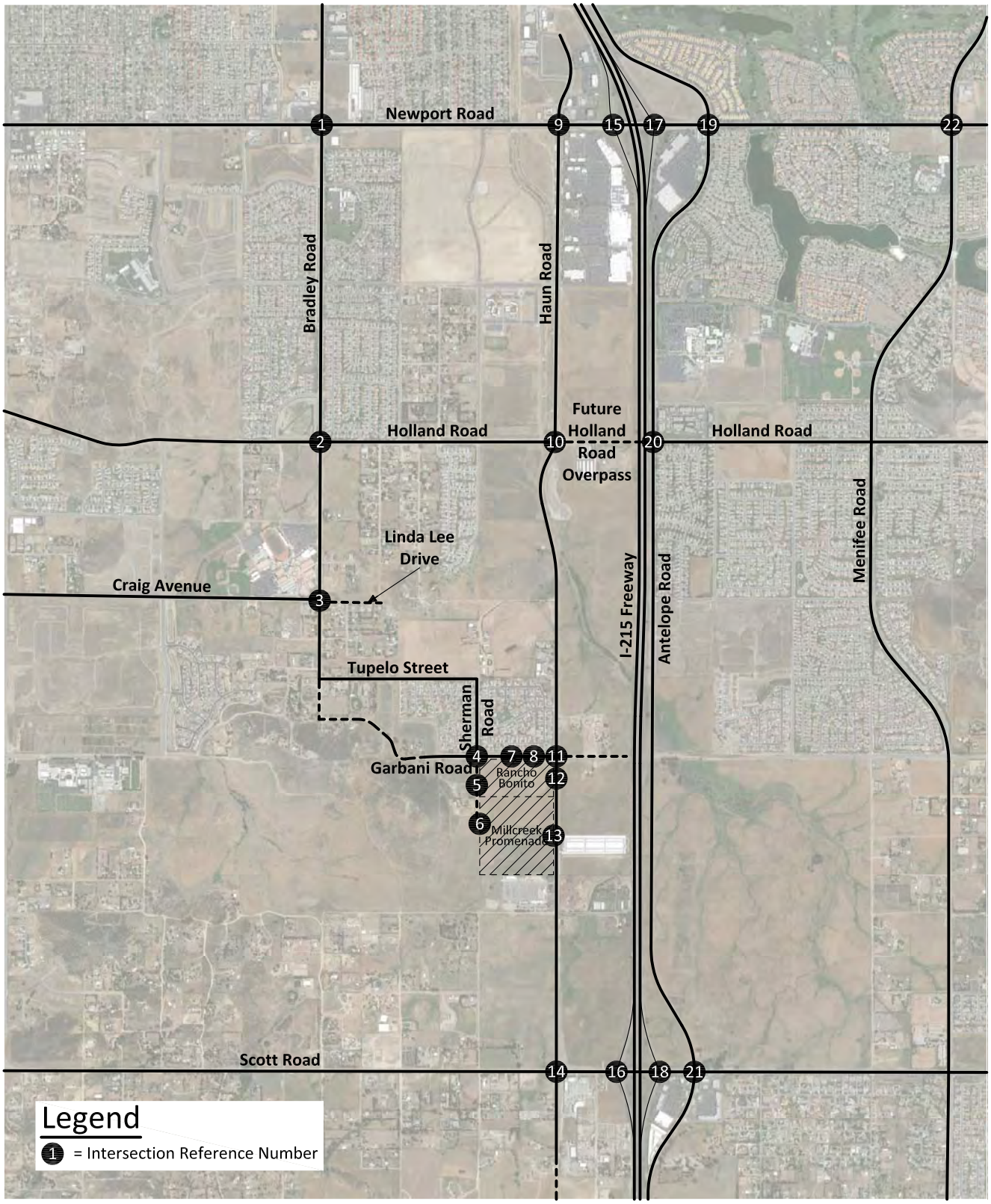
Combined Project Trip Generation[1]

Land Use	Quantity	Units[2]	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
Phase 1 - 2018									
Rancho Bonito									
Commercial Retail	26.727	TSF	43	26	69	119	129	248	2,880
- Pass-By Trip Reduction (15%)			-6	-4	-10	-18	-19	-37	-432
Total			37	22	59	101	110	211	2,448
Millcreek Promenade									
Industrial Park	38.400	TSF	26	6	32	7	26	33	262
Commercial Retail	96.000	TSF	94	58	152	280	303	583	6,613
- Pass-By Trip Reduction (15%)			-14	-9	-23	-42	-45	-87	-992
High Turnover Sit-Down Restaurant	8.000	TSF	48	39	87	47	32	79	1,017
- Pass-By Trip Reduction (15%)			-7	-6	-13	-7	-5	-12	-153
Total			147	88	235	285	311	596	6,747
Combined Total			184	110	294	386	421	807	9,195
Phase 2 - 2020									
Rancho Bonito									
Residential Condominiums/Townhomes	210	DU	16	77	93	73	36	109	1,220
Commercial Retail	26.727	TSF	43	26	69	119	129	248	2,880
- Pass-By Trip Reduction (15%)			-6	-4	-10	-18	-19	-37	-432
Subtotal			53	99	152	174	146	320	3,668
Internal Capture (10%)			-4	-2	-6	-7	-4	-11	-122
Total			49	97	146	167	142	309	3,546
Millcreek Promenade									
Apartments	392	DU	40	160	200	158	85	243	2,607
Industrial Park	38.400	TSF	26	6	32	7	26	33	262
Commercial Retail	96.000	TSF	94	58	152	280	303	583	6,613
- Pass-By Trip Reduction (15%)			-14	-9	-23	-42	-45	-87	-992
High Turnover Sit-Down Restaurant	8.000	TSF	48	39	87	47	32	79	1,017
- Pass-By Trip Reduction (15%)			-7	-6	-13	-7	-5	-12	-153
Subtotal			187	248	435	443	396	839	9,354
Internal Capture (10%)			-4	-16	-20	-16	-9	-25	-261
Total			183	232	415	427	387	814	9,093
Combined Total			232	329	561	594	529	1,123	12,639

[1] See Tables 1 and 2.

[2] TSF = Thousand Square Feet; DU = Dwelling Unit

Figure 1
Project Location Map



KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6437

Figure 2
Site Plan

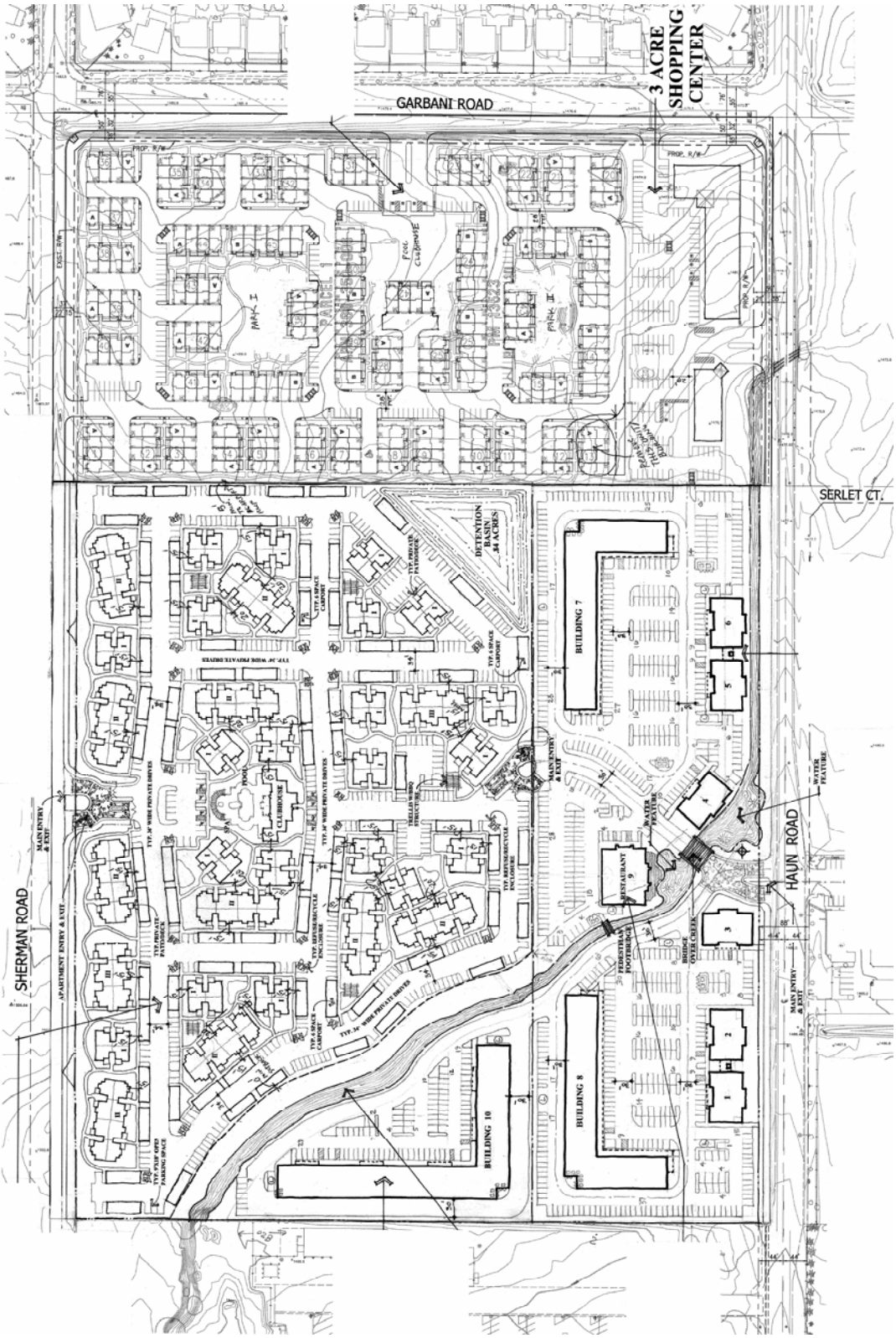
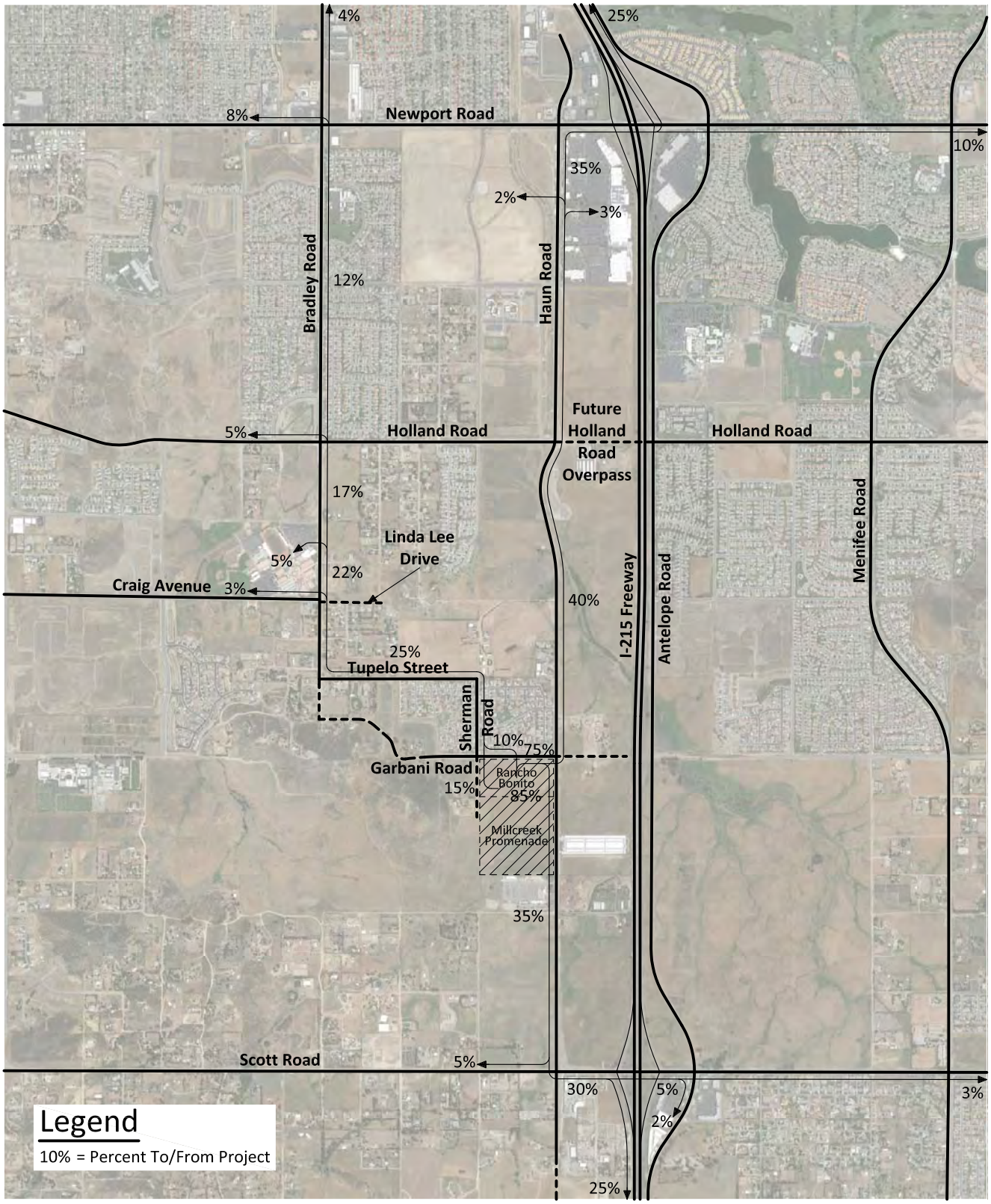


Figure 3
Rancho Bonito Trip Distribution - Residential
(Without Holland Road Overpass)

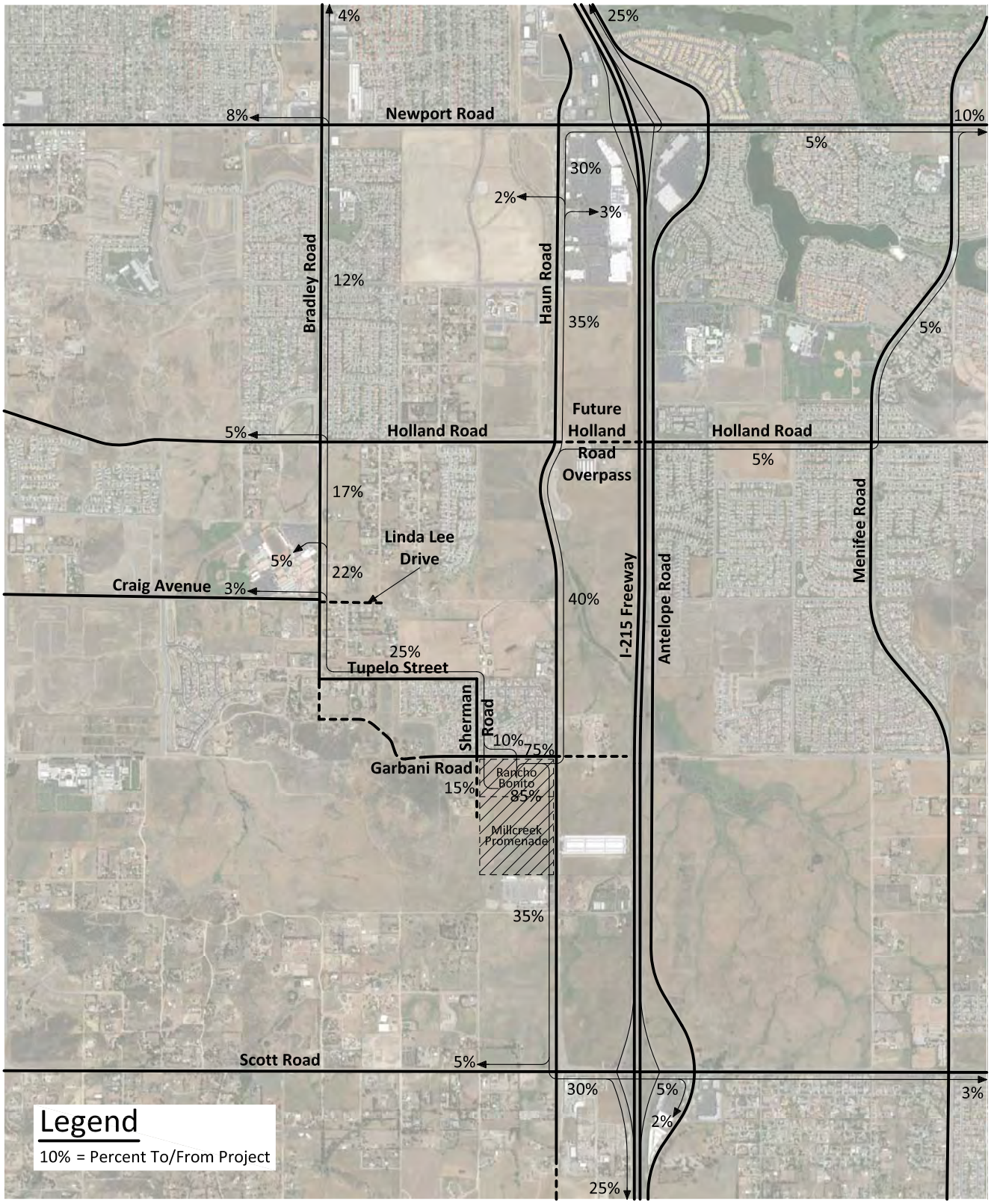


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6437

Figure 4
Rancho Bonito Trip Distribution - Residential
(With Holland Road Overpass)

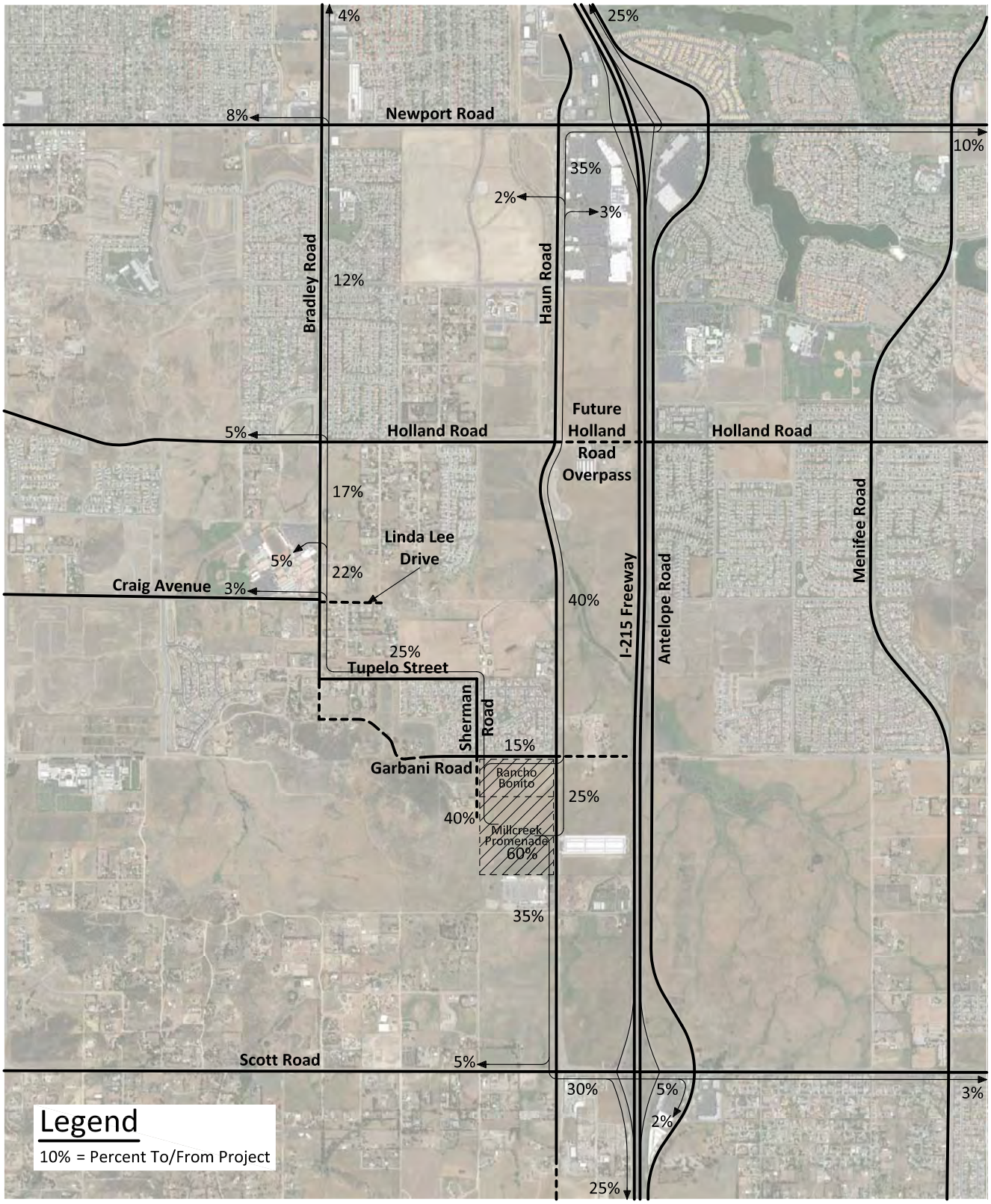


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6437

Figure 5
Millcreek Promenade Project Trip Distribution - Residential
(Without Holland Road Overpass)

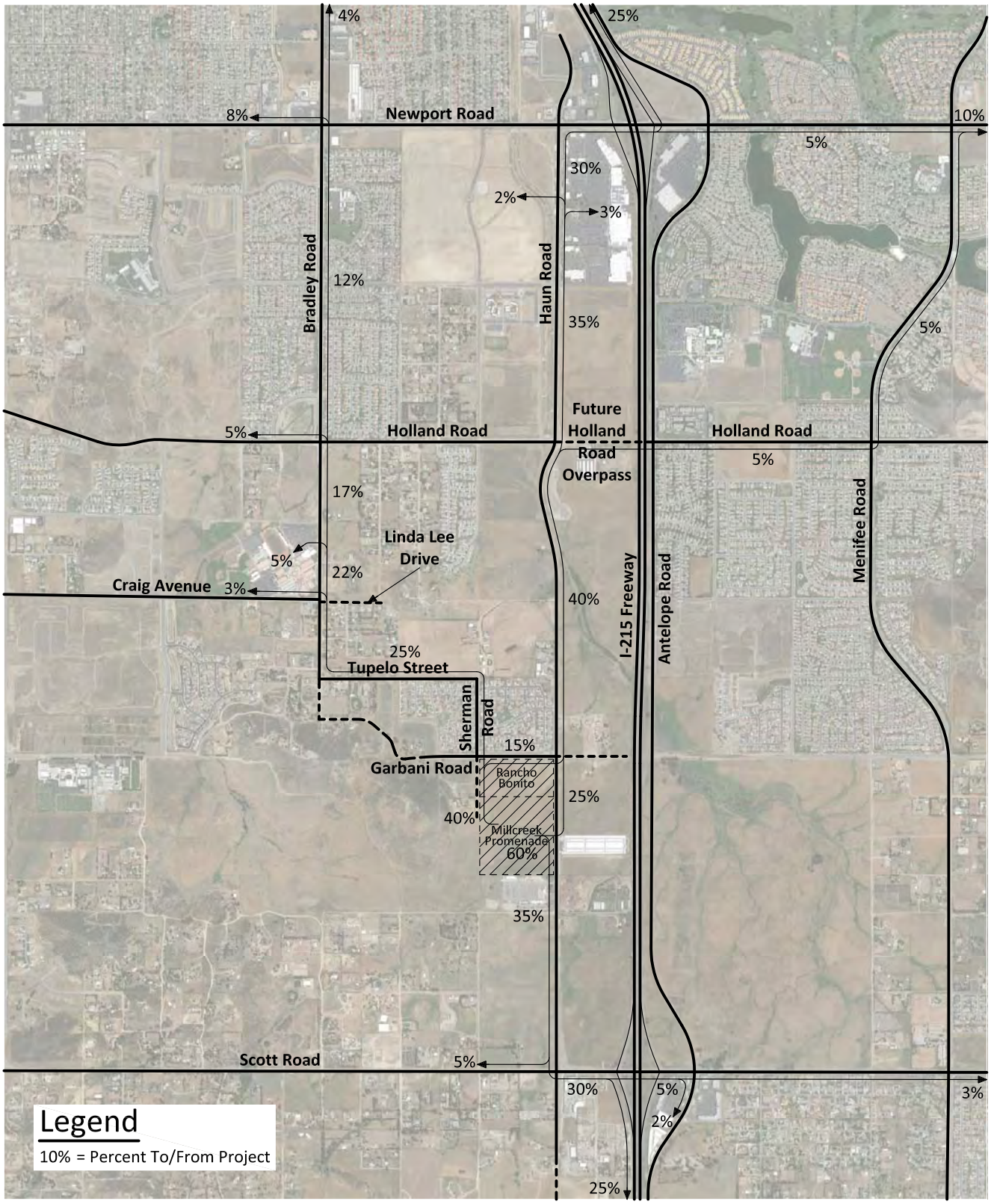


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6437

Figure 6
Millcreek Promenade Trip Distribution - Residential
(With Holland Road Overpass)

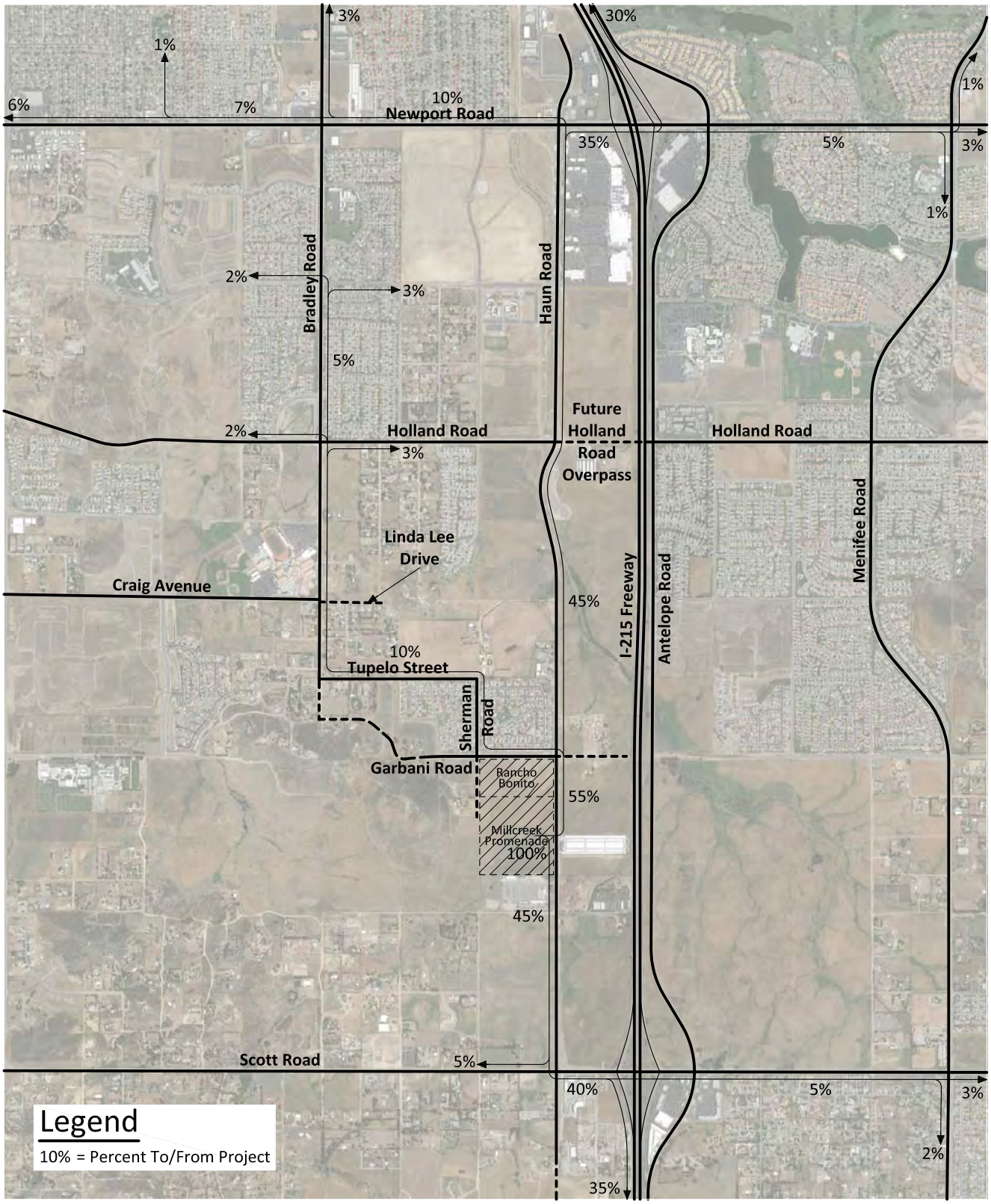


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6437

Figure 7
Rancho Bonito Trip Distribution - Industrial Park

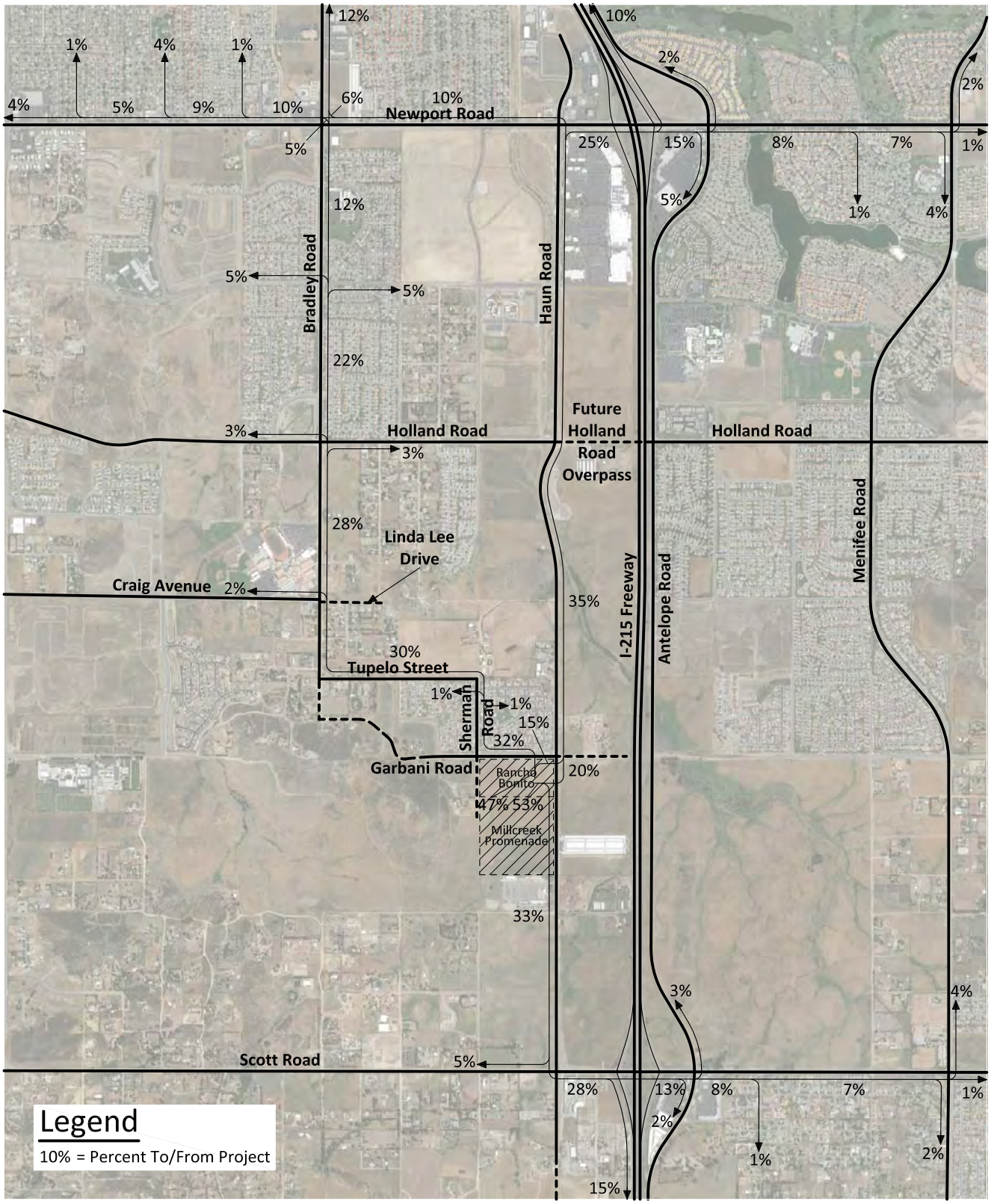


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6437

Figure 8
Rancho Bonito Trip Distribution - Commercial Retail
(Without Holland Road Overpass)

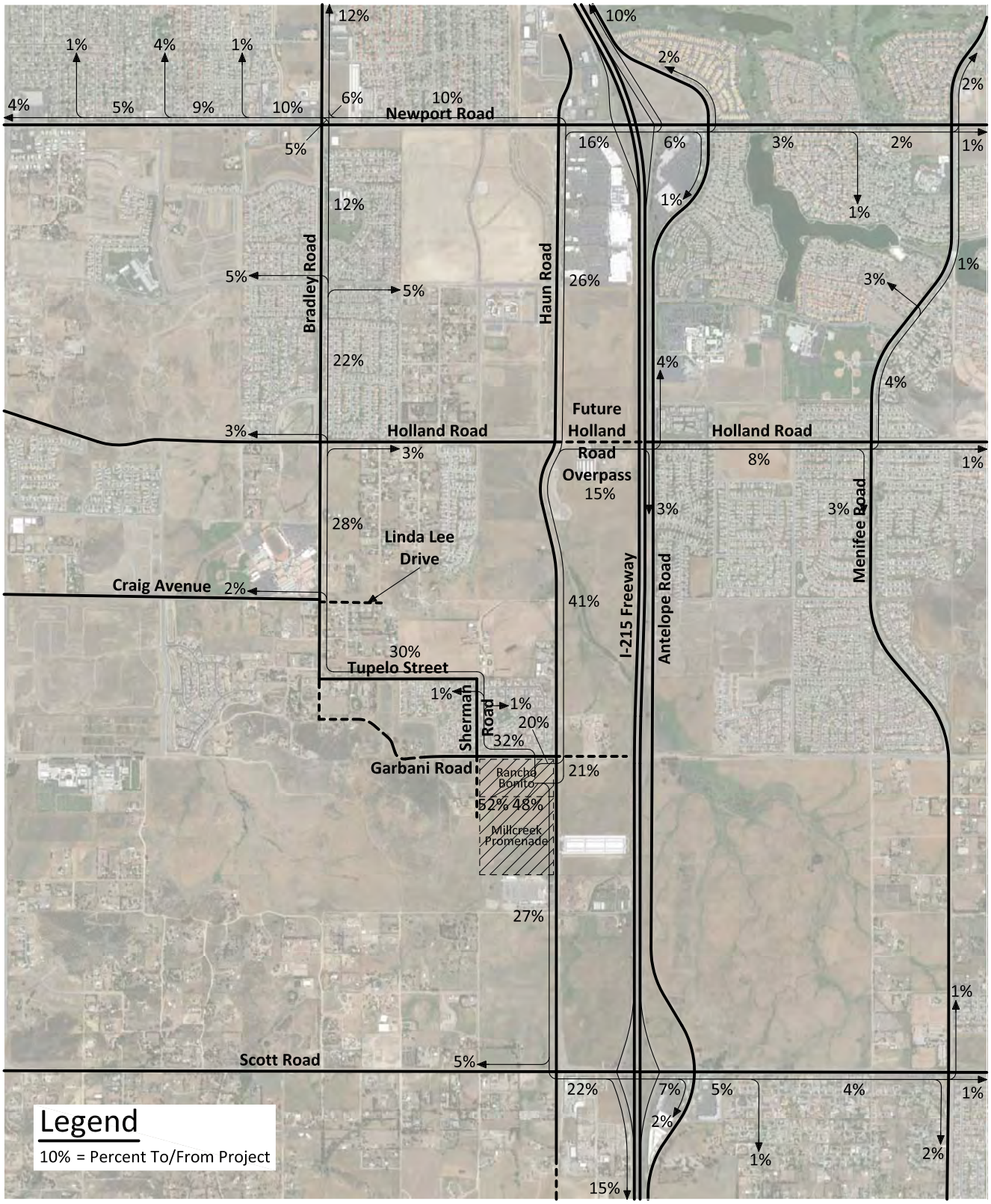


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6437

Figure 9
Rancho Bonito Trip Distribution - Commercial Retail
(With Holland Road Overpass)

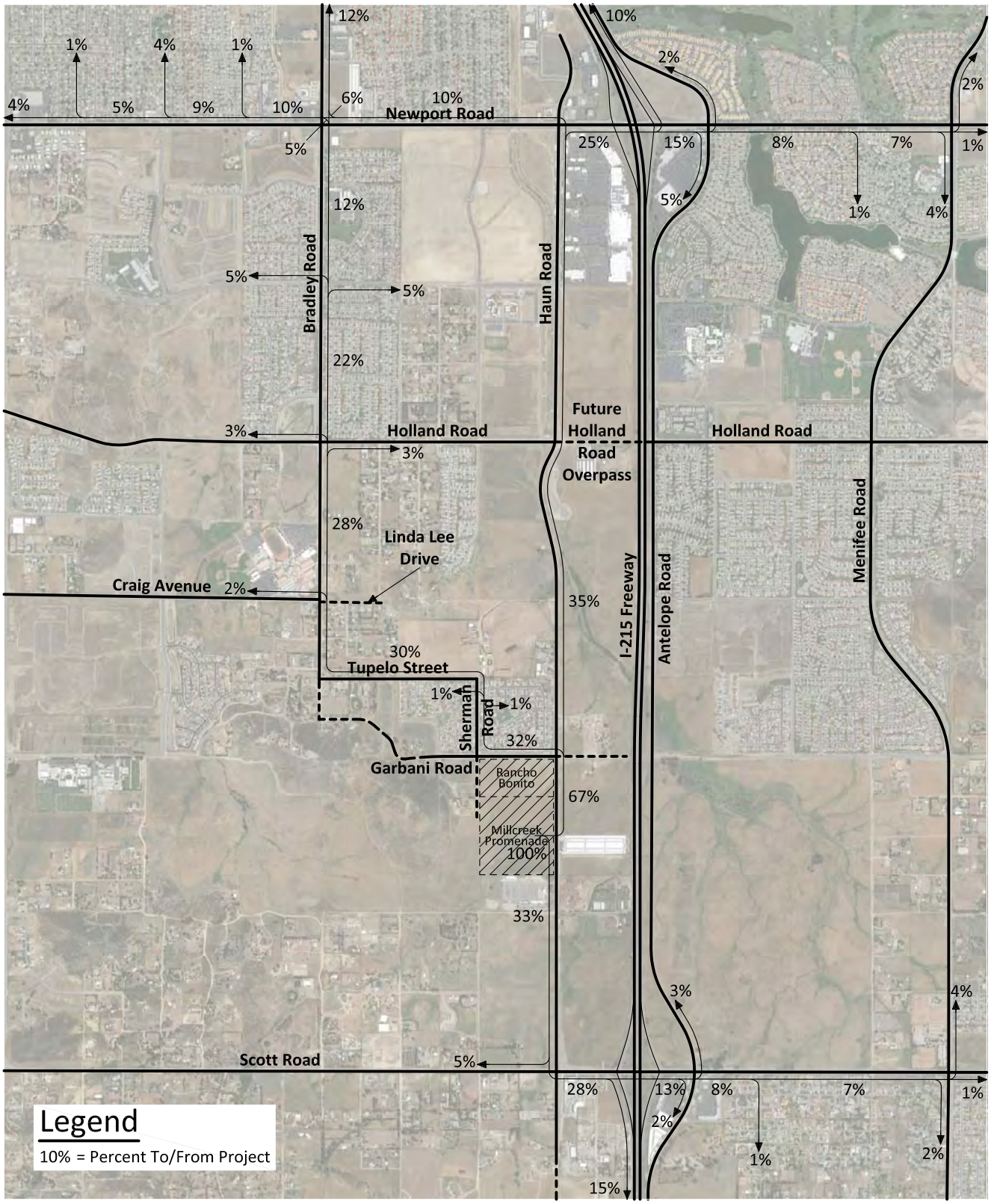


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6437

Figure 10
Millcreek Promenade Trip Distribution - Commercial and Restaurant
(Without Holland Road Overpass)

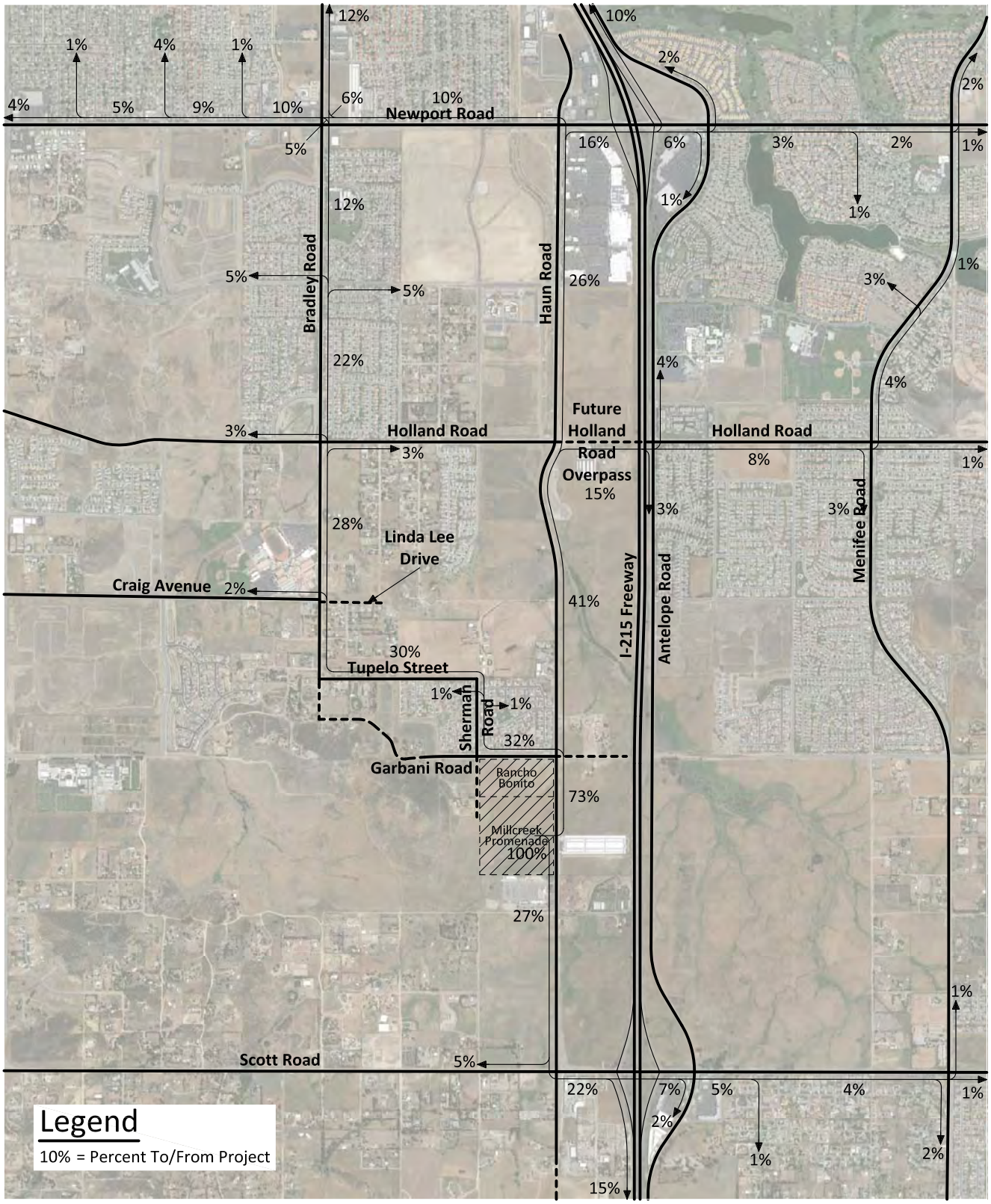


KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6437

Figure 11
Millcreek Promenade Trip Distribution - Commercial and Restaurant
(With Holland Road Overpass)



KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE

JN 6437

APPENDIX C

TRAFFIC COUNT WORKSHEETS

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: 951-268-6268
email: counts@countsunlimited.com

City of Menifee
Garbani Road
B/ Sherman Road - Haun Road
24 Hour Directional Volume Count

MEN001
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	8			2	8				
12:15		0	12			3	16				
12:30		1	9			1	9				
12:45		1	14	3	43	0	10	6	43	9	86
01:00		3	7			2	10				
01:15		1	10			2	12				
01:30		1	15			0	16				
01:45		1	9	6	41	3	10	7	48	13	89
02:00		0	19			1	10				
02:15		1	12			1	7				
02:30		2	14			2	23				
02:45		0	12	3	57	1	**32**	5	72	8	129
03:00		0	7			0	**37**				
03:15		1	**80**			0	**50**				
03:30		0	**127**			1	**27**				
03:45		3	**52**	4	266	0	25	1	139	5	405
04:00		3	**23**			1	27				
04:15		6	26			1	29				
04:30		6	27			0	29				
04:45		4	21	19	97	0	17	2	102	21	199
05:00		6	26			1	29				
05:15		7	10			1	18				
05:30		3	24			3	20				
05:45		7	14	23	74	3	17	8	84	31	158
06:00		6	13			1	16				
06:15		7	16			5	25				
06:30		16	15			9	21				
06:45		19	7	48	51	16	18	31	80	79	131
07:00		25	7			**47**	15				
07:15		**51**	5			**124**	12				
07:30		**80**	8			**147**	4				
07:45		**110**	10	266	30	**69**	10	387	41	653	71
08:00		**37**	2			18	9				
08:15		10	5			8	3				
08:30		18	8			14	4				
08:45		22	2	87	17	7	3	47	19	134	36
09:00		13	1			3	2				
09:15		11	3			10	4				
09:30		8	5			9	9				
09:45		9	3	41	12	2	3	24	18	65	30
10:00		12	5			9	6				
10:15		7	0			4	0				
10:30		5	1			8	1				
10:45		7	3	31	9	16	1	37	8	68	17
11:00		12	1			3	3				
11:15		10	0			6	3				
11:30		9	2			8	0				
11:45		10	1	41	4	9	2	26	8	67	12
Total		572	701	572	701	581	662	581	662	1153	1363
Combined Total		1273		1273		1243		1243		2516	
AM Peak	-	07:15	-	-	-	07:00	-	-	-	-	-
Vol.	-	278	-	-	-	387	-	-	-	-	-
P.H.F.		0.632				0.658					
PM Peak	-	-	03:15	-	-	-	02:45	-	-	-	-
Vol.	-	-	282	-	-	-	146	-	-	-	-
P.H.F.			0.555				0.730				
Percentage		44.9%	55.1%			46.7%	53.3%				
ADT/AADT		ADT 2,516		AADT 2,516							

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
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email: counts@countsunlimited.com

City of Menifee
Tupelo Street
B/ Linda Lee Drive - Sherman Road
24 Hour Directional Volume Count

MEN002
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		0	8			1	7				
12:15		1	10			2	8				
12:30		1	13			1	10				
12:45		2	9	4	40	1	10	5	35	9	75
01:00		0	8			1	9				
01:15		1	18			0	10				
01:30		0	12			1	14				
01:45		0	10	1	48	0	18	2	51	3	99
02:00		1	13			1	13				
02:15		1	32			0	18				
02:30		2	9			1	26				
02:45		0	9	4	63	0	**37**	2	94	6	157
03:00		0	**53**			0	**50**				
03:15		0	**172**			0	**44**				
03:30		1	**84**			0	**29**				
03:45		4	**31**	5	340	0	30	0	153	5	493
04:00		1	27			1	23				
04:15		2	29			0	25				
04:30		2	27			1	24				
04:45		4	26	9	109	0	17	2	89	11	198
05:00		4	16			2	23				
05:15		1	27			3	21				
05:30		5	18			2	14				
05:45		5	15	15	76	3	9	10	67	25	143
06:00		4	12			3	18				
06:15		12	17			5	20				
06:30		15	10			10	14				
06:45		18	9	49	48	**38**	17	56	69	105	117
07:00		**39**	5			**85**	5				
07:15		**84**	10			**189**	11				
07:30		**120**	10			**101**	10				
07:45		**76**	6	319	31	32	6	407	32	726	63
08:00		12	4			8	2				
08:15		16	3			14	4				
08:30		22	5			10	1				
08:45		15	2	65	14	5	3	37	10	102	24
09:00		10	4			8	1				
09:15		7	1			7	6				
09:30		8	5			4	4				
09:45		8	6	33	16	6	2	25	13	58	29
10:00		7	0			3	2				
10:15		6	0			5	1				
10:30		7	2			8	1				
10:45		7	1	27	3	7	3	23	7	50	10
11:00		9	0			5	2				
11:15		6	0			7	1				
11:30		8	2			8	0				
11:45		13	0	36	2	9	2	29	5	65	7
Total		567	790	567	790	598	625	598	625	1165	1415
Combined Total		1357		1357		1223		1223		2580	
AM Peak	-	07:00	-	-	-	06:45	-	-	-	-	-
Vol.	-	319	-	-	-	413	-	-	-	-	-
P.H.F.		0.665				0.546					
PM Peak	-	-	03:00	-	-	-	02:45	-	-	-	-
Vol.	-	-	340	-	-	-	160	-	-	-	-
P.H.F.			0.494				0.800				
Percentage		41.8%	58.2%			48.9%	51.1%				
ADT/AADT		ADT 2,580		AADT 2,580							

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
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City of Menifee
Sherman Road
B/ Tupelo Street - Garbani Road
24 Hour Directional Volume Count

MEN003
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		2	14			0	7				
12:15		4	11			0	13				
12:30		1	27			2	1				
12:45		0	9	7	61	0	10	2	31	9	92
01:00		3	11			3	9				
01:15		2	9			1	12				
01:30		1	10			0	14				
01:45		0	11	6	41	0	13	4	48	10	89
02:00		2	10			0	8				
02:15		0	12			1	19				
02:30		1	24			2	13				
02:45		1	**27**	4	73	0	12	3	52	7	125
03:00		0	**35**			0	7				
03:15		0	**64**			1	**93**				
03:30		0	**32**			0	**106**				
03:45		2	22	2	153	3	**41**	4	247	6	400
04:00		3	33			0	**21**				
04:15		4	26			0	24				
04:30		3	27			0	26				
04:45		4	21	14	107	0	20	0	91	14	198
05:00		4	25			2	21				
05:15		2	15			4	8				
05:30		6	17			2	27				
05:45		5	16	17	73	4	12	12	68	29	141
06:00		1	13			5	10				
06:15		8	20			10	15				
06:30		11	21			12	9				
06:45		23	18	43	72	12	4	39	38	82	110
07:00		**63**	15			19	6				
07:15		**148**	10			**47**	6				
07:30		**158**	5			**75**	7				
07:45		**60**	14	429	44	**96**	6	237	25	666	69
08:00		21	10			**29**	1				
08:15		18	2			9	0				
08:30		19	4			18	4				
08:45		4	3	62	19	19	2	75	7	137	26
09:00		3	1			9	2				
09:15		10	5			10	2				
09:30		4	7			7	5				
09:45		5	2	22	15	6	3	32	12	54	27
10:00		12	3			12	5				
10:15		2	0			5	0				
10:30		9	1			6	2				
10:45		14	2	37	6	11	1	34	8	71	14
11:00		3	2			6	0				
11:15		8	3			8	0				
11:30		11	0			5	1				
11:45		3	2	25	7	8	1	27	2	52	9
Total		668	671	668	671	469	629	469	629	1137	1300
Combined Total		1339		1339		1098		1098		2437	
AM Peak	-	07:00	-	-	-	07:15	-	-	-	-	-
Vol.	-	429	-	-	-	247	-	-	-	-	-
P.H.F.		0.679				0.643					
PM Peak	-	-	02:45	-	-	-	03:15	-	-	-	-
Vol.	-	-	158	-	-	-	261	-	-	-	-
P.H.F.			0.617				0.616				
Percentage		49.9%	50.1%			42.7%	57.3%				
ADT/AADT		ADT 2,437		AADT 2,437							

Wednesday, December 12, 2018 Location: Menifee PROJECT:

ADT1 Haun north of La Piedra. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	7		6					12:00	176		102				
0:15	6		15					12:15	142		107				
0:30	2		6					12:30	132		110				
0:45	8	23	0	27			50	12:45	154	604	90	409			1013
1:00	2		5					13:00	167		133				
1:15	3		0					13:15	178		110				
1:30	2		0					13:30	164		122				
1:45	2	9	4	9			18	13:45	178	687	113	478			1165
2:00	4		3					14:00	165		101				
2:15	5		2					14:15	171		124				
2:30	2		0					14:30	175		117				
2:45	5	16	0	5			21	14:45	159	670	147	489			1159
3:00	8		2					15:00	145		199				
3:15	10		0					15:15	167		151				
3:30	13		4					15:30	156		107				
3:45	12	43	3	9			52	15:45	178	646	123	580			1226
4:00	15		3					16:00	164		97				
4:15	16		7					16:15	168		96				
4:30	13		5					16:30	143		97				
4:45	14	58	6	21			79	16:45	151	626	122	412			1038
5:00	15		4					17:00	134		123				
5:15	23		9					17:15	156		120				
5:30	24		9					17:30	145		98				
5:45	26	88	20	42			130	17:45	136	571	96	437			1008
6:00	31		13					18:00	145		97				
6:15	38		19					18:15	154		111				
6:30	37		41					18:30	134		101				
6:45	41	147	43	116			263	18:45	129	562	93	402			964
7:00	48		69					19:00	131		79				
7:15	78		147					19:15	117		86				
7:30	123		206					19:30	119		86				
7:45	132	381	162	584			965	19:45	110	477	66	317			794
8:00	167		120					20:00	98		70				
8:15	142		77					20:15	67		65				
8:30	132		80					20:30	76		72				
8:45	100	541	71	348			889	20:45	54	295	53	260			555
9:00	97		53					21:00	45		61				
9:15	78		63					21:15	63		51				
9:30	134		54					21:30	54		35				
9:45	112	421	52	222			643	21:45	43	205	36	183			388
10:00	98		77					22:00	35		37				
10:15	103		69					22:15	23		28				
10:30	113		64					22:30	18		15				
10:45	132	446	81	291			737	22:45	17	93	24	104			197
11:00	105		84					23:00	13		13				
11:15	145		83					23:15	14		5				
11:30	123		102					23:30	9		9				
11:45	145	518	94	363			881	23:45	10	46	12	39			85
Total Vol.		2691		2037			**4728**			5482		4110			**9592**

Daily Totals

NB	SB	EB	WB	Combined
8173	6147			**14320**

	AM			PM		
Split %	56.9%	43.1%	**33.0%**	57.2%	42.8%	**67.0%**
Peak Hour	11:45	7:15	**7:15**	13:45	14:30	**14:30**
Volume	595	635	**1135**	689	614	**1260**
P.H.F.	0.85	0.77	**0.86**	0.96	0.77	**0.92**

cs@aimtd.com Tell. 714 253 7888

Wednesday, December 12, 2018 Location: Menifee PROJECT:

ADT2 Haun south of La Piedra. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	5		11					12:00	166		112				
0:15	6		17					12:15	143		119				
0:30	0		7					12:30	151		153				
0:45	7	18	0	35			53	12:45	149	609	120	504			1113
1:00	4		9					13:00	171		124				
1:15	2		0					13:15	190		139				
1:30	2		6					13:30	152		139				
1:45	0	8	5	20			28	13:45	163	676	160	562			1238
2:00	4		4					14:00	167		136				
2:15	0		5					14:15	162		136				
2:30	0		2					14:30	187		134				
2:45	5	9	5	16			25	14:45	172	688	158	564			1252
3:00	4		8					15:00	159		159				
3:15	0		4					15:15	178		147				
3:30	11		5					15:30	188		130				
3:45	13	28	8	25			53	15:45	195	720	115	551			1271
4:00	9		20					16:00	177		125				
4:15	11		7					16:15	155		110				
4:30	11		10					16:30	154		119				
4:45	14	45	7	44			89	16:45	138	624	139	493			1117
5:00	16		16					17:00	145		118				
5:15	32		10					17:15	172		121				
5:30	30		15					17:30	144		127				
5:45	33	111	35	76			187	17:45	147	608	109	475			1083
6:00	37		29					18:00	152		135				
6:15	45		40					18:15	183		131				
6:30	50		43					18:30	138		106				
6:45	56	188	72	184			372	18:45	144	617	106	478			1095
7:00	57		113					19:00	112		92				
7:15	97		172					19:15	123		86				
7:30	164		197					19:30	112		83				
7:45	152	470	151	633			1103	19:45	105	452	75	336			788
8:00	190		122					20:00	79		61				
8:15	136		97					20:15	72		82				
8:30	95		95					20:30	56		81				
8:45	116	537	85	399			936	20:45	54	261	60	284			545
9:00	108		84					21:00	67		69				
9:15	86		92					21:15	41		51				
9:30	105		70					21:30	35		39				
9:45	94	393	104	350			743	21:45	21	164	24	183			347
10:00	113		108					22:00	29		36				
10:15	92		116					22:15	33		21				
10:30	126		85					22:30	13		20				
10:45	134	465	118	427			892	22:45	19	94	22	99			193
11:00	117		107					23:00	10		21				
11:15	162		98					23:15	10		4				
11:30	149		120					23:30	7		12				
11:45	163	591	106	431			1022	23:45	9	36	10	47			83
Total Vol.		2863		2640			**5503**			5549		4576			**10125**

Daily Totals

NB	SB	EB	WB	Combined
8412	7216			**15628**

	AM			PM		
Split %	52.0%	48.0%	**35.2%**	54.8%	45.2%	**64.8%**
Peak Hour	7:30	7:15	**7:15**	15:15	14:30	**14:30**
Volume	642	642	**1245**	738	598	**1294**
P.H.F.	0.84	0.81	**0.86**	0.97	0.94	**0.98**

cs@aimtd.com Tell. 714 253 7888

Counts Unlimited, Inc.

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City of Menifee
Haun Road
S/ Craig Avenue
24 Hour Directional Volume Count

MEN005
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		7	101			4	65				
12:15		4	85			1	78				
12:30		2	89			5	87				
12:45		5	114	18	389	1	84	11	314	29	703
01:00		7	87			0	72				
01:15		3	105			1	84				
01:30		4	101			2	95				
01:45		8	117	22	410	2	77	5	328	27	738
02:00		2	112			2	89				
02:15		1	113			3	102				
02:30		2	114			3	**112**				
02:45		2	110	7	449	3	**103**	11	406	18	855
03:00		0	**132**			3	**120**				
03:15		7	**161**			2	**110**				
03:30		3	**156**			3	110				
03:45		1	**122**	11	571	6	78	14	418	25	989
04:00		0	116			5	83				
04:15		7	113			17	82				
04:30		8	121			21	93				
04:45		8	126	23	476	29	99	72	357	95	833
05:00		10	122			18	88				
05:15		9	120			11	89				
05:30		17	116			29	85				
05:45		19	146	55	504	26	84	84	346	139	850
06:00		12	112			27	83				
06:15		22	105			39	77				
06:30		27	95			52	81				
06:45		46	90	107	402	50	66	168	307	275	709
07:00		**99**	91			54	66				
07:15		**128**	68			**123**	51				
07:30		**103**	58			**119**	57				
07:45		**100**	76	430	293	**78**	45	374	219	804	512
08:00		62	54			**60**	45				
08:15		46	52			65	39				
08:30		51	33			60	47				
08:45		61	45	220	184	73	35	258	166	478	350
09:00		60	31			58	35				
09:15		76	29			63	30				
09:30		57	34			63	22				
09:45		72	25	265	119	58	25	242	112	507	231
10:00		69	24			44	21				
10:15		61	28			66	8				
10:30		64	17			70	10				
10:45		98	21	292	90	62	6	242	45	534	135
11:00		91	14			71	10				
11:15		77	12			76	5				
11:30		88	14			87	6				
11:45		85	5	341	45	76	7	310	28	651	73
Total		1791	3932	1791	3932	1791	3046	1791	3046	3582	6978
Combined Total		5723		5723		4837		4837		10560	
AM Peak	-	07:00	-	-	-	07:15	-	-	-	-	-
Vol.	-	430	-	-	-	380	-	-	-	-	-
P.H.F.		0.840				0.772					
PM Peak	-	-	03:00	-	-	-	02:30	-	-	-	-
Vol.	-	-	571	-	-	-	445	-	-	-	-
P.H.F.			0.887				0.927				
Percentage		31.3%	68.7%			37.0%	63.0%				
ADT/AADT		ADT 10,560		AADT 10,560							

Counts Unlimited, Inc.

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City of Menifee
Haun Road
S/ Wickerd Rd
24 Hour Directional Volume Count

MEN006
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		13	91			5	68				
12:15		7	102			3	90				
12:30		3	91			4	87				
12:45		7	123	30	407	2	103	14	348	44	755
01:00		6	103			1	80				
01:15		6	109			1	87				
01:30		4	128			2	94				
01:45		8	112	24	452	3	95	7	356	31	808
02:00		3	129			4	82				
02:15		3	113			2	126				
02:30		3	**132**			6	88				
02:45		2	**138**	11	512	1	113	13	409	24	921
03:00		0	**165**			5	**121**				
03:15		6	**157**			4	**169**				
03:30		1	124			6	**181**				
03:45		3	133	10	579	9	**153**	24	624	34	1203
04:00		0	126			9	101				
04:15		5	145			13	104				
04:30		2	139			35	109				
04:45		11	139	18	549	40	109	97	423	115	972
05:00		4	150			26	130				
05:15		8	131			25	83				
05:30		10	134			31	115				
05:45		15	144	37	559	30	88	112	416	149	975
06:00		18	145			38	74				
06:15		26	121			50	105				
06:30		35	108			50	72				
06:45		55	109	134	483	70	84	208	335	342	818
07:00		**141**	107			83	54				
07:15		**252**	89			**130**	63				
07:30		**190**	61			**204**	59				
07:45		**96**	78	679	335	**194**	56	611	232	1290	567
08:00		73	65			**103**	41				
08:15		43	51			93	48				
08:30		61	54			94	49				
08:45		48	42	225	212	81	38	371	176	596	388
09:00		59	34			77	32				
09:15		82	38			65	29				
09:30		60	37			76	31				
09:45		62	35	263	144	62	22	280	114	543	258
10:00		72	23			61	30				
10:15		69	27			60	13				
10:30		80	28			79	15				
10:45		81	13	302	91	62	7	262	65	564	156
11:00		89	19			65	9				
11:15		88	15			78	9				
11:30		81	8			84	5				
11:45		89	15	347	57	88	6	315	29	662	86
Total		2080	4380	2080	4380	2314	3527	2314	3527	4394	7907
Combined Total		6460		6460		5841		5841		12301	
AM Peak	-	07:00	-	-	-	07:15	-	-	-	-	-
Vol.	-	679	-	-	-	631	-	-	-	-	-
P.H.F.		0.674				0.773					
PM Peak	-	-	02:30	-	-	-	03:00	-	-	-	-
Vol.	-	-	592	-	-	-	624	-	-	-	-
P.H.F.			0.897				0.862				
Percentage		32.2%	67.8%			39.6%	60.4%				
ADT/AADT		ADT 12,301		AADT 12,301							

Counts Unlimited, Inc.

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City of Menifee
Bradley Road
B/ Newport Road - Rim Creek Path
24 Hour Directional Volume Count

MEN007
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		5	72			14	54				
12:15		10	52			12	58				
12:30		3	57			6	37				
12:45		6	85	24	266	8	61	40	210	64	476
01:00		6	71			7	70				
01:15		3	70			3	55				
01:30		3	82			5	75				
01:45		3	60	15	283	6	99	21	299	36	582
02:00		6	77			6	103				
02:15		3	158			4	80				
02:30		2	97			4	85				
02:45		5	92	16	424	0	**126**	14	394	30	818
03:00		0	87			2	**138**				
03:15		9	**144**			3	**133**				
03:30		10	**223**			1	**149**				
03:45		7	**183**	26	637	1	104	7	524	33	1161
04:00		12	**111**			3	88				
04:15		18	109			10	92				
04:30		27	82			4	95				
04:45		31	100	88	402	8	91	25	366	113	768
05:00		42	99			8	87				
05:15		28	79			8	99				
05:30		35	99			16	108				
05:45		31	84	136	361	11	100	43	394	179	755
06:00		47	95			20	81				
06:15		43	61			21	95				
06:30		60	76			35	84				
06:45		49	69	199	301	52	67	128	327	327	628
07:00		82	50			**119**	73				
07:15		**122**	40			**186**	54				
07:30		**233**	55			**209**	68				
07:45		**221**	46	658	191	**112**	53	626	248	1284	439
08:00		**152**	38			75	67				
08:15		109	30			68	47				
08:30		89	33			65	41				
08:45		96	22	446	123	43	40	251	195	697	318
09:00		66	29			40	39				
09:15		54	22			29	35				
09:30		45	17			23	32				
09:45		51	17	216	85	39	35	131	141	347	226
10:00		62	23			39	26				
10:15		53	7			48	17				
10:30		65	12			47	21				
10:45		64	15	244	57	55	17	189	81	433	138
11:00		62	8			59	23				
11:15		75	6			70	11				
11:30		84	10			69	13				
11:45		50	10	271	34	70	12	268	59	539	93
Total		2339	3164	2339	3164	1743	3238	1743	3238	4082	6402
Combined Total		5503		5503		4981		4981		10484	
AM Peak	-	07:15	-	-	-	07:00	-	-	-	-	-
Vol.	-	728	-	-	-	626	-	-	-	-	-
P.H.F.		0.781				0.749					
PM Peak	-	-	03:15	-	-	-	02:45	-	-	-	-
Vol.	-	-	661	-	-	-	546	-	-	-	-
P.H.F.			0.741				0.916				
Percentage		42.5%	57.5%			35.0%	65.0%				
ADT/AADT		ADT 10,484		AADT 10,484							

Counts Unlimited, Inc.

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City of Menifee
Bradley Road
B/ Holland Road - Craig Avenue
24 Hour Directional Volume Count

MEN008
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	24			5	29				
12:15		1	12			2	26				
12:30		1	19			0	13				
12:45		0	55	3	110	0	22	7	90	10	200
01:00		4	22			4	34				
01:15		0	56			0	27				
01:30		0	34			1	28				
01:45		0	33	4	145	3	27	8	116	12	261
02:00		1	35			2	31				
02:15		2	67			2	59				
02:30		1	43			1	57				
02:45		0	34	4	179	0	**67**	5	214	9	393
03:00		0	35			0	**79**				
03:15		1	**128**			0	**78**				
03:30		2	**139**			2	**67**				
03:45		5	**113**	8	415	0	61	2	285	10	700
04:00		4	**82**			0	49				
04:15		1	60			3	57				
04:30		5	65			1	78				
04:45		3	73	13	280	1	58	5	242	18	522
05:00		6	42			2	44				
05:15		5	40			2	42				
05:30		5	72			8	43				
05:45		9	41	25	195	5	33	17	162	42	357
06:00		10	41			10	34				
06:15		11	26			7	31				
06:30		17	23			28	19				
06:45		33	17	71	107	66	9	111	93	182	200
07:00		96	24			**148**	19				
07:15		**137**	23			**233**	14				
07:30		**148**	35			**217**	12				
07:45		**147**	35	528	117	**229**	15	827	60	1355	177
08:00		**104**	9			35	10				
08:15		46	12			51	6				
08:30		46	7			57	8				
08:45		56	5	252	33	26	8	169	32	421	65
09:00		20	6			18	8				
09:15		16	6			16	11				
09:30		18	11			12	5				
09:45		11	4	65	27	16	6	62	30	127	57
10:00		19	2			11	5				
10:15		10	1			11	2				
10:30		15	2			13	2				
10:45		25	2	69	7	24	2	59	11	128	18
11:00		21	2			12	3				
11:15		15	1			21	1				
11:30		20	6			24	0				
11:45		49	0	105	9	16	1	73	5	178	14
Total		1147	1624	1147	1624	1345	1340	1345	1340	2492	2964
Combined Total		2771		2771		2685		2685		5456	
AM Peak	-	07:15	-	-	-	07:00	-	-	-	-	-
Vol.	-	536	-	-	-	827	-	-	-	-	-
P.H.F.		0.905				0.887					
PM Peak	-	-	03:15	-	-	-	02:45	-	-	-	-
Vol.	-	-	462	-	-	-	291	-	-	-	-
P.H.F.			0.831				0.921				
Percentage		41.4%	58.6%			50.1%	49.9%				
ADT/AADT		ADT 5,456		AADT 5,456							

Counts Unlimited, Inc.

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City of Menifee
Scott Road
B/ Howard Way - Haun Road
24 Hour Directional Volume Count

MEN009
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		11	87			14	97				
12:15		14	117			9	91				
12:30		7	80			10	111				
12:45		12	127	44	411	11	103	44	402	88	813
01:00		7	98			8	98				
01:15		5	119			5	92				
01:30		7	112			9	103				
01:45		9	135	28	464	11	109	33	402	61	866
02:00		10	125			6	98				
02:15		6	126			6	122				
02:30		11	100			4	127				
02:45		8	134	35	485	6	130	22	477	57	962
03:00		3	132			8	125				
03:15		11	143			18	140				
03:30		12	104			15	**154**				
03:45		18	89	44	468	26	**166**	67	585	111	1053
04:00		13	135			35	**151**				
04:15		27	98			38	**145**				
04:30		37	109			31	150				
04:45		43	115	120	457	40	156	144	602	264	1059
05:00		33	118			49	139				
05:15		43	**124**			47	148				
05:30		52	**149**			48	137				
05:45		54	**118**	182	509	46	159	190	583	372	1092
06:00		72	**125**			50	125				
06:15		71	103			58	114				
06:30		107	100			77	103				
06:45		**118**	89	368	417	94	106	279	448	647	865
07:00		**122**	74			73	84				
07:15		**120**	83			77	83				
07:30		**140**	54			**104**	81				
07:45		118	70	500	281	**151**	91	405	339	905	620
08:00		101	75			**123**	66				
08:15		118	55			**110**	72				
08:30		113	47			84	46				
08:45		92	65	424	242	105	58	422	242	846	484
09:00		107	61			88	58				
09:15		117	44			107	54				
09:30		91	49			69	34				
09:45		103	60	418	214	74	38	338	184	756	398
10:00		98	33			94	43				
10:15		123	25			71	37				
10:30		86	36			95	29				
10:45		115	22	422	116	86	25	346	134	768	250
11:00		106	18			77	23				
11:15		96	21			100	26				
11:30		95	23			113	23				
11:45		113	17	410	79	93	16	383	88	793	167
Total		2995	4143	2995	4143	2673	4486	2673	4486	5668	8629
Combined Total		7138		7138		7159		7159		14297	
AM Peak	-	06:45	-	-	-	07:30	-	-	-	-	-
Vol.	-	500	-	-	-	488	-	-	-	-	-
P.H.F.		0.893				0.808					
PM Peak	-	-	05:15	-	-	-	03:30	-	-	-	-
Vol.	-	-	516	-	-	-	616	-	-	-	-
P.H.F.			0.866				0.928				
Percentage		42.0%	58.0%			37.3%	62.7%				
ADT/AADT		ADT 14,297		AADT 14,297							

Counts Unlimited, Inc.

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City of Menifee
Scott Road
B/ Haun Road - Bailey Park Road
24 Hour Directional Volume Count

MEN010
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		16	163			26	179				
12:15		15	157			17	177				
12:30		10	168			10	185				
12:45		13	179	54	667	17	203	70	744	124	1411
01:00		10	175			14	195				
01:15		7	188			12	189				
01:30		7	195			13	196				
01:45		13	191	37	749	20	195	59	775	96	1524
02:00		11	190			4	189				
02:15		7	206			9	220				
02:30		16	209			7	238				
02:45		12	221	46	826	8	220	28	867	74	1693
03:00		9	191			12	233				
03:15		13	227			20	270				
03:30		13	136			19	230				
03:45		24	**224**	59	778	22	**279**	73	1012	132	1790
04:00		21	**252**			39	**268**				
04:15		31	**184**			34	**254**				
04:30		70	**194**			29	**257**				
04:45		70	209	192	839	46	268	148	1047	340	1886
05:00		60	233			60	258				
05:15		62	193			45	258				
05:30		69	212			62	250				
05:45		82	186	273	824	57	260	224	1026	497	1850
06:00		85	175			78	251				
06:15		102	182			82	213				
06:30		136	175			121	202				
06:45		175	141	498	673	136	202	417	868	915	1541
07:00		168	129			186	173				
07:15		**197**	128			**285**	162				
07:30		**253**	112			**277**	119				
07:45		**268**	103	886	472	**223**	137	971	591	1857	1063
08:00		**226**	114			**189**	123				
08:15		171	86			133	115				
08:30		187	89			135	76				
08:45		153	96	737	385	147	81	604	395	1341	780
09:00		164	84			154	96				
09:15		153	73			164	78				
09:30		148	75			139	76				
09:45		151	68	616	300	134	67	591	317	1207	617
10:00		139	57			143	63				
10:15		157	39			142	59				
10:30		144	41			147	48				
10:45		158	27	598	164	153	37	585	207	1183	371
11:00		142	28			159	33				
11:15		165	26			150	44				
11:30		162	25			191	33				
11:45		181	28	650	107	164	35	664	145	1314	252
Total		4646	6784	4646	6784	4434	7994	4434	7994	9080	14778
Combined Total		11430		11430		12428		12428		23858	
AM Peak	-	07:15	-	-	-	07:15	-	-	-	-	-
Vol.	-	944	-	-	-	974	-	-	-	-	-
P.H.F.		0.881				0.854					
PM Peak	-	-	03:45	-	-	-	03:45	-	-	-	-
Vol.	-	-	854	-	-	-	1058	-	-	-	-
P.H.F.			0.847				0.948				
Percentage		40.6%	59.4%			35.7%	64.3%				
ADT/AADT		ADT 23,858		AADT 23,858							

Counts Unlimited, Inc.

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City of Menifee
Scott Road
B/ Interstate 215 Northbound - Antelope Road
24 Hour Directional Volume Count

MEN011
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		40	233			27	230				
12:15		59	227			20	263				
12:30		33	268			23	264				
12:45		31	266	163	994	19	242	89	999	252	1993
01:00		26	277			13	241				
01:15		30	251			13	228				
01:30		21	285			17	252				
01:45		26	291	103	1104	20	251	63	972	166	2076
02:00		24	322			13	234				
02:15		20	317			21	278				
02:30		25	314			10	291				
02:45		30	294	99	1247	24	293	68	1096	167	2343
03:00		21	310			24	**334**				
03:15		12	286			37	**337**				
03:30		13	**339**			51	**286**				
03:45		15	**323**	61	1258	62	**343**	174	1300	235	2558
04:00		27	**329**			92	274				
04:15		20	**314**			104	298				
04:30		28	322			167	283				
04:45		38	327	113	1292	180	285	543	1140	656	2432
05:00		42	315			186	293				
05:15		48	312			171	302				
05:30		58	318			191	284				
05:45		82	313	230	1258	192	265	740	1144	970	2402
06:00		108	306			223	240				
06:15		128	315			242	215				
06:30		153	325			271	230				
06:45		222	269	611	1215	321	188	1057	873	1668	2088
07:00		224	271			308	178				
07:15		216	272			**346**	165				
07:30		224	266			**332**	146				
07:45		**250**	236	914	1045	**324**	152	1310	641	2224	1686
08:00		**249**	237			**309**	142				
08:15		**230**	215			243	135				
08:30		**229**	200			242	87				
08:45		225	200	933	852	276	111	1070	475	2003	1327
09:00		219	181			286	96				
09:15		192	169			287	110				
09:30		194	191			256	83				
09:45		226	148	831	689	243	84	1072	373	1903	1062
10:00		220	122			244	71				
10:15		201	115			247	76				
10:30		239	104			260	59				
10:45		214	86	874	427	247	62	998	268	1872	695
11:00		224	85			258	44				
11:15		217	71			271	41				
11:30		224	76			272	33				
11:45		249	73	914	305	256	34	1057	152	1971	457
Total		5846	11686	5846	11686	8241	9433	8241	9433	14087	21119
Combined Total		17532		17532		17674		17674		35206	
AM Peak	-	07:45	-	-	-	07:15	-	-	-	-	-
Vol.	-	958	-	-	-	1311	-	-	-	-	-
P.H.F.		0.958				0.947					
PM Peak	-	-	03:30	-	-	-	03:00	-	-	-	-
Vol.	-	-	1305	-	-	-	1300	-	-	-	-
P.H.F.			0.962				0.948				
Percentage		33.3%	66.7%			46.6%	53.4%				
ADT/AADT		ADT 35,206		AADT 35,206							

Counts Unlimited, Inc.

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City of Menifee
Newport Road
B/ Menifee Road - Laguna Vista Drive
24 Hour Directional Volume Count

MEN015
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		57	185			27	217				
12:15		56	255			28	231				
12:30		36	206			13	241				
12:45		34	228	183	874	20	216	88	905	271	1779
01:00		27	212			16	206				
01:15		18	216			13	239				
01:30		22	263			12	259				
01:45		15	253	82	944	12	231	53	935	135	1879
02:00		25	263			17	219				
02:15		17	287			12	299				
02:30		15	276			15	269				
02:45		16	287	73	1113	23	265	67	1052	140	2165
03:00		21	271			31	283				
03:15		17	253			43	245				
03:30		18	**323**			69	258				
03:45		16	**317**	72	1164	85	274	228	1060	300	2224
04:00		21	**328**			113	275				
04:15		20	**354**			144	273				
04:30		30	290			190	288				
04:45		34	336	105	1308	195	**300**	642	1136	747	2444
05:00		55	307			131	**309**				
05:15		76	326			167	**333**				
05:30		82	353			208	**312**				
05:45		113	297	326	1283	179	298	685	1252	1011	2535
06:00		138	329			202	250				
06:15		166	316			247	237				
06:30		188	264			302	185				
06:45		**226**	248	718	1157	**322**	161	1073	833	1791	1990
07:00		**277**	273			**322**	161				
07:15		**275**	228			**379**	135				
07:30		**297**	244			**390**	98				
07:45		218	206	1067	951	294	117	1385	511	2452	1462
08:00		224	196			330	106				
08:15		215	210			331	110				
08:30		220	163			322	126				
08:45		185	172	844	741	268	73	1251	415	2095	1156
09:00		193	173			217	85				
09:15		168	174			224	91				
09:30		196	123			262	85				
09:45		170	114	727	584	230	72	933	333	1660	917
10:00		191	119			230	57				
10:15		194	100			221	41				
10:30		200	86			229	55				
10:45		175	92	760	397	206	58	886	211	1646	608
11:00		200	73			250	31				
11:15		214	58			238	38				
11:30		248	46			242	29				
11:45		186	69	848	246	221	29	951	127	1799	373
Total		5805	10762	5805	10762	8242	8770	8242	8770	14047	19532
Combined Total		16567		16567		17012		17012		33579	
AM Peak	-	06:45	-	-	-	06:45	-	-	-	-	-
Vol.	-	1075	-	-	-	1413	-	-	-	-	-
P.H.F.		0.905				0.906					
PM Peak	-	-	03:30	-	-	-	04:45	-	-	-	-
Vol.	-	-	1322	-	-	-	1254	-	-	-	-
P.H.F.			0.934				0.941				
Percentage		35.0%	65.0%			48.4%	51.6%				
ADT/AADT		ADT 33,579		AADT 33,579							

Counts Unlimited, Inc.

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City of Menifee
Newport Road
B/ Bradley Road - Sherman Road
24 Hour Directional Volume Count

MEN013
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		37	357			43	295				
12:15		40	381			42	262				
12:30		29	373			41	305				
12:45		29	390	135	1501	34	292	160	1154	295	2655
01:00		19	392			36	337				
01:15		21	403			26	300				
01:30		24	370			24	328				
01:45		21	444	85	1609	25	402	111	1367	196	2976
02:00		20	390			23	340				
02:15		22	423			21	322				
02:30		16	458			21	368				
02:45		20	473	78	1744	15	**391**	80	1421	158	3165
03:00		14	**463**			26	**422**				
03:15		19	**479**			32	**414**				
03:30		39	**475**			37	**445**				
03:45		44	**483**	116	1900	64	385	159	1666	275	3566
04:00		34	439			70	396				
04:15		75	433			59	405				
04:30		103	430			77	385				
04:45		122	458	334	1760	75	414	281	1600	615	3360
05:00		174	392			108	370				
05:15		129	375			69	416				
05:30		157	376			97	371				
05:45		162	358	622	1501	126	367	400	1524	1022	3025
06:00		190	334			135	381				
06:15		213	329			158	366				
06:30		241	299			208	362				
06:45		275	303	919	1265	219	288	720	1397	1639	2662
07:00		285	258			247	287				
07:15		**403**	249			**315**	302				
07:30		**426**	215			**309**	298				
07:45		**418**	195	1532	917	**274**	211	1145	1098	2677	2015
08:00		**324**	206			**303**	256				
08:15		346	193			248	231				
08:30		271	189			274	199				
08:45		340	148	1281	736	258	220	1083	906	2364	1642
09:00		324	149			264	164				
09:15		253	144			212	184				
09:30		267	131			255	181				
09:45		306	108	1150	532	258	119	989	648	2139	1180
10:00		275	129			250	126				
10:15		311	97			271	133				
10:30		290	83			276	114				
10:45		328	62	1204	371	316	95	1113	468	2317	839
11:00		336	70			258	68				
11:15		335	49			322	72				
11:30		354	50			282	54				
11:45		329	43	1354	212	313	81	1175	275	2529	487
Total		8810	14048	8810	14048	7416	13524	7416	13524	16226	27572
Combined Total		22858		22858		20940		20940		43798	
AM Peak	-	07:15	-	-	-	07:15	-	-	-	-	-
Vol.	-	1571	-	-	-	1201	-	-	-	-	-
P.H.F.		0.922				0.953					
PM Peak	-	-	03:00	-	-	-	02:45	-	-	-	-
Vol.	-	-	1900	-	-	-	1672	-	-	-	-
P.H.F.			0.983				0.939				
Percentage		38.5%	61.5%			35.4%	64.6%				
ADT/AADT		ADT 43,798		AADT 43,798							

Counts Unlimited, Inc.

PO Box 1178
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City of Menifee
Newport Road
B/ Westlink Drive - Menifee Lakes Drive
24 Hour Directional Volume Count

MEN014
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		66	282			39	283				
12:15		75	294			28	327				
12:30		55	308			35	298				
12:45		48	270	244	1154	20	302	122	1210	366	2364
01:00		35	325			22	297				
01:15		31	296			17	262				
01:30		25	381			20	366				
01:45		30	374	121	1376	18	312	77	1237	198	2613
02:00		19	373			14	290				
02:15		30	403			20	384				
02:30		15	344			19	398				
02:45		20	398	84	1518	25	362	78	1434	162	2952
03:00		29	368			35	323				
03:15		30	401			45	391				
03:30		16	415			66	338				
03:45		22	**427**	97	1611	85	322	231	1374	328	2985
04:00		17	**479**			117	360				
04:15		24	**452**			141	345				
04:30		21	**447**			199	**365**				
04:45		41	381	103	1759	256	**384**	713	1454	816	3213
05:00		44	461			238	**360**				
05:15		73	444			179	**415**				
05:30		84	418			228	363				
05:45		104	469	305	1792	265	380	910	1518	1215	3310
06:00		141	384			251	358				
06:15		168	450			275	311				
06:30		209	391			305	282				
06:45		222	382	740	1607	395	241	1226	1192	1966	2799
07:00		**291**	320			408	202				
07:15		**357**	350			**473**	230				
07:30		**374**	327			**509**	177				
07:45		**350**	301	1372	1298	**496**	134	1886	743	3258	2041
08:00		260	286			**409**	140				
08:15		269	264			412	119				
08:30		239	293			373	142				
08:45		229	246	997	1089	413	126	1607	527	2604	1616
09:00		263	238			332	95				
09:15		202	208			322	104				
09:30		234	213			305	116				
09:45		231	172	930	831	383	96	1342	411	2272	1242
10:00		251	156			297	84				
10:15		237	176			291	69				
10:30		255	111			317	51				
10:45		262	122	1005	565	336	68	1241	272	2246	837
11:00		236	131			285	62				
11:15		294	80			340	47				
11:30		285	71			303	25				
11:45		293	92	1108	374	321	40	1249	174	2357	548
Total		7106	14974	7106	14974	10682	11546	10682	11546	17788	26520
Combined Total		22080		22080		22228		22228		44308	
AM Peak	-	07:00	-	-	-	07:15	-	-	-	-	-
Vol.	-	1372	-	-	-	1887	-	-	-	-	-
P.H.F.		0.917				0.927					
PM Peak	-	-	03:45	-	-	-	04:30	-	-	-	-
Vol.	-	-	1805	-	-	-	1524	-	-	-	-
P.H.F.			0.942				0.918				
Percentage		32.2%	67.8%			48.1%	51.9%				
ADT/AADT		ADT 44,308		AADT 44,308							

Counts Unlimited, Inc.

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City of Menifee
Newport Road
B/ Winter Hawk Road - Bradley Road
24 Hour Directional Volume Count

MEN012
Site Code: 075-18011

Start Time	11-Jan-18 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		30	260			25	224				
12:15		34	272			31	244				
12:30		26	270			42	212				
12:45		21	283	111	1085	30	238	128	918	239	2003
01:00		18	270			34	235				
01:15		14	279			26	246				
01:30		16	267			19	241				
01:45		17	289	65	1105	23	281	102	1003	167	2108
02:00		18	280			17	261				
02:15		23	310			16	245				
02:30		14	**353**			20	256				
02:45		17	**365**	72	1308	18	279	71	1041	143	2349
03:00		12	**344**			24	278				
03:15		18	**345**			31	292				
03:30		25	344			38	292				
03:45		36	309	91	1342	64	357	157	1219	248	2561
04:00		33	282			84	273				
04:15		59	290			64	293				
04:30		80	287			81	290				
04:45		102	307	274	1166	76	313	305	1169	579	2335
05:00		117	282			97	275				
05:15		88	298			72	**333**				
05:30		117	315			90	**308**				
05:45		121	287	443	1182	125	**292**	384	1208	827	2390
06:00		153	266			112	**333**				
06:15		167	271			147	296				
06:30		203	262			175	295				
06:45		229	262	752	1061	194	265	628	1189	1380	2250
07:00		238	222			199	213				
07:15		**319**	242			184	270				
07:30		**324**	189			215	213				
07:45		**313**	172	1194	825	241	194	839	890	2033	1715
08:00		**242**	177			216	213				
08:15		271	161			201	179				
08:30		258	170			209	183				
08:45		350	141	1121	649	197	179	823	754	1944	1403
09:00		284	132			168	120				
09:15		229	124			189	136				
09:30		216	118			208	161				
09:45		244	96	973	470	205	80	770	497	1743	967
10:00		220	97			181	114				
10:15		270	98			221	109				
10:30		245	75			207	86				
10:45		284	55	1019	325	**243**	72	852	381	1871	706
11:00		267	59			**239**	61				
11:15		254	46			**240**	59				
11:30		309	50			**242**	43				
11:45		236	39	1066	194	225	64	946	227	2012	421
Total		7181	10712	7181	10712	6005	10496	6005	10496	13186	21208
Combined Total		17893		17893		16501		16501		34394	
AM Peak	-	07:15	-	-	-	10:45	-	-	-	-	-
Vol.	-	1198	-	-	-	964	-	-	-	-	-
P.H.F.		0.924				0.992					
PM Peak	-	-	02:30	-	-	-	05:15	-	-	-	-
Vol.	-	-	1407	-	-	-	1266	-	-	-	-
P.H.F.			0.964				0.950				
Percentage		40.1%	59.9%			36.4%	63.6%				
ADT/AADT		ADT 34,394		AADT 34,394							

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Menifee
N/S: Bradley Road
E/W: Newport Road
Weather: Clear

File Name : 21_MEN BRNE AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Bradley Road Southbound				Newport Road Westbound				Bradley Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	38	72	13	123	88	191	23	302	16	15	67	98	13	256	18	287	810
07:15 AM	41	89	10	140	117	183	19	319	22	46	82	150	8	273	24	305	914
07:30 AM	41	54	13	108	97	208	38	343	38	75	129	242	15	315	12	342	1035
07:45 AM	46	24	22	92	35	182	29	246	33	64	100	197	37	253	13	303	838
Total	166	239	58	463	337	764	109	1210	109	200	378	687	73	1097	67	1237	3597
08:00 AM	31	38	15	84	41	212	35	288	16	34	60	110	33	215	8	256	738
08:15 AM	42	25	25	92	26	197	25	248	21	31	58	110	38	240	6	284	734
08:30 AM	44	11	35	90	16	238	49	303	37	33	47	117	53	227	9	289	799
08:45 AM	65	27	33	125	26	216	66	308	25	28	31	84	71	254	12	337	854
Total	182	101	108	391	109	863	175	1147	99	126	196	421	195	936	35	1166	3125
Grand Total	348	340	166	854	446	1627	284	2357	208	326	574	1108	268	2033	102	2403	6722
Apprch %	40.7	39.8	19.4		18.9	69	12		18.8	29.4	51.8		11.2	84.6	4.2		
Total %	5.2	5.1	2.5	12.7	6.6	24.2	4.2	35.1	3.1	4.8	8.5	16.5	4	30.2	1.5	35.7	

	Bradley Road Southbound				Newport Road Westbound				Bradley Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	38	72	13	123	88	191	23	302	16	15	67	98	13	256	18	287	810
07:15 AM	41	**89**	10	**140**	**117**	183	19	319	22	46	82	150	8	273	**24**	305	914
07:30 AM	41	54	13	108	97	**208**	**38**	**343**	**38**	**75**	**129**	**242**	15	**315**	12	**342**	**1035**
07:45 AM	**46**	24	**22**	92	35	182	29	246	33	64	100	197	**37**	253	13	303	838
Total Volume	166	239	58	463	337	764	109	1210	109	200	378	687	73	1097	67	1237	3597
% App. Total	35.9	51.6	12.5		27.9	63.1	9		15.9	29.1	55		5.9	88.7	5.4		
PHF	.902	.671	.659	.827	.720	.918	.717	.882	.717	.667	.733	.710	.493	.871	.698	.904	.869

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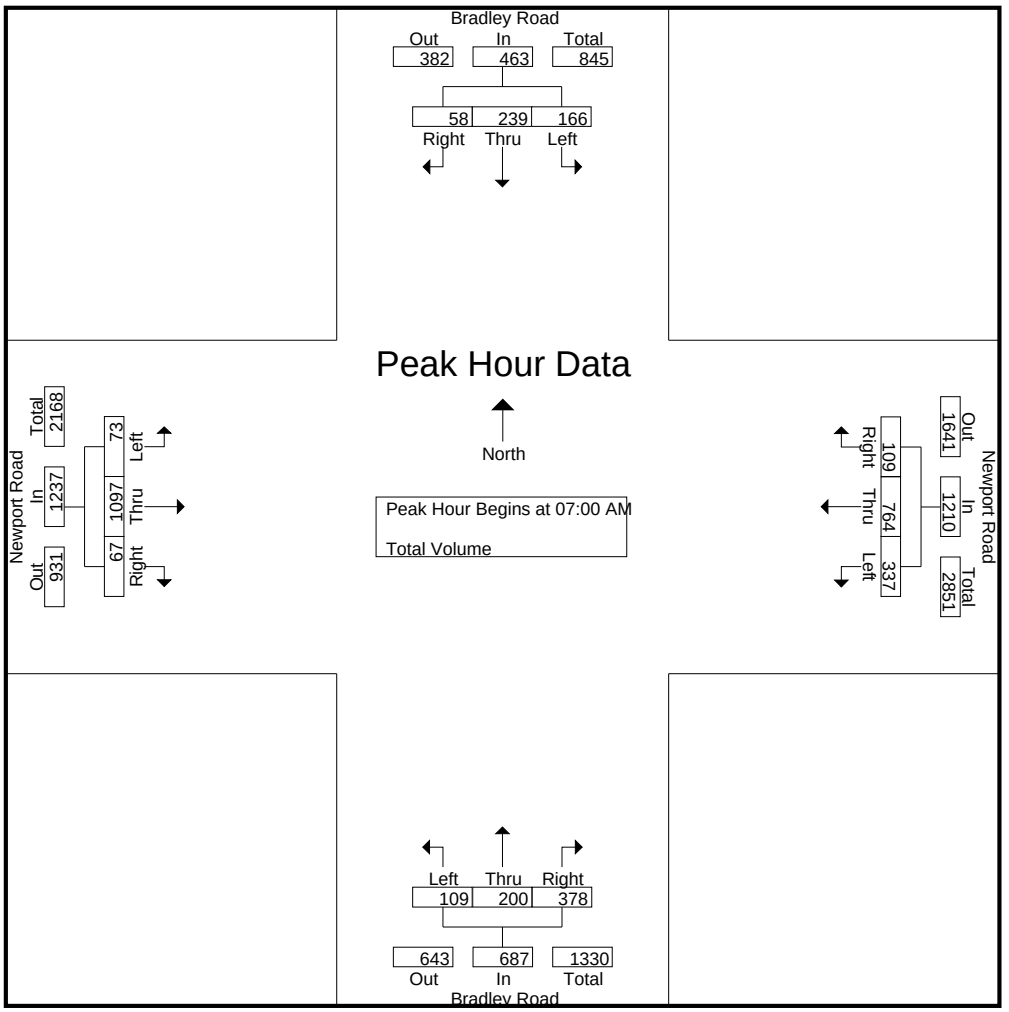
City of Menifee
N/S: Bradley Road
E/W: Newport Road
Weather: Clear

File Name : 21_MEN BRNE AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:15 AM				07:00 AM			
+0 mins.	38	72	13	123	88	191	23	302	22	46	82	150	13	256	18	287
+15 mins.	41	**89**	10	**140**	**117**	183	19	319	**38**	**75**	**129**	**242**	8	273	**24**	305
+30 mins.	41	54	13	108	97	**208**	**38**	**343**	33	64	100	197	15	**315**	12	**342**
+45 mins.	**46**	24	**22**	92	35	182	29	246	16	34	60	110	**37**	253	13	303
Total Volume	166	239	58	463	337	764	109	1210	109	219	371	699	73	1097	67	1237
% App. Total	35.9	51.6	12.5		27.9	63.1	9		15.6	31.3	53.1		5.9	88.7	5.4	
PHF	.902	.671	.659	.827	.720	.918	.717	.882	.717	.730	.719	.722	.493	.871	.698	.904

Counts Unlimited
PO Box 1178
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City of Menifee
N/S: Bradley Road
E/W: Newport Road
Weather: Clear

File Name : 21_MEN BRNE MD
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Bradley Road Southbound				Newport Road Westbound				Bradley Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
02:00 PM	44	42	20	106	46	169	50	265	30	53	42	125	27	217	14	258	754
02:15 PM	59	27	28	114	53	259	63	375	39	48	57	144	42	232	12	286	919
02:30 PM	53	41	38	132	68	269	49	386	27	29	42	98	56	252	16	324	940
02:45 PM	52	44	22	118	65	302	84	451	17	36	33	86	50	271	26	347	1002
Total	208	154	108	470	232	999	246	1477	113	166	174	453	175	972	68	1215	3615
03:00 PM	64	56	37	157	68	253	66	387	23	42	49	114	40	277	28	345	1003
03:15 PM	46	58	23	127	83	267	66	416	40	59	88	187	40	229	17	286	1016
03:30 PM	60	37	24	121	74	312	61	447	47	74	95	216	28	282	17	327	1111
03:45 PM	36	37	19	92	60	297	69	426	37	83	91	211	41	268	12	321	1050
Total	206	188	103	497	285	1129	262	1676	147	258	323	728	149	1056	74	1279	4180
Grand Total	414	342	211	967	517	2128	508	3153	260	424	497	1181	324	2028	142	2494	7795
Apprch %	42.8	35.4	21.8		16.4	67.5	16.1		22	35.9	42.1		13	81.3	5.7		
Total %	5.3	4.4	2.7	12.4	6.6	27.3	6.5	40.4	3.3	5.4	6.4	15.2	4.2	26	1.8	32	

	Bradley Road Southbound				Newport Road Westbound				Bradley Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	**64**	56	**37**	**157**	68	253	66	387	23	42	49	114	40	277	**28**	**345**	1003
03:15 PM	46	**58**	23	127	**83**	267	66	416	40	59	88	187	40	229	17	286	1016
03:30 PM	60	37	24	121	74	**312**	61	**447**	**47**	74	**95**	**216**	28	**282**	17	327	**1111**
03:45 PM	36	37	19	92	60	297	**69**	426	37	**83**	91	211	**41**	268	12	321	1050
Total Volume	206	188	103	497	285	1129	262	1676	147	258	323	728	149	1056	74	1279	4180
% App. Total	41.4	37.8	20.7		17	67.4	15.6		20.2	35.4	44.4		11.6	82.6	5.8		
PHF	.805	.810	.696	.791	.858	.905	.949	.937	.782	.777	.850	.843	.909	.936	.661	.927	.941

Counts Unlimited
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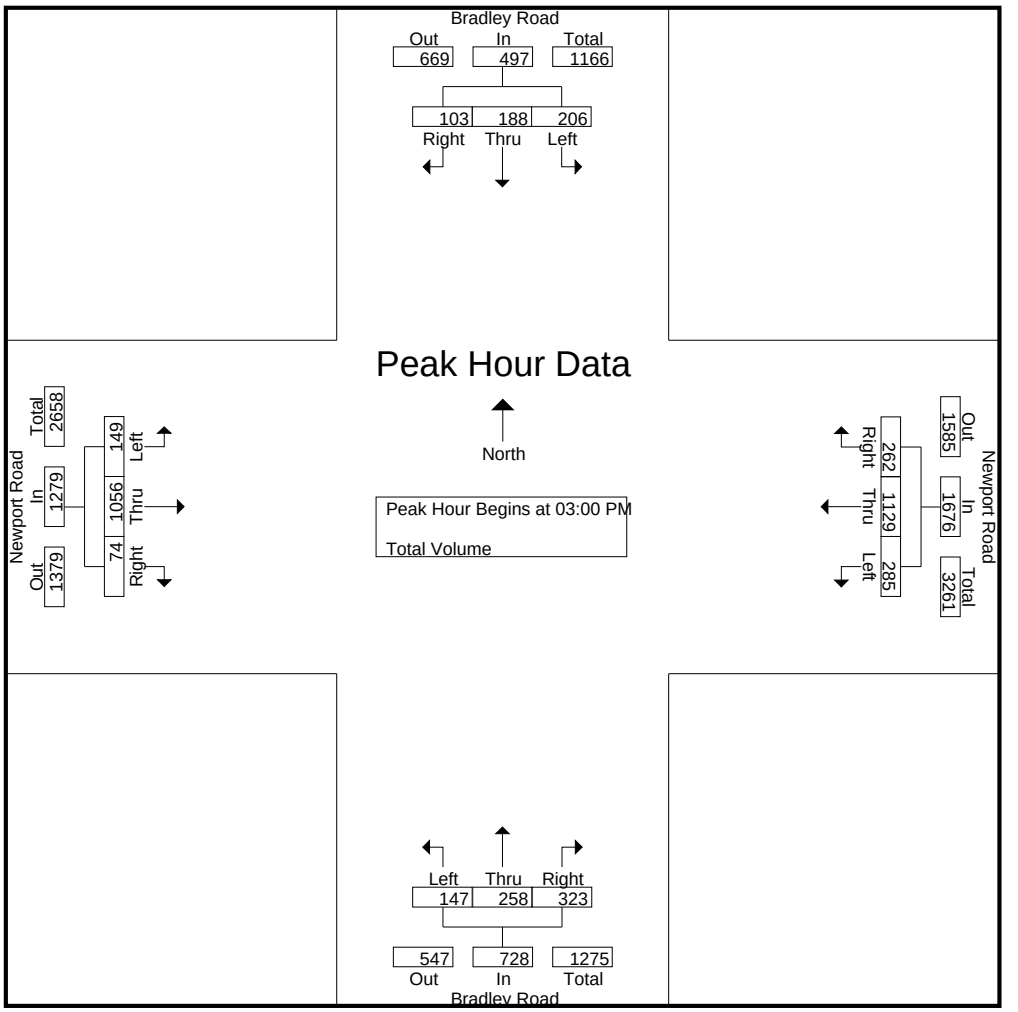
City of Menifee
N/S: Bradley Road
E/W: Newport Road
Weather: Clear

File Name : 21_MEN BRNE MD
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:30 PM				02:45 PM				03:00 PM				02:45 PM			
+0 mins.	53	41	**38**	132	65	302	**84**	**451**	23	42	49	114	**50**	271	26	**347**
+15 mins.	52	44	22	118	68	253	66	387	40	59	88	187	40	277	**28**	345
+30 mins.	**64**	56	37	**157**	**83**	267	66	416	**47**	74	**95**	**216**	40	229	17	286
+45 mins.	46	**58**	23	127	74	**312**	61	447	37	**83**	91	211	28	**282**	17	327
Total Volume	215	199	120	534	290	1134	277	1701	147	258	323	728	158	1059	88	1305
% App. Total	40.3	37.3	22.5		17	66.7	16.3		20.2	35.4	44.4		12.1	81.1	6.7	
PHF	.840	.858	.789	.850	.873	.909	.824	.943	.782	.777	.850	.843	.790	.939	.786	.940

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(951) 268-6268

City of Menifee
N/S: Bradley Road
E/W: Newport Road
Weather: Clear

File Name : 21_MEN BRNE PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Bradley Road Southbound				Newport Road Westbound				Bradley Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	44	36	29	109	55	234	49	338	29	41	46	116	37	239	15	291	854
04:15 PM	42	37	10	89	50	280	61	391	24	35	50	109	35	241	19	295	884
04:30 PM	65	36	24	125	80	265	55	400	19	29	40	88	26	251	12	289	902
04:45 PM	57	34	30	121	60	284	70	414	19	27	38	84	28	272	10	310	929
Total	208	143	93	444	245	1063	235	1543	91	132	174	397	126	1003	56	1185	3569
05:00 PM	46	37	28	111	70	316	77	463	22	24	28	74	31	291	11	333	981
05:15 PM	62	38	22	122	76	316	73	465	21	26	41	88	26	285	12	323	998
05:30 PM	60	48	24	132	78	311	62	451	23	36	53	112	35	260	15	310	1005
05:45 PM	46	32	17	95	60	267	56	383	21	22	39	82	32	248	16	296	856
Total	214	155	91	460	284	1210	268	1762	87	108	161	356	124	1084	54	1262	3840
Grand Total	422	298	184	904	529	2273	503	3305	178	240	335	753	250	2087	110	2447	7409
Apprch %	46.7	33	20.4		16	68.8	15.2		23.6	31.9	44.5		10.2	85.3	4.5		
Total %	5.7	4	2.5	12.2	7.1	30.7	6.8	44.6	2.4	3.2	4.5	10.2	3.4	28.2	1.5	33	

	Bradley Road Southbound				Newport Road Westbound				Bradley Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	57	34	**30**	121	60	284	70	414	19	27	38	84	28	272	10	310	929
05:00 PM	46	37	28	111	70	**316**	**77**	463	22	24	28	74	31	**291**	11	**333**	981
05:15 PM	**62**	38	22	122	76	316	73	**465**	21	26	41	88	26	285	12	323	998
05:30 PM	60	**48**	24	**132**	**78**	311	62	451	**23**	**36**	**53**	**112**	**35**	260	**15**	310	**1005**
Total Volume	225	157	104	486	284	1227	282	1793	85	113	160	358	120	1108	48	1276	3913
% App. Total	46.3	32.3	21.4		15.8	68.4	15.7		23.7	31.6	44.7		9.4	86.8	3.8		
PHF	.907	.818	.867	.920	.910	.971	.916	.964	.924	.785	.755	.799	.857	.952	.800	.958	.973

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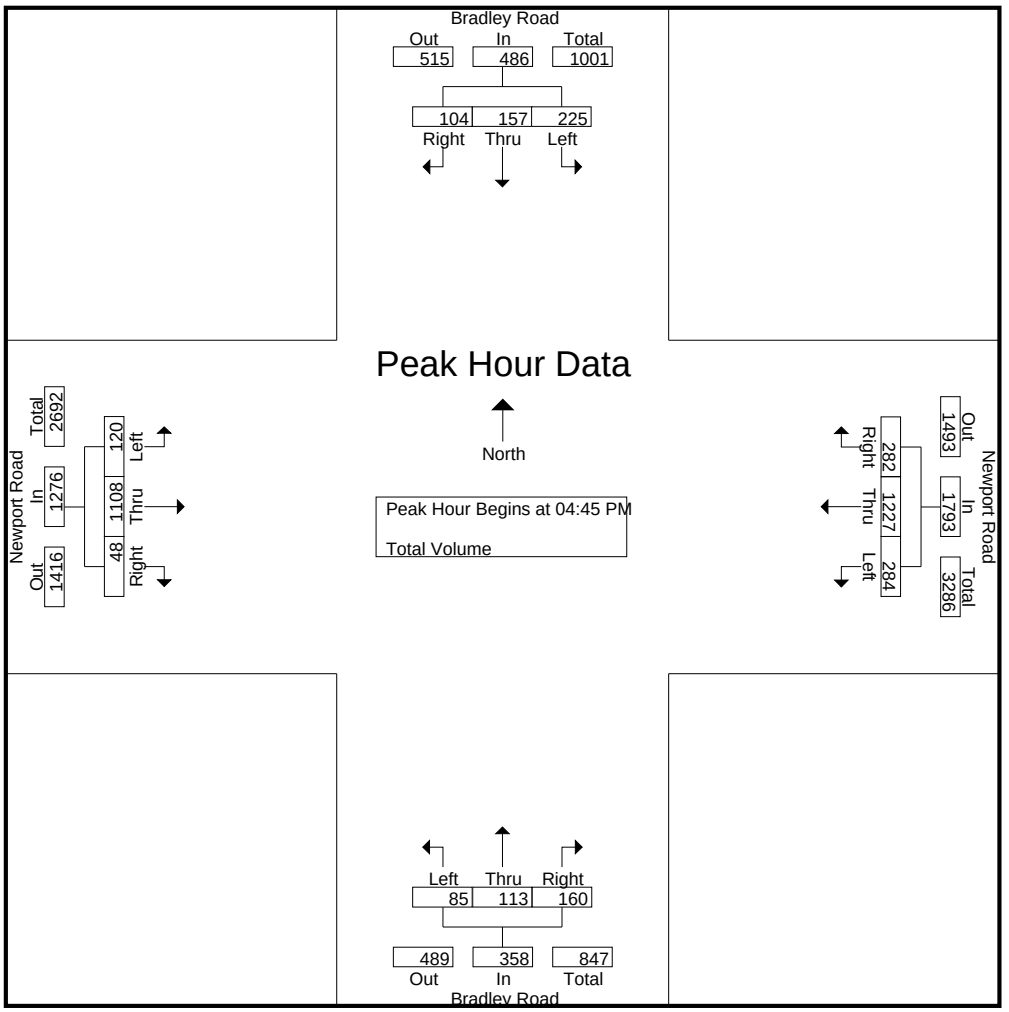
City of Menifee
N/S: Bradley Road
E/W: Newport Road
Weather: Clear

File Name : 21_MEN BRNE PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:00 PM				04:45 PM			
+0 mins.	57	34	**30**	121	60	284	70	414	**29**	**41**	46	**116**	28	272	10	310
+15 mins.	46	37	28	111	70	**316**	**77**	463	24	35	**50**	109	31	**291**	11	**333**
+30 mins.	**62**	38	22	122	76	316	73	**465**	19	29	40	88	26	285	12	323
+45 mins.	60	**48**	24	**132**	**78**	311	62	451	19	27	38	84	**35**	260	**15**	310
Total Volume	225	157	104	486	284	1227	282	1793	91	132	174	397	120	1108	48	1276
% App. Total	46.3	32.3	21.4		15.8	68.4	15.7		22.9	33.2	43.8		9.4	86.8	3.8	
PHF	.907	.818	.867	.920	.910	.971	.916	.964	.784	.805	.870	.856	.857	.952	.800	.958

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City of Menifee
N/S: Bradley Road
E/W: Holland Road
Weather: Clear

File Name : 24_MEN BRHO AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Bradley Road Southbound				Holland Road Westbound				Bradley Road Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	21	112	22	155	51	26	18	95	8	59	35	102	10	58	44	112	464
07:15 AM	9	140	70	219	63	55	27	145	13	92	45	150	28	43	52	123	637
07:30 AM	16	130	77	223	41	44	34	119	15	84	38	137	22	36	68	126	605
07:45 AM	20	44	35	99	19	49	31	99	12	83	46	141	46	91	18	155	494
Total	66	426	204	696	174	174	110	458	48	318	164	530	106	228	182	516	2200
08:00 AM	32	26	60	118	12	40	21	73	4	22	12	38	25	79	7	111	340
08:15 AM	20	29	47	96	4	45	11	60	8	29	14	51	34	56	3	93	300
08:30 AM	15	20	19	54	10	27	18	55	4	34	14	52	46	53	6	105	266
08:45 AM	24	13	9	46	6	21	20	47	3	11	12	26	18	34	1	53	172
Total	91	88	135	314	32	133	70	235	19	96	52	167	123	222	17	362	1078
Grand Total	157	514	339	1010	206	307	180	693	67	414	216	697	229	450	199	878	3278
Apprch %	15.5	50.9	33.6		29.7	44.3	26		9.6	59.4	31		26.1	51.3	22.7		
Total %	4.8	15.7	10.3	30.8	6.3	9.4	5.5	21.1	2	12.6	6.6	21.3	7	13.7	6.1	26.8	

	Bradley Road Southbound				Holland Road Westbound				Bradley Road Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**21**	112	22	155	51	26	18	95	8	59	35	102	10	58	44	112	464
07:15 AM	9	**140**	70	219	**63**	**55**	27	**145**	13	**92**	45	**150**	28	43	52	123	**637**
07:30 AM	16	130	**77**	**223**	41	44	**34**	119	**15**	84	38	137	22	36	**68**	126	605
07:45 AM	20	44	35	99	19	49	31	99	12	83	**46**	141	**46**	**91**	18	**155**	494
Total Volume	66	426	204	696	174	174	110	458	48	318	164	530	106	228	182	516	2200
% App. Total	9.5	61.2	29.3		38	38	24		9.1	60	30.9		20.5	44.2	35.3		
PHF	.786	.761	.662	.780	.690	.791	.809	.790	.800	.864	.891	.883	.576	.626	.669	.832	.863

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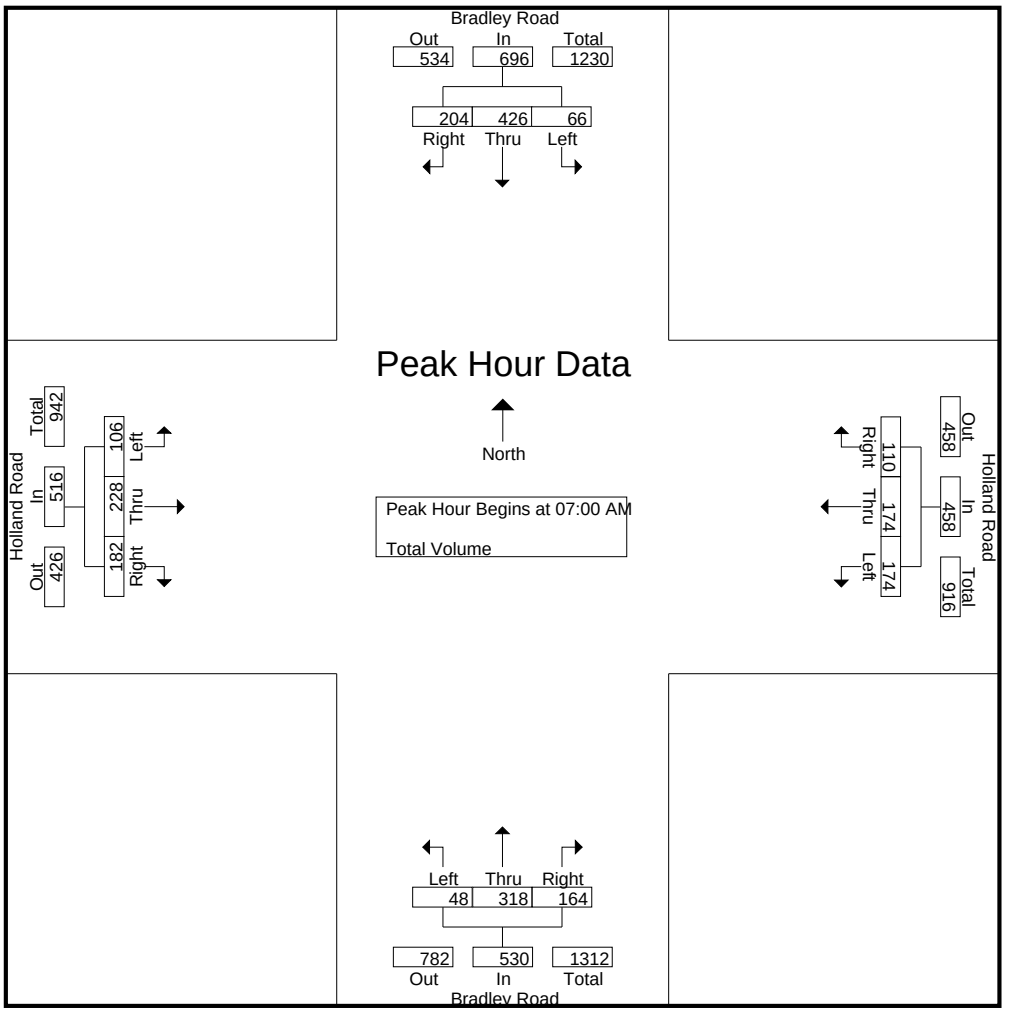
City of Menifee
N/S: Bradley Road
E/W: Holland Road
Weather: Clear

File Name : 24_MEN BRHO AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	**21**	112	22	155	51	26	18	95	8	59	35	102	10	58	44	112
+15 mins.	9	**140**	70	219	**63**	**55**	27	**145**	13	**92**	45	**150**	28	43	52	123
+30 mins.	16	130	**77**	**223**	41	44	**34**	119	**15**	84	38	137	22	36	**68**	126
+45 mins.	20	44	35	99	19	49	31	99	12	83	**46**	141	**46**	**91**	18	**155**
Total Volume	66	426	204	696	174	174	110	458	48	318	164	530	106	228	182	516
% App. Total	9.5	61.2	29.3		38	38	24		9.1	60	30.9		20.5	44.2	35.3	
PHF	.786	.761	.662	.780	.690	.791	.809	.790	.800	.864	.891	.883	.576	.626	.669	.832

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City of Menifee
N/S: Bradley Road
E/W: Holland Road
Weather: Clear

File Name : 24_MEN BRHO MD
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Bradley Road Southbound				Holland Road Westbound				Bradley Road Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
02:00 PM	24	31	32	87	12	46	30	88	0	23	13	36	11	48	5	64	275
02:15 PM	36	43	59	138	8	50	29	87	12	55	15	82	22	35	7	64	371
02:30 PM	22	50	51	123	16	63	29	108	4	17	12	33	27	51	7	85	349
02:45 PM	28	50	60	138	20	91	32	143	1	10	10	21	20	67	13	100	402
Total	110	174	202	486	56	250	120	426	17	105	50	172	80	201	32	313	1397
03:00 PM	32	71	48	151	33	62	28	123	6	17	9	32	38	40	17	95	401
03:15 PM	30	45	43	118	30	57	48	135	18	100	31	149	55	47	8	110	512
03:30 PM	37	55	31	123	31	60	52	143	19	77	40	136	48	73	17	138	540
03:45 PM	14	35	18	67	17	62	31	110	13	96	47	156	35	68	14	117	450
Total	113	206	140	459	111	241	159	511	56	290	127	473	176	228	56	460	1903
Grand Total	223	380	342	945	167	491	279	937	73	395	177	645	256	429	88	773	3300
Apprch %	23.6	40.2	36.2		17.8	52.4	29.8		11.3	61.2	27.4		33.1	55.5	11.4		
Total %	6.8	11.5	10.4	28.6	5.1	14.9	8.5	28.4	2.2	12	5.4	19.5	7.8	13	2.7	23.4	

	Bradley Road Southbound				Holland Road Westbound				Bradley Road Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	32	**71**	**48**	**151**	**33**	**62**	28	123	6	17	9	32	38	40	**17**	95	401
03:15 PM	30	45	43	118	30	57	48	135	18	**100**	31	149	**55**	47	8	110	512
03:30 PM	**37**	55	31	123	31	60	**52**	**143**	**19**	77	40	136	48	**73**	17	**138**	**540**
03:45 PM	14	35	18	67	17	62	31	110	13	96	**47**	**156**	35	68	14	117	450
Total Volume	113	206	140	459	111	241	159	511	56	290	127	473	176	228	56	460	1903
% App. Total	24.6	44.9	30.5		21.7	47.2	31.1		11.8	61.3	26.8		38.3	49.6	12.2		
PHF	.764	.725	.729	.760	.841	.972	.764	.893	.737	.725	.676	.758	.800	.781	.824	.833	.881

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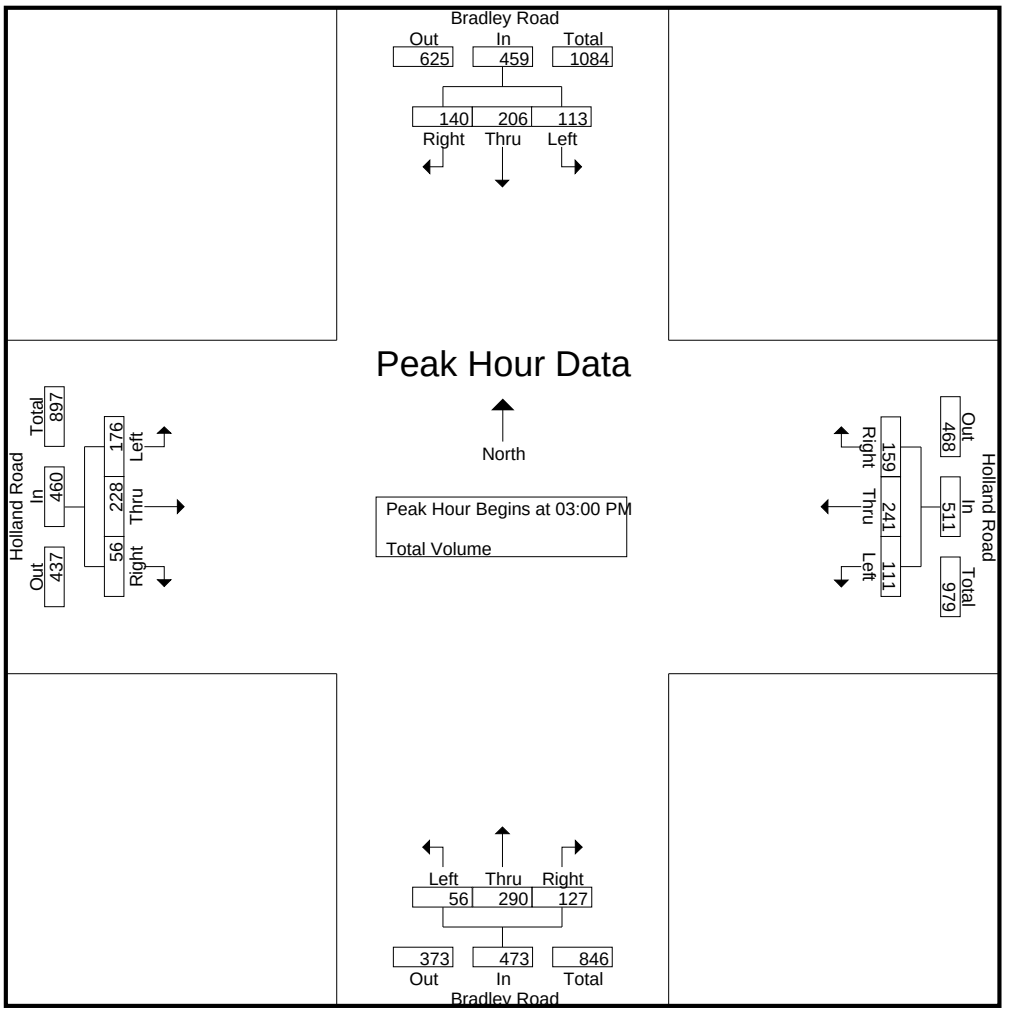
City of Menifee
N/S: Bradley Road
E/W: Holland Road
Weather: Clear

File Name : 24_MEN BRHO MD
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:15 PM				02:45 PM				03:00 PM				03:00 PM			
+0 mins.	**36**	43	59	138	20	**91**	32	**143**	6	17	9	32	38	40	**17**	95
+15 mins.	22	50	51	123	**33**	62	28	123	18	**100**	31	149	**55**	47	8	110
+30 mins.	28	50	**60**	138	30	57	48	135	**19**	77	40	136	48	**73**	17	**138**
+45 mins.	32	**71**	48	**151**	31	60	**52**	143	13	96	**47**	**156**	35	68	14	117
Total Volume	118	214	218	550	114	270	160	544	56	290	127	473	176	228	56	460
% App. Total	21.5	38.9	39.6		21	49.6	29.4		11.8	61.3	26.8		38.3	49.6	12.2	
PHF	.819	.754	.908	.911	.864	.742	.769	.951	.737	.725	.676	.758	.800	.781	.824	.833

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City of Menifee
N/S: Bradley Road
E/W: Holland Road
Weather: Clear

File Name : 24_MEN BRHO PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Bradley Road Southbound				Holland Road Westbound				Bradley Road Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	18	30	14	62	12	71	20	103	7	48	20	75	16	59	5	80	320
04:15 PM	22	19	21	62	12	73	27	112	13	38	22	73	16	43	6	65	312
04:30 PM	11	30	24	65	15	66	30	111	4	26	14	44	12	63	8	83	303
04:45 PM	20	17	17	54	14	56	37	107	6	26	12	44	6	50	2	58	263
Total	71	96	76	243	53	266	114	433	30	138	68	236	50	215	21	286	1198
05:00 PM	26	32	16	74	12	69	29	110	4	23	18	45	11	41	13	65	294
05:15 PM	20	38	19	77	19	61	30	110	6	37	14	57	17	46	15	78	322
05:30 PM	26	61	13	100	17	65	37	119	6	27	18	51	16	46	11	73	343
05:45 PM	15	44	19	78	16	73	37	126	6	37	18	61	17	47	9	73	338
Total	87	175	67	329	64	268	133	465	22	124	68	214	61	180	48	289	1297
Grand Total	158	271	143	572	117	534	247	898	52	262	136	450	111	395	69	575	2495
Apprch %	27.6	47.4	25		13	59.5	27.5		11.6	58.2	30.2		19.3	68.7	12		
Total %	6.3	10.9	5.7	22.9	4.7	21.4	9.9	36	2.1	10.5	5.5	18	4.4	15.8	2.8	23	

	Bradley Road Southbound				Holland Road Westbound				Bradley Road Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**26**	32	16	74	12	69	29	110	4	23	**18**	45	11	41	13	65	294
05:15 PM	20	38	**19**	77	**19**	61	30	110	**6**	**37**	14	57	**17**	46	**15**	**78**	322
05:30 PM	26	**61**	13	**100**	17	65	**37**	119	6	27	18	51	16	46	11	73	**343**
05:45 PM	15	44	19	78	16	**73**	37	**126**	6	37	18	**61**	17	**47**	9	73	338
Total Volume	87	175	67	329	64	268	133	465	22	124	68	214	61	180	48	289	1297
% App. Total	26.4	53.2	20.4		13.8	57.6	28.6		10.3	57.9	31.8		21.1	62.3	16.6		
PHF	.837	.717	.882	.823	.842	.918	.899	.923	.917	.838	.944	.877	.897	.957	.800	.926	.945

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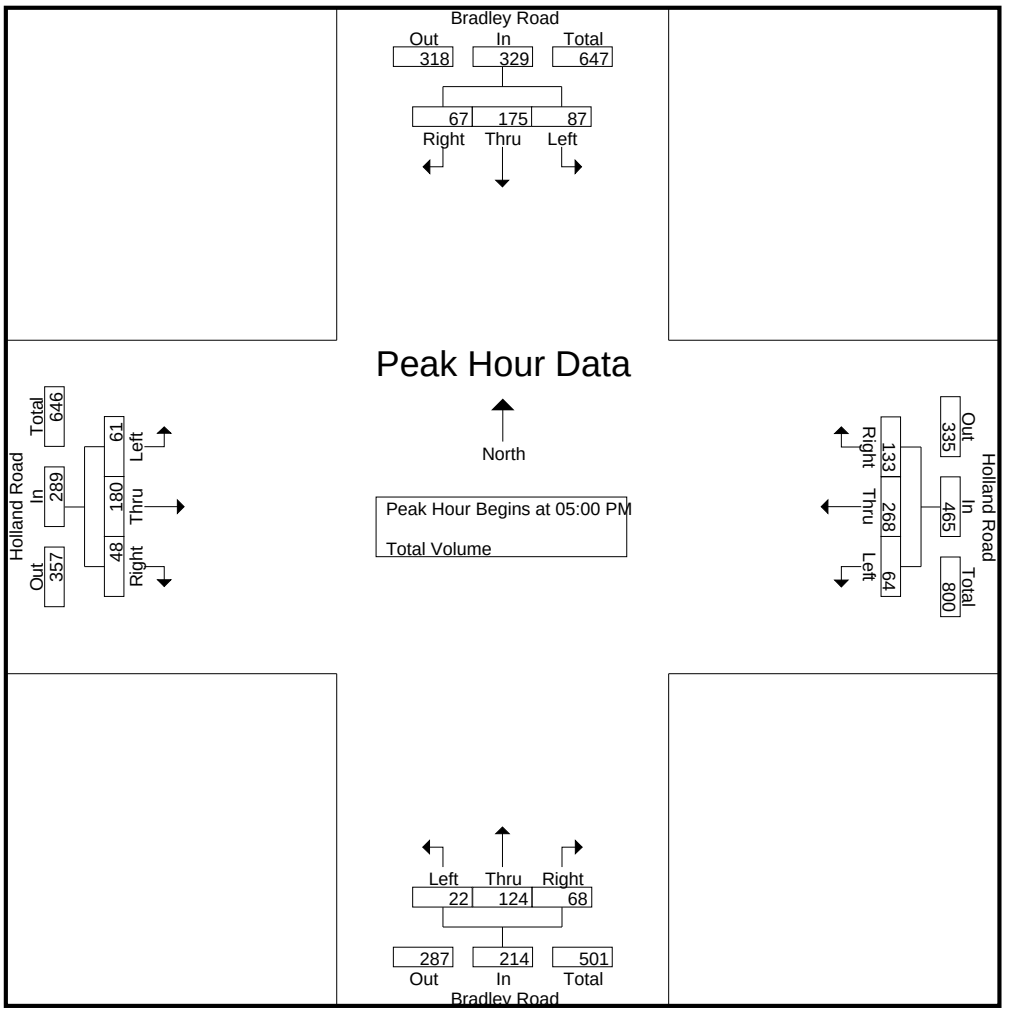
City of Menifee
N/S: Bradley Road
E/W: Holland Road
Weather: Clear

File Name : 24_MEN BRHO PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:00 PM				05:00 PM			
+0 mins.	**26**	32	16	74	12	69	29	110	7	**48**	20	**75**	11	41	13	65
+15 mins.	20	38	**19**	77	**19**	61	30	110	**13**	38	**22**	73	**17**	46	**15**	**78**
+30 mins.	26	**61**	13	**100**	17	65	**37**	119	4	26	14	44	16	46	11	73
+45 mins.	15	44	19	78	16	**73**	37	**126**	6	26	12	44	17	**47**	9	73
Total Volume	87	175	67	329	64	268	133	465	30	138	68	236	61	180	48	289
% App. Total	26.4	53.2	20.4		13.8	57.6	28.6		12.7	58.5	28.8		21.1	62.3	16.6	
PHF	.837	.717	.882	.823	.842	.918	.899	.923	.577	.719	.773	.787	.897	.957	.800	.926

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City of Menifee
N/S: Bradley Road
E/W: Craig Avenue/Linda Lee Drive
Weather: Clear

File Name : 03_MEN_Bradley_Craig_Linda Lee AM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 1

Groups Printed- Total Volume

	Bradley Road Southbound				Linda Lee Drive Westbound				Bradley Road Northbound				Craig Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	30	38	68	0	0	1	1	25	52	0	77	19	1	6	26	172
07:15 AM	0	70	48	118	0	0	3	3	26	102	0	128	33	0	14	47	296
07:30 AM	1	90	50	141	1	6	17	24	44	97	0	141	16	0	18	34	340
07:45 AM	1	62	39	102	0	0	2	2	10	45	0	55	35	1	13	49	208
Total	2	252	175	429	1	6	23	30	105	296	0	401	103	2	51	156	1016
08:00 AM	3	4	21	28	0	1	1	2	9	4	0	13	32	1	7	40	83
08:15 AM	0	5	36	41	0	1	1	2	5	13	0	18	34	0	9	43	104
08:30 AM	1	5	21	27	0	0	1	1	6	9	1	16	43	1	13	57	101
08:45 AM	3	4	9	16	0	0	3	3	3	3	0	6	24	0	13	37	62
Total	7	18	87	112	0	2	6	8	23	29	1	53	133	2	42	177	350
Grand Total	9	270	262	541	1	8	29	38	128	325	1	454	236	4	93	333	1366
Apprch %	1.7	49.9	48.4		2.6	21.1	76.3		28.2	71.6	0.2		70.9	1.2	27.9		
Total %	0.7	19.8	19.2	39.6	0.1	0.6	2.1	2.8	9.4	23.8	0.1	33.2	17.3	0.3	6.8	24.4	

	Bradley Road Southbound				Linda Lee Drive Westbound				Bradley Road Northbound				Craig Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	30	38	68	0	0	1	1	25	52	0	77	19	**1**	6	26	172
07:15 AM	0	70	48	118	0	0	3	3	26	**102**	0	128	33	0	14	47	296
07:30 AM	**1**	**90**	**50**	**141**	**1**	**6**	**17**	**24**	**44**	97	0	**141**	16	0	**18**	34	**340**
07:45 AM	1	62	39	102	0	0	2	2	10	45	0	55	**35**	1	13	**49**	208
Total Volume	2	252	175	429	1	6	23	30	105	296	0	401	103	2	51	156	1016
% App. Total	0.5	58.7	40.8		3.3	20	76.7		26.2	73.8	0		66	1.3	32.7		
PHF	.500	.700	.875	.761	.250	.250	.338	.313	.597	.725	.000	.711	.736	.500	.708	.796	.747

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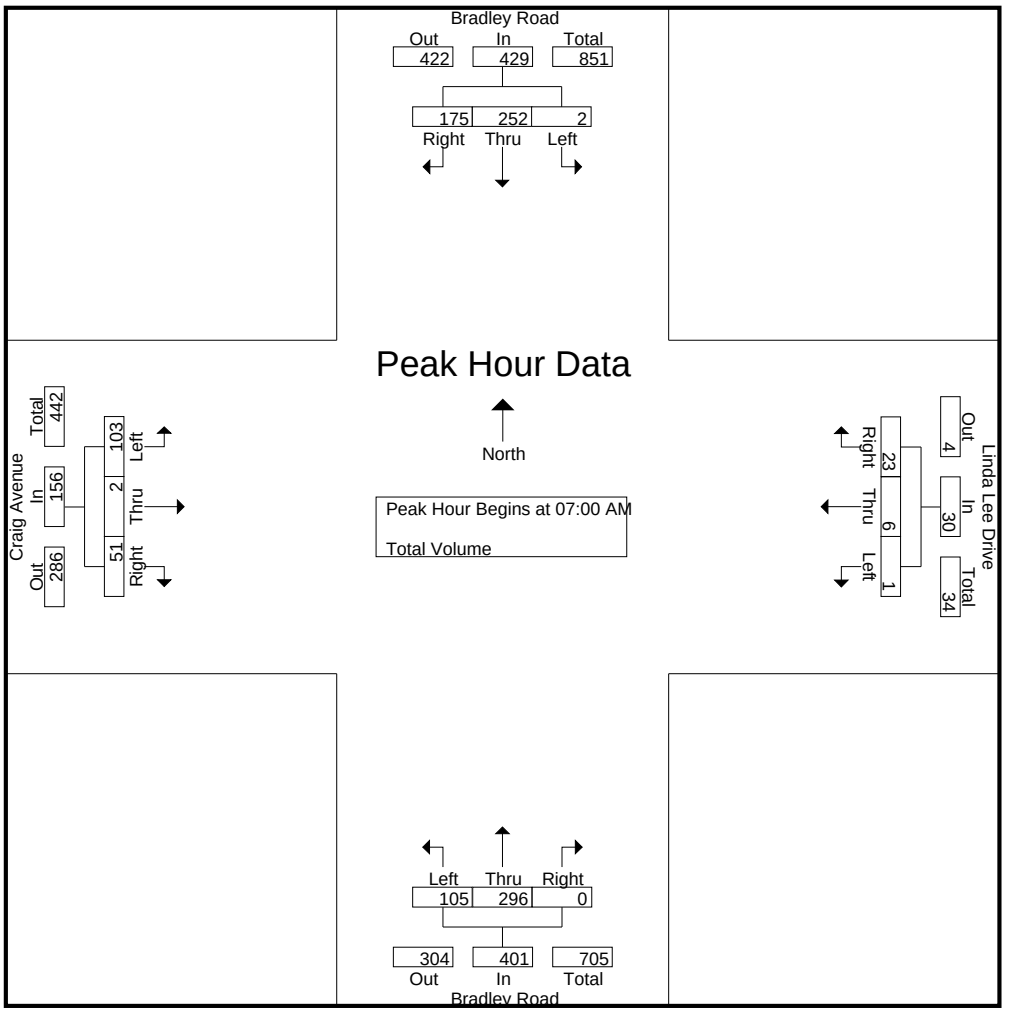
City of Menifee
N/S: Bradley Road
E/W: Craig Avenue/Linda Lee Drive
Weather: Clear

File Name : 03_MEN_Bradley_Craig_Linda Lee AM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:15 AM				07:00 AM				07:45 AM			
+0 mins.	0	30	38	68	0	0	3	3	25	52	0	77	35	**1**	**13**	49
+15 mins.	0	70	48	118	**1**	**6**	**17**	**24**	26	**102**	0	128	32	1	7	40
+30 mins.	**1**	**90**	**50**	**141**	0	0	2	2	**44**	97	0	**141**	34	0	9	43
+45 mins.	1	62	39	102	0	1	1	2	10	45	0	55	**43**	1	13	**57**
Total Volume	2	252	175	429	1	7	23	31	105	296	0	401	144	3	42	189
% App. Total	0.5	58.7	40.8		3.2	22.6	74.2		26.2	73.8	0		76.2	1.6	22.2	
PHF	.500	.700	.875	.761	.250	.292	.338	.323	.597	.725	.000	.711	.837	.750	.808	.829

Counts Unlimited
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City of Menifee
N/S: Bradley Road
E/W: Craig Avenue/Linda Lee Drive
Weather: Clear

File Name : 03_MEN_Bradley_Craig_Linda Lee PM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 1

Groups Printed- Total Volume

	Bradley Road Southbound				Linda Lee Drive Westbound				Bradley Road Northbound				Craig Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	16	22	39	0	0	1	1	7	17	0	24	34	0	14	48	112
04:15 PM	1	24	27	52	0	0	2	2	8	18	0	26	25	1	8	34	114
04:30 PM	0	19	27	46	0	0	0	0	10	14	0	24	25	0	10	35	105
04:45 PM	1	21	22	44	0	1	1	2	14	6	2	22	31	0	16	47	115
Total	3	80	98	181	0	1	4	5	39	55	2	96	115	1	48	164	446
05:00 PM	0	11	18	29	0	1	2	3	7	12	0	19	25	0	5	30	81
05:15 PM	1	16	14	31	0	1	1	2	12	10	0	22	28	0	11	39	94
05:30 PM	0	11	19	30	1	1	3	5	4	11	0	15	21	0	8	29	79
05:45 PM	2	15	16	33	0	0	0	0	4	6	0	10	19	1	5	25	68
Total	3	53	67	123	1	3	6	10	27	39	0	66	93	1	29	123	322
Grand Total	6	133	165	304	1	4	10	15	66	94	2	162	208	2	77	287	768
Apprch %	2	43.8	54.3		6.7	26.7	66.7		40.7	58	1.2		72.5	0.7	26.8		
Total %	0.8	17.3	21.5	39.6	0.1	0.5	1.3	2	8.6	12.2	0.3	21.1	27.1	0.3	10	37.4	

	Bradley Road Southbound				Linda Lee Drive Westbound				Bradley Road Northbound				Craig Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**1**	16	22	39	0	0	1	1	7	17	0	24	**34**	0	14	**48**	112
04:15 PM	1	**24**	**27**	**52**	0	0	**2**	**2**	8	**18**	0	**26**	25	**1**	8	34	114
04:30 PM	0	19	27	46	0	0	0	0	10	14	0	24	25	0	10	35	105
04:45 PM	1	21	22	44	0	**1**	1	2	**14**	6	**2**	22	31	0	**16**	47	**115**
Total Volume	3	80	98	181	0	1	4	5	39	55	2	96	115	1	48	164	446
% App. Total	1.7	44.2	54.1		0	20	80		40.6	57.3	2.1		70.1	0.6	29.3		
PHF	.750	.833	.907	.870	.000	.250	.500	.625	.696	.764	.250	.923	.846	.250	.750	.854	.970

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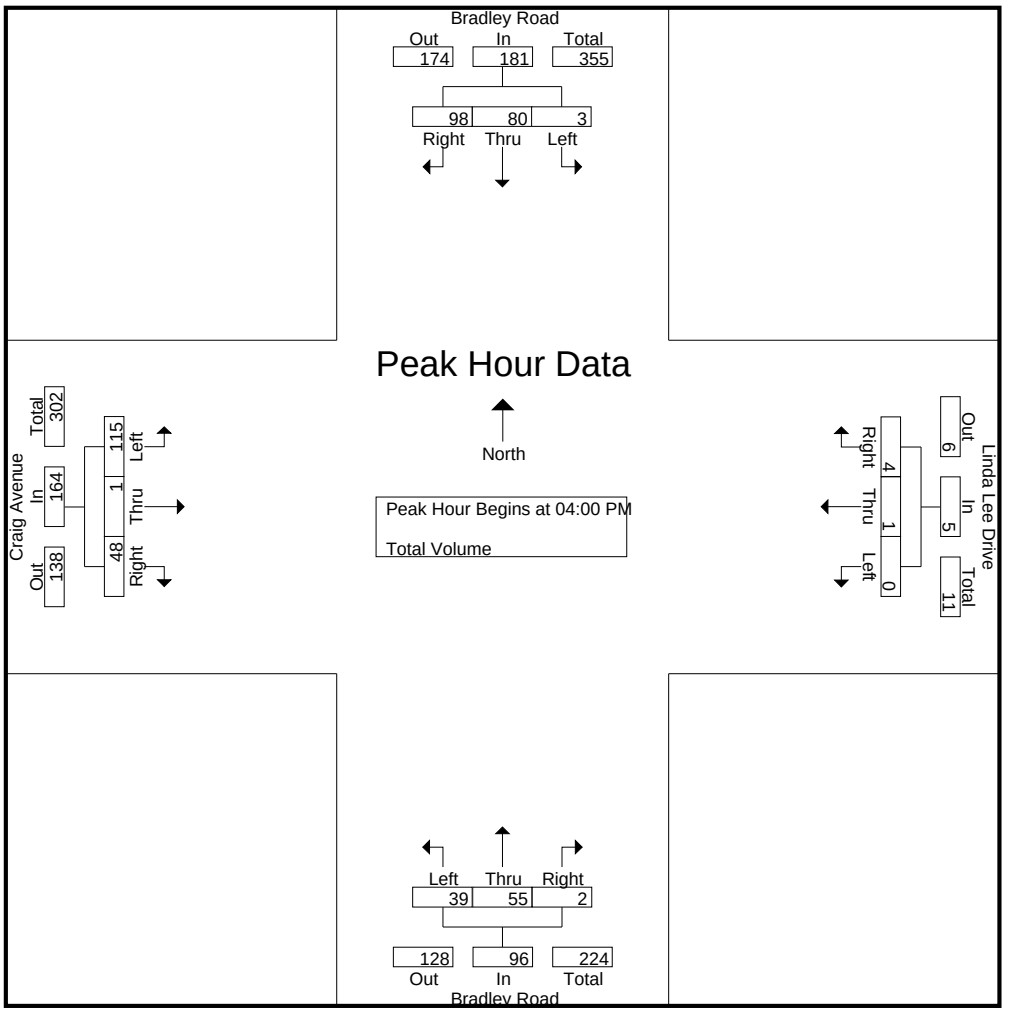
City of Menifee
N/S: Bradley Road
E/W: Craig Avenue/Linda Lee Drive
Weather: Clear

File Name : 03_MEN_Bradley_Craig_Linda Lee PM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:45 PM				04:00 PM				04:00 PM			
+0 mins.	**1**	16	22	39	0	**1**	1	2	7	17	0	24	**34**	0	14	**48**
+15 mins.	1	**24**	**27**	**52**	0	1	2	3	8	**18**	0	**26**	25	**1**	8	34
+30 mins.	0	19	27	46	0	1	1	2	10	14	0	24	25	0	10	35
+45 mins.	1	21	22	44	**1**	1	**3**	**5**	**14**	6	**2**	22	31	0	**16**	47
Total Volume	3	80	98	181	1	4	7	12	39	55	2	96	115	1	48	164
% App. Total	1.7	44.2	54.1		8.3	33.3	58.3		40.6	57.3	2.1		70.1	0.6	29.3	
PHF	.750	.833	.907	.870	.250	1.000	.583	.600	.696	.764	.250	.923	.846	.250	.750	.854

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City of Menifee
N/S: Sherman Road
E/W: Garbani Road
Weather: Clear

File Name : 04_MEN_Sherman_Garbani AM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 1

Groups Printed- Total Volume

	Sherman Road Southbound				Garbani Road Westbound				Sherman Road Northbound				Garbani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	37	0	0	37	0	0	79	79	0	1	0	1	0	0	0	0	117
07:15 AM	63	0	0	63	0	2	156	158	0	1	0	1	0	0	0	0	222
07:30 AM	97	1	0	98	0	4	101	105	0	1	0	1	2	1	0	3	207
07:45 AM	81	0	1	82	0	0	28	28	0	0	0	0	0	1	0	1	111
Total	278	1	1	280	0	6	364	370	0	3	0	3	2	2	0	4	657
08:00 AM	15	0	0	15	0	1	7	8	0	0	0	0	0	0	0	0	23
08:15 AM	17	0	0	17	0	0	13	13	0	0	0	0	0	0	0	0	30
08:30 AM	21	0	0	21	0	1	8	9	0	1	0	1	0	0	0	0	31
08:45 AM	16	0	0	16	0	0	6	6	0	0	0	0	0	0	0	0	22
Total	69	0	0	69	0	2	34	36	0	1	0	1	0	0	0	0	106
Grand Total	347	1	1	349	0	8	398	406	0	4	0	4	2	2	0	4	763
Apprch %	99.4	0.3	0.3		0	2	98		0	100	0		50	50	0		
Total %	45.5	0.1	0.1	45.7	0	1	52.2	53.2	0	0.5	0	0.5	0.3	0.3	0	0.5	

	Sherman Road Southbound				Garbani Road Westbound				Sherman Road Northbound				Garbani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	37	0	0	37	0	0	79	79	0	**1**	0	**1**	0	0	0	0	117
07:15 AM	63	0	0	63	0	2	**156**	**158**	0	1	0	1	0	0	0	0	**222**
07:30 AM	**97**	**1**	0	**98**	0	**4**	101	105	0	1	0	1	**2**	**1**	0	**3**	207
07:45 AM	81	0	**1**	82	0	0	28	28	0	0	0	0	0	1	0	1	111
Total Volume	278	1	1	280	0	6	364	370	0	3	0	3	2	2	0	4	657
% App. Total	99.3	0.4	0.4		0	1.6	98.4		0	100	0		50	50	0		
PHF	.716	.250	.250	.714	.000	.375	.583	.585	.000	.750	.000	.750	.250	.500	.000	.333	.740

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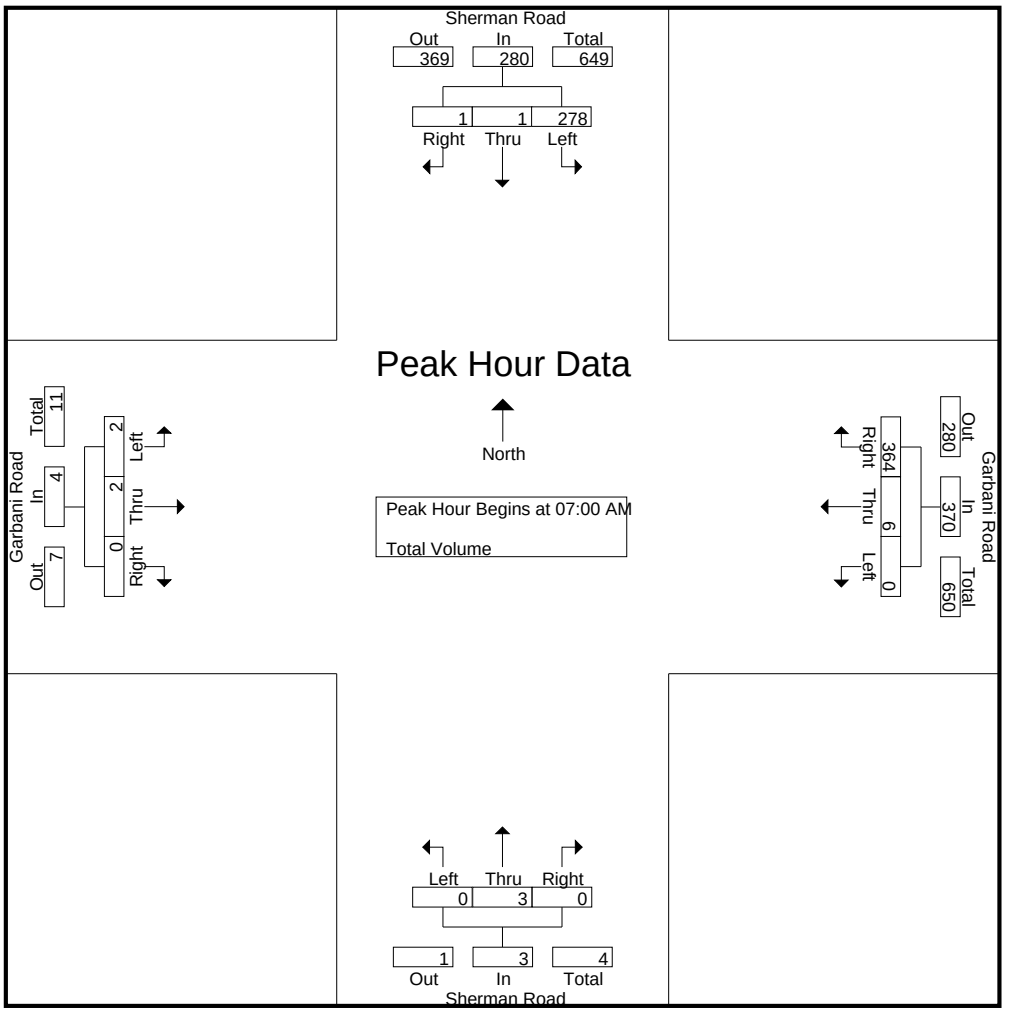
City of Menifee
N/S: Sherman Road
E/W: Garbani Road
Weather: Clear

File Name : 04_MEN_Sherman_Garbani AM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	37	0	0	37	0	0	79	79	0	**1**	0	**1**	0	0	0	0
+15 mins.	63	0	0	63	0	2	**156**	**158**	0	1	0	1	0	0	0	0
+30 mins.	**97**	**1**	0	**98**	0	**4**	101	105	0	1	0	1	**2**	**1**	0	**3**
+45 mins.	81	0	**1**	82	0	0	28	28	0	0	0	0	0	1	0	1
Total Volume	278	1	1	280	0	6	364	370	0	3	0	3	2	2	0	4
% App. Total	99.3	0.4	0.4		0	1.6	98.4		0	100	0		50	50	0	
PHF	.716	.250	.250	.714	.000	.375	.583	.585	.000	.750	.000	.750	.250	.500	.000	.333

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City of Menifee
N/S: Sherman Road
E/W: Garbani Road
Weather: Clear

File Name : 04_MEN_Sherman_Garbani PM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 1

Groups Printed- Total Volume

	Sherman Road Southbound				Garbani Road Westbound				Sherman Road Northbound				Garbani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	18	0	0	18	0	0	20	20	1	1	0	2	0	0	0	0	40
04:15 PM	27	0	0	27	0	1	35	36	0	1	0	1	0	0	0	0	64
04:30 PM	23	1	0	24	0	0	19	19	0	1	0	1	0	1	0	1	45
04:45 PM	21	1	0	22	0	0	18	18	0	1	2	3	0	0	0	0	43
Total	89	2	0	91	0	1	92	93	1	4	2	7	0	1	0	1	192
05:00 PM	16	0	0	16	0	1	24	25	0	0	0	0	0	1	0	1	42
05:15 PM	16	0	0	16	1	0	24	25	0	0	0	0	1	0	0	1	42
05:30 PM	21	0	0	21	0	2	13	15	0	0	0	0	1	0	0	1	37
05:45 PM	12	0	0	12	0	2	11	13	0	0	0	0	0	2	0	2	27
Total	65	0	0	65	1	5	72	78	0	0	0	0	2	3	0	5	148
Grand Total	154	2	0	156	1	6	164	171	1	4	2	7	2	4	0	6	340
Apprch %	98.7	1.3	0		0.6	3.5	95.9		14.3	57.1	28.6		33.3	66.7	0		
Total %	45.3	0.6	0	45.9	0.3	1.8	48.2	50.3	0.3	1.2	0.6	2.1	0.6	1.2	0	1.8	

	Sherman Road Southbound				Garbani Road Westbound				Sherman Road Northbound				Garbani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**27**	0	0	**27**	0	**1**	**35**	**36**	0	**1**	0	1	0	0	0	0	**64**
04:30 PM	23	**1**	0	24	0	0	19	19	0	1	0	1	0	**1**	0	**1**	45
04:45 PM	21	1	0	22	0	0	18	18	0	1	**2**	**3**	0	0	0	0	43
05:00 PM	16	0	0	16	0	1	24	25	0	0	0	0	0	1	0	1	42
Total Volume	87	2	0	89	0	2	96	98	0	3	2	5	0	2	0	2	194
% App. Total	97.8	2.2	0		0	2	98		0	60	40		0	100	0		
PHF	.806	.500	.000	.824	.000	.500	.686	.681	.000	.750	.250	.417	.000	.500	.000	.500	.758

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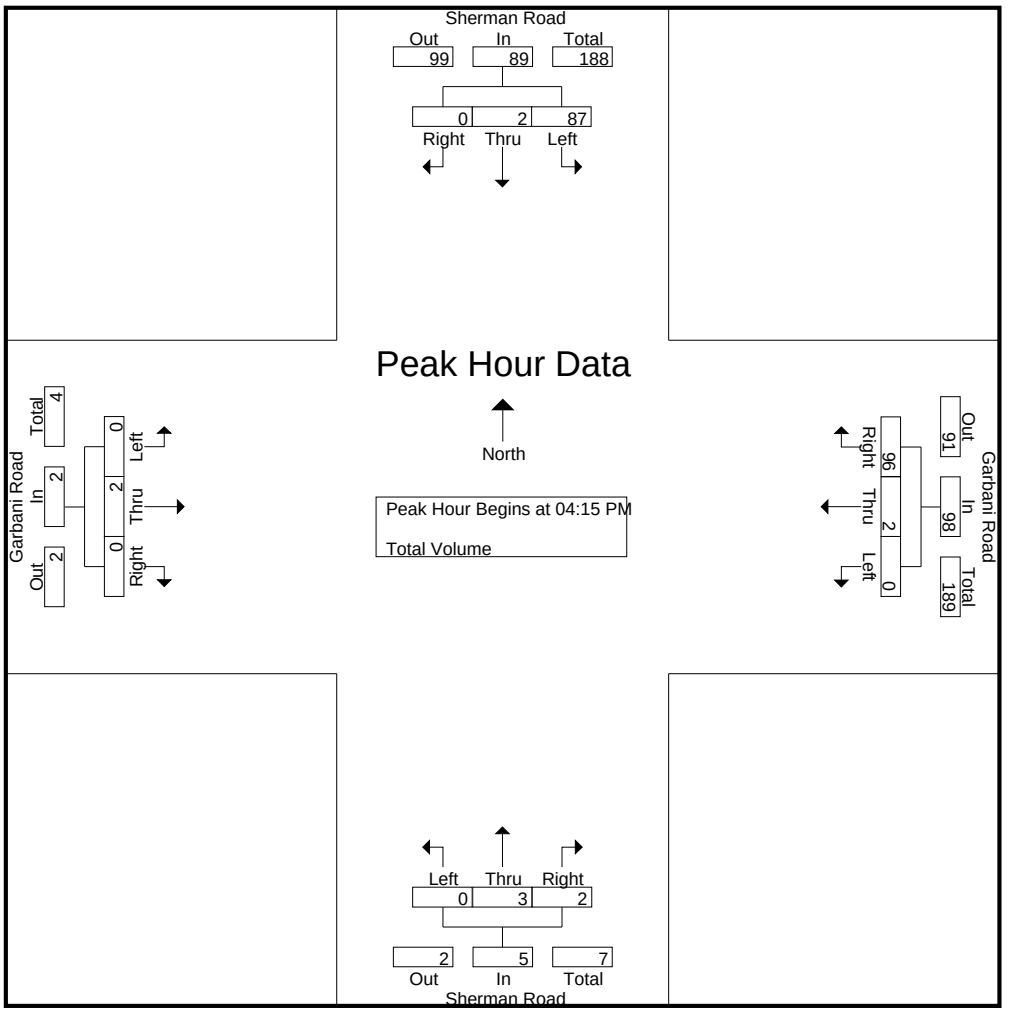
City of Menifee
N/S: Sherman Road
E/W: Garbani Road
Weather: Clear

File Name : 04_MEN_Sherman_Garbani PM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				04:00 PM				05:00 PM			
+0 mins.	18	0	0	18	0	**1**	**35**	**36**	**1**	**1**	0	2	0	1	0	1
+15 mins.	**27**	0	0	**27**	0	0	19	19	0	1	0	1	**1**	0	0	1
+30 mins.	23	**1**	0	24	0	0	18	18	0	1	0	1	1	0	0	1
+45 mins.	21	1	0	22	0	1	24	25	0	1	**2**	**3**	0	**2**	0	**2**
Total Volume	89	2	0	91	0	2	96	98	1	4	2	7	2	3	0	5
% App. Total	97.8	2.2	0		0	2	98		14.3	57.1	28.6		40	60	0	
PHF	.824	.500	.000	.843	.000	.500	.686	.681	.250	1.000	.250	.583	.500	.375	.000	.625

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City of Menifee
N/S: Haun Road
E/W: Newport Road
Weather: Clear

File Name : 12_MEN HANE AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Haun Road Southbound				Newport Road Westbound				Haun Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	28	4	4	36	174	280	39	493	22	9	98	129	23	314	31	368	1026
07:15 AM	16	15	5	36	225	282	66	573	31	20	133	184	23	373	68	464	1257
07:30 AM	38	11	10	59	168	255	98	521	49	21	156	226	31	357	62	450	1256
07:45 AM	28	8	11	47	142	240	119	501	33	27	182	242	44	388	45	477	1267
Total	110	38	30	178	709	1057	322	2088	135	77	569	781	121	1432	206	1759	4806
08:00 AM	34	12	11	57	96	177	77	350	36	30	116	182	49	240	33	322	911
08:15 AM	33	11	20	64	92	190	72	354	21	19	74	114	50	270	35	355	887
08:30 AM	44	13	15	72	122	251	80	453	34	25	95	154	33	260	38	331	1010
08:45 AM	40	18	24	82	146	227	91	464	37	13	87	137	42	232	56	330	1013
Total	151	54	70	275	456	845	320	1621	128	87	372	587	174	1002	162	1338	3821
Grand Total	261	92	100	453	1165	1902	642	3709	263	164	941	1368	295	2434	368	3097	8627
Apprch %	57.6	20.3	22.1		31.4	51.3	17.3		19.2	12	68.8		9.5	78.6	11.9		
Total %	3	1.1	1.2	5.3	13.5	22	7.4	43	3	1.9	10.9	15.9	3.4	28.2	4.3	35.9	

	Haun Road Southbound				Newport Road Westbound				Haun Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	28	4	4	36	174	280	39	493	22	9	98	129	23	314	31	368	1026
07:15 AM	16	**15**	5	36	**225**	**282**	66	**573**	31	20	133	184	23	373	**68**	464	1257
07:30 AM	**38**	11	10	**59**	168	255	98	521	**49**	21	156	226	31	357	62	450	1256
07:45 AM	28	8	**11**	47	142	240	**119**	501	33	**27**	**182**	**242**	**44**	**388**	45	**477**	**1267**
Total Volume	110	38	30	178	709	1057	322	2088	135	77	569	781	121	1432	206	1759	4806
% App. Total	61.8	21.3	16.9		34	50.6	15.4		17.3	9.9	72.9		6.9	81.4	11.7		
PHF	.724	.633	.682	.754	.788	.937	.676	.911	.689	.713	.782	.807	.688	.923	.757	.922	.948

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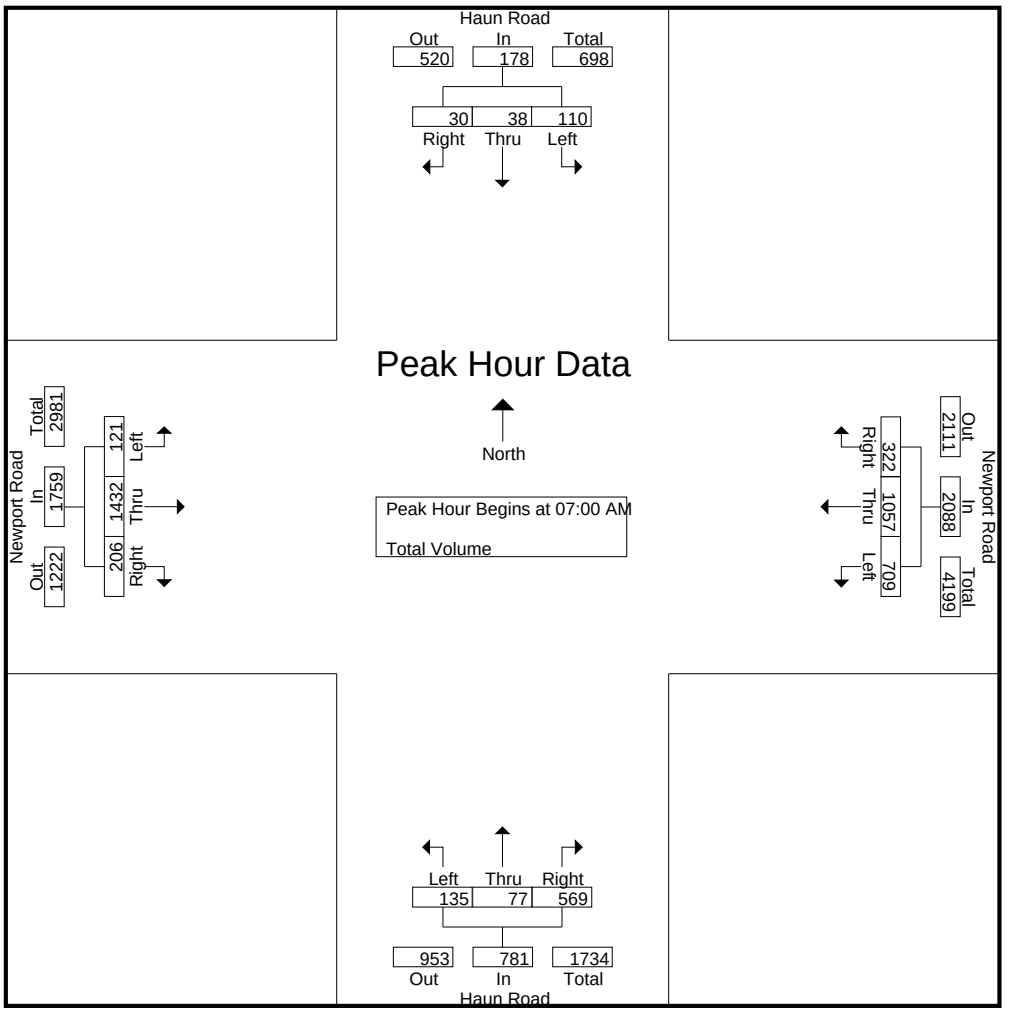
City of Menifee
N/S: Haun Road
E/W: Newport Road
Weather: Clear

File Name : 12_MEN HANE AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:00 AM				07:15 AM				07:00 AM			
+0 mins.	34	12	11	57	174	280	39	493	31	20	133	184	23	314	31	368
+15 mins.	33	11	20	64	**225**	**282**	66	**573**	**49**	21	156	226	23	373	**68**	464
+30 mins.	**44**	13	15	72	168	255	98	521	33	27	**182**	**242**	31	357	62	450
+45 mins.	40	**18**	**24**	**82**	142	240	**119**	501	36	**30**	116	182	**44**	**388**	45	**477**
Total Volume	151	54	70	275	709	1057	322	2088	149	98	587	834	121	1432	206	1759
% App. Total	54.9	19.6	25.5		34	50.6	15.4		17.9	11.8	70.4		6.9	81.4	11.7	
PHF	.858	.750	.729	.838	.788	.937	.676	.911	.760	.817	.806	.862	.688	.923	.757	.922

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City of Menifee
N/S: Haun Road
E/W: Newport Road
Weather: Clear

File Name : 12_MEN HANE PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Haun Road Southbound				Newport Road Westbound				Haun Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	89	45	26	160	150	235	42	427	76	23	187	286	32	332	51	415	1288
04:15 PM	56	29	30	115	195	277	58	530	80	20	171	271	33	234	67	334	1250
04:30 PM	67	34	25	126	183	202	40	425	69	14	185	268	32	259	55	346	1165
04:45 PM	70	30	36	136	230	298	69	597	89	30	222	341	34	280	75	389	1463
Total	282	138	117	537	758	1012	209	1979	314	87	765	1166	131	1105	248	1484	5166
05:00 PM	83	40	29	152	228	312	56	596	79	19	192	290	37	303	75	415	1453
05:15 PM	104	33	22	159	191	287	54	532	100	25	204	329	35	296	54	385	1405
05:30 PM	80	23	22	125	240	352	39	631	76	17	195	288	26	273	56	355	1399
05:45 PM	69	31	27	127	185	236	64	485	86	14	169	269	36	304	50	390	1271
Total	336	127	100	563	844	1187	213	2244	341	75	760	1176	134	1176	235	1545	5528
Grand Total	618	265	217	1100	1602	2199	422	4223	655	162	1525	2342	265	2281	483	3029	10694
Apprch %	56.2	24.1	19.7		37.9	52.1	10		28	6.9	65.1		8.7	75.3	15.9		
Total %	5.8	2.5	2	10.3	15	20.6	3.9	39.5	6.1	1.5	14.3	21.9	2.5	21.3	4.5	28.3	

	Haun Road Southbound				Newport Road Westbound				Haun Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	70	30	**36**	136	230	298	**69**	597	89	**30**	**222**	**341**	34	280	**75**	389	**1463**
05:00 PM	83	**40**	29	152	228	312	56	596	79	19	192	290	**37**	**303**	75	**415**	1453
05:15 PM	**104**	33	22	**159**	191	287	54	532	**100**	25	204	329	35	296	54	385	1405
05:30 PM	80	23	22	125	**240**	**352**	39	**631**	76	17	195	288	26	273	56	355	1399
Total Volume	337	126	109	572	889	1249	218	2356	344	91	813	1248	132	1152	260	1544	5720
% App. Total	58.9	22	19.1		37.7	53	9.3		27.6	7.3	65.1		8.5	74.6	16.8		
PHF	.810	.788	.757	.899	.926	.887	.790	.933	.860	.758	.916	.915	.892	.950	.867	.930	.977

Counts Unlimited
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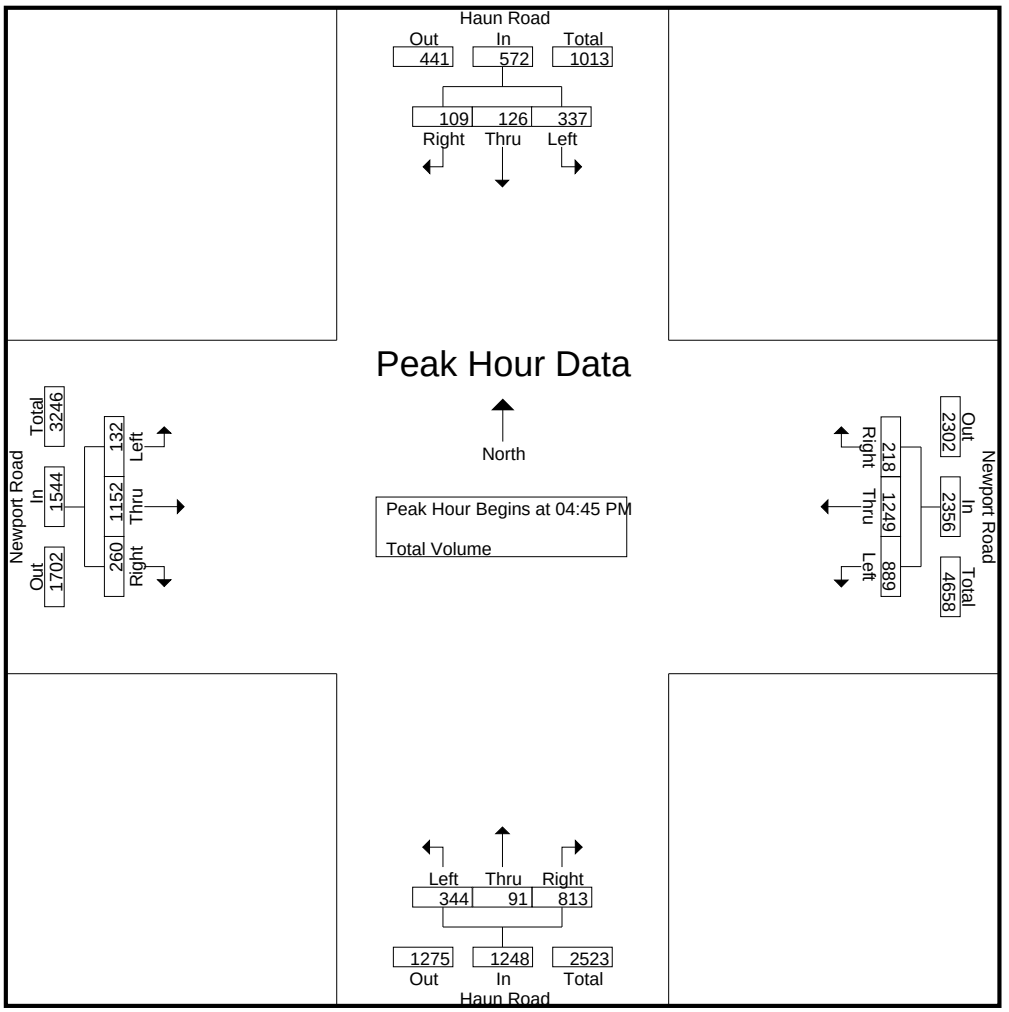
City of Menifee
N/S: Haun Road
E/W: Newport Road
Weather: Clear

File Name : 12_MEN HANE PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:45 PM				04:45 PM				05:00 PM			
+0 mins.	67	34	25	126	230	298	**69**	597	89	**30**	**222**	**341**	**37**	303	**75**	**415**
+15 mins.	70	30	**36**	136	228	312	56	596	79	19	192	290	35	296	54	385
+30 mins.	83	**40**	29	152	191	287	54	532	**100**	25	204	329	26	273	56	355
+45 mins.	**104**	33	22	**159**	**240**	**352**	39	**631**	76	17	195	288	36	**304**	50	390
Total Volume	324	137	112	573	889	1249	218	2356	344	91	813	1248	134	1176	235	1545
% App. Total	56.5	23.9	19.5		37.7	53	9.3		27.6	7.3	65.1		8.7	76.1	15.2	
PHF	.779	.856	.778	.901	.926	.887	.790	.933	.860	.758	.916	.915	.905	.967	.783	.931

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City of Menifee
N/S: Haun Road
E/W: Holland Road
Weather: Clear

File Name : 02_MEN_Haun_Holland AM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 1

Groups Printed- Total Volume

	Haun Road Southbound				Holland Road Westbound				Haun Road Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	13	80	93	0	2	2	4	57	31	0	88	56	1	39	96	281
07:15 AM	3	63	124	190	0	3	0	3	97	31	0	128	47	0	50	97	418
07:30 AM	1	60	70	131	3	0	1	4	60	55	0	115	57	1	63	121	371
07:45 AM	0	31	50	81	0	0	0	0	35	65	0	100	78	2	40	120	301
Total	4	167	324	495	3	5	3	11	249	182	0	431	238	4	192	434	1371
08:00 AM	3	29	45	77	0	0	0	0	18	57	0	75	64	1	29	94	246
08:15 AM	1	28	20	49	1	0	2	3	25	18	2	45	38	2	45	85	182
08:30 AM	2	21	20	43	2	2	2	6	25	29	0	54	43	2	40	85	188
08:45 AM	1	26	23	50	0	1	0	1	27	39	0	66	48	1	42	91	208
Total	7	104	108	219	3	3	4	10	95	143	2	240	193	6	156	355	824
Grand Total	11	271	432	714	6	8	7	21	344	325	2	671	431	10	348	789	2195
Apprch %	1.5	38	60.5		28.6	38.1	33.3		51.3	48.4	0.3		54.6	1.3	44.1		
Total %	0.5	12.3	19.7	32.5	0.3	0.4	0.3	1	15.7	14.8	0.1	30.6	19.6	0.5	15.9	35.9	

	Haun Road Southbound				Holland Road Westbound				Haun Road Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	13	80	93	0	2	**2**	**4**	57	31	0	88	56	1	39	96	281
07:15 AM	**3**	**63**	**124**	**190**	0	**3**	0	3	**97**	31	0	**128**	47	0	50	97	**418**
07:30 AM	1	60	70	131	**3**	0	1	4	60	55	0	115	57	1	**63**	**121**	371
07:45 AM	0	31	50	81	0	0	0	0	35	**65**	0	100	**78**	**2**	40	120	301
Total Volume	4	167	324	495	3	5	3	11	249	182	0	431	238	4	192	434	1371
% App. Total	0.8	33.7	65.5		27.3	45.5	27.3		57.8	42.2	0		54.8	0.9	44.2		
PHF	.333	.663	.653	.651	.250	.417	.375	.688	.642	.700	.000	.842	.763	.500	.762	.897	.820

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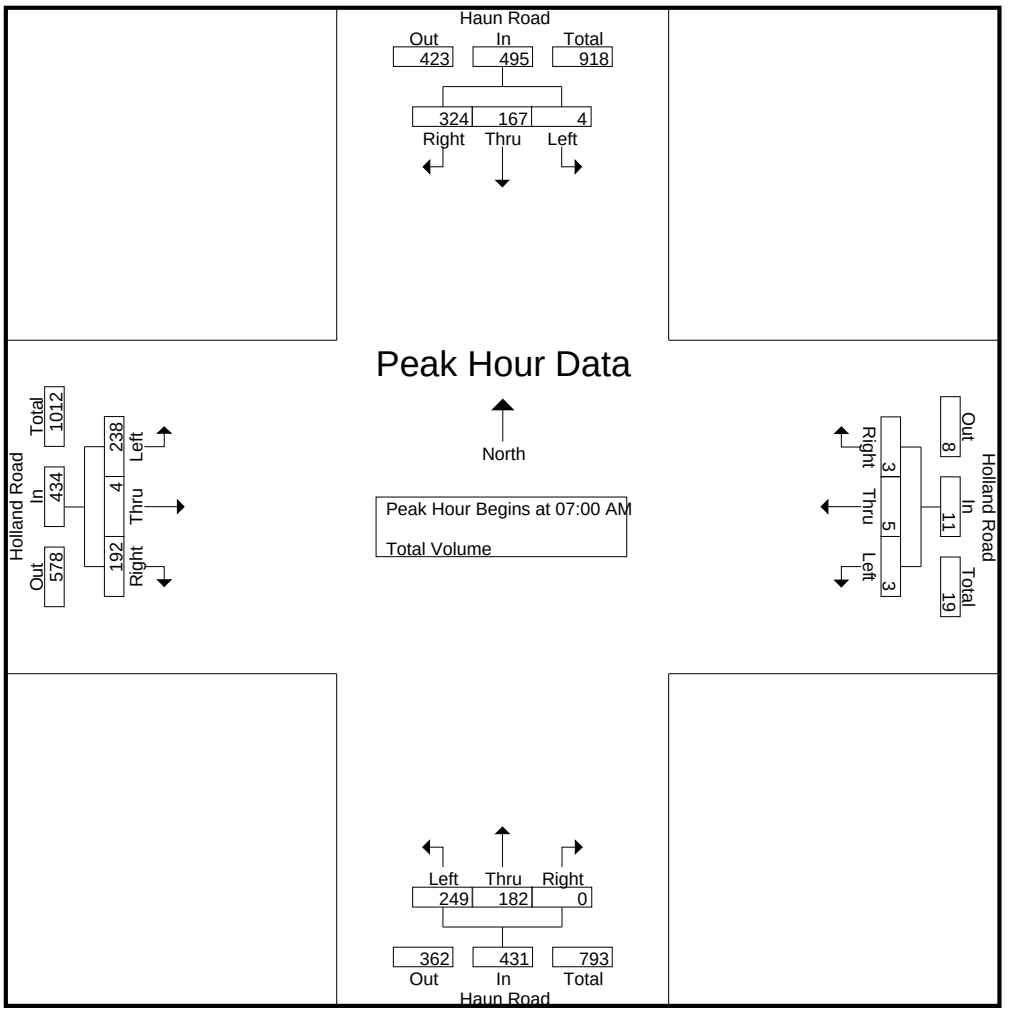
City of Menifee
N/S: Haun Road
E/W: Holland Road
Weather: Clear

File Name : 02_MEN_Haun_Holland AM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	13	80	93	0	2	**2**	**4**	57	31	0	88	56	1	39	96
+15 mins.	**3**	**63**	**124**	**190**	0	**3**	0	3	**97**	31	0	**128**	47	0	50	97
+30 mins.	1	60	70	131	**3**	0	1	4	60	55	0	115	57	1	**63**	**121**
+45 mins.	0	31	50	81	0	0	0	0	35	**65**	0	100	**78**	**2**	40	120
Total Volume	4	167	324	495	3	5	3	11	249	182	0	431	238	4	192	434
% App. Total	0.8	33.7	65.5		27.3	45.5	27.3		57.8	42.2	0		54.8	0.9	44.2	
PHF	.333	.663	.653	.651	.250	.417	.375	.688	.642	.700	.000	.842	.763	.500	.762	.897

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City of Menifee
N/S: Haun Road
E/W: Holland Road
Weather: Clear

File Name : 02_MEN_Haun_Holland PM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 1

Groups Printed- Total Volume

	Haun Road Southbound				Holland Road Westbound				Haun Road Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	45	59	105	1	0	1	2	60	52	0	112	55	0	43	98	317
04:15 PM	1	45	65	111	2	1	3	6	62	49	0	111	62	5	38	105	333
04:30 PM	2	62	90	154	0	0	2	2	62	55	0	117	61	1	35	97	370
04:45 PM	2	62	73	137	0	0	1	1	54	73	0	127	68	0	45	113	378
Total	6	214	287	507	3	1	7	11	238	229	0	467	246	6	161	413	1398
05:00 PM	0	66	64	130	0	0	1	1	70	54	2	126	55	1	22	78	335
05:15 PM	0	68	66	134	0	0	0	0	55	73	0	128	61	0	16	77	339
05:30 PM	0	59	62	121	0	0	0	0	65	53	0	118	75	0	28	103	342
05:45 PM	0	65	74	139	0	0	0	0	80	60	0	140	47	1	24	72	351
Total	0	258	266	524	0	0	1	1	270	240	2	512	238	2	90	330	1367
Grand Total	6	472	553	1031	3	1	8	12	508	469	2	979	484	8	251	743	2765
Apprch %	0.6	45.8	53.6		25	8.3	66.7		51.9	47.9	0.2		65.1	1.1	33.8		
Total %	0.2	17.1	20	37.3	0.1	0	0.3	0.4	18.4	17	0.1	35.4	17.5	0.3	9.1	26.9	

	Haun Road Southbound				Holland Road Westbound				Haun Road Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**2**	62	**90**	**154**	0	0	**2**	**2**	62	55	0	117	61	**1**	35	97	370
04:45 PM	2	62	73	137	0	0	1	1	54	**73**	0	127	**68**	0	**45**	**113**	**378**
05:00 PM	0	66	64	130	0	0	1	1	**70**	54	**2**	126	55	1	22	78	335
05:15 PM	0	**68**	66	134	0	0	0	0	55	73	0	**128**	61	0	16	77	339
Total Volume	4	258	293	555	0	0	4	4	241	255	2	498	245	2	118	365	1422
% App. Total	0.7	46.5	52.8		0	0	100		48.4	51.2	0.4		67.1	0.5	32.3		
PHF	.500	.949	.814	.901	.000	.000	.500	.500	.861	.873	.250	.973	.901	.500	.656	.808	.940

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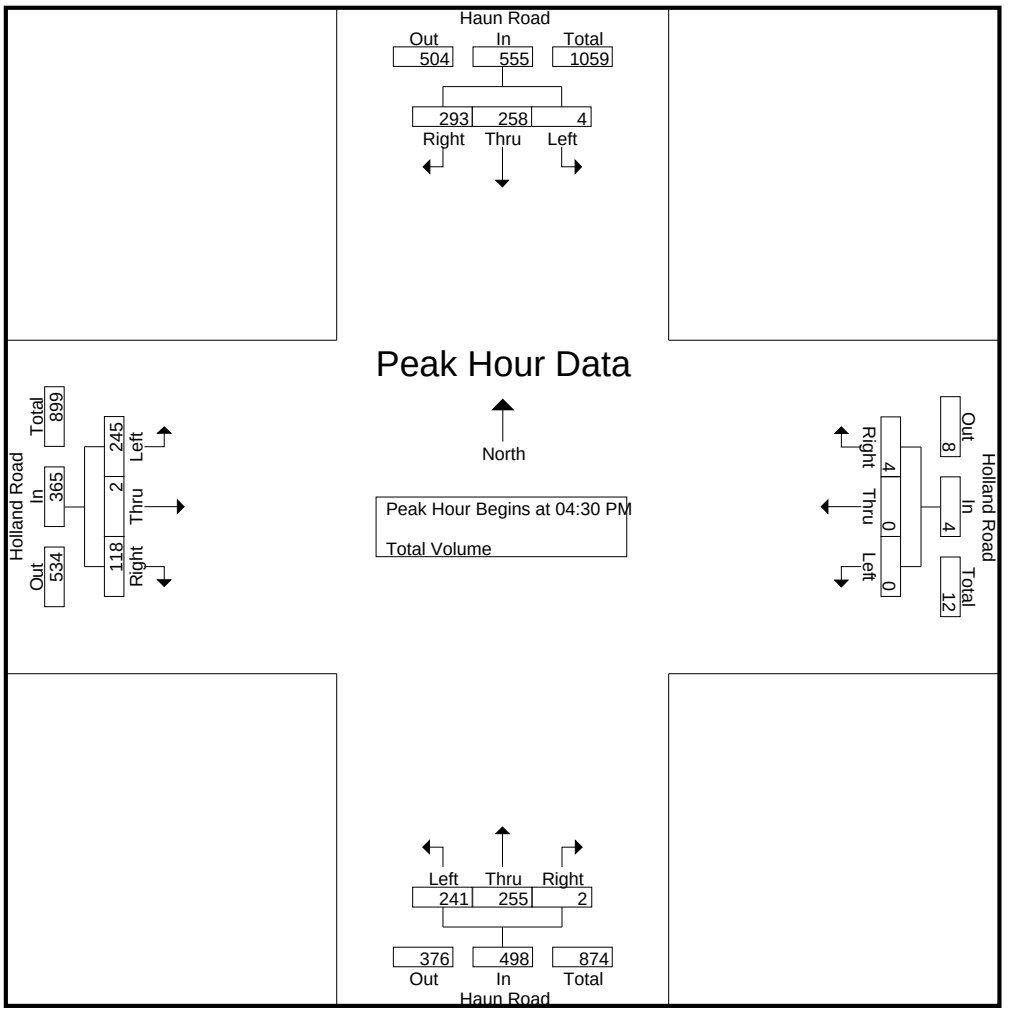
City of Menifee
N/S: Haun Road
E/W: Holland Road
Weather: Clear

File Name : 02_MEN_Haun_Holland PM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:00 PM				05:00 PM				04:00 PM			
+0 mins.	**2**	62	**90**	**154**	1	0	1	2	70	54	**2**	126	55	0	43	98
+15 mins.	2	62	73	137	**2**	**1**	**3**	**6**	55	**73**	0	128	62	**5**	38	105
+30 mins.	0	66	64	130	0	0	2	2	65	53	0	118	61	1	35	97
+45 mins.	0	**68**	66	134	0	0	1	1	**80**	60	0	**140**	**68**	0	**45**	**113**
Total Volume	4	258	293	555	3	1	7	11	270	240	2	512	246	6	161	413
% App. Total	0.7	46.5	52.8		27.3	9.1	63.6		52.7	46.9	0.4		59.6	1.5	39	
PHF	.500	.949	.814	.901	.375	.250	.583	.458	.844	.822	.250	.914	.904	.300	.894	.914

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City of Menifee
N/S: Haun Road
E/W: Garbani Road
Weather: Clear

File Name : 05_MEN_Haun_Garbani AM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 1

Groups Printed- Total Volume

	Haun Road Southbound				Garbani Road Westbound				Haun Road Northbound				Garbani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	49	2	51	1	0	0	1	88	78	0	166	1	0	38	39	257
07:15 AM	0	98	12	110	0	0	0	0	151	102	0	253	0	0	58	58	421
07:30 AM	0	109	11	120	0	0	1	1	80	65	0	145	8	0	92	100	366
07:45 AM	0	74	1	75	0	0	0	0	28	75	0	103	6	0	76	82	260
Total	0	330	26	356	1	0	1	2	347	320	0	667	15	0	264	279	1304
08:00 AM	0	52	2	54	0	0	1	1	7	62	0	69	2	0	14	16	140
08:15 AM	1	72	1	74	0	0	2	2	11	35	2	48	2	0	14	16	140
08:30 AM	0	61	0	61	0	0	0	0	11	49	0	60	2	0	19	21	142
08:45 AM	0	61	2	63	0	0	0	0	3	58	0	61	2	0	14	16	140
Total	1	246	5	252	0	0	3	3	32	204	2	238	8	0	61	69	562
Grand Total	1	576	31	608	1	0	4	5	379	524	2	905	23	0	325	348	1866
Apprch %	0.2	94.7	5.1		20	0	80		41.9	57.9	0.2		6.6	0	93.4		
Total %	0.1	30.9	1.7	32.6	0.1	0	0.2	0.3	20.3	28.1	0.1	48.5	1.2	0	17.4	18.6	

	Haun Road Southbound				Garbani Road Westbound				Haun Road Northbound				Garbani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	49	2	51	**1**	0	0	**1**	88	78	0	166	1	0	38	39	257
07:15 AM	0	98	**12**	110	0	0	0	0	**151**	**102**	0	**253**	0	0	58	58	**421**
07:30 AM	0	**109**	11	**120**	0	0	**1**	1	80	65	0	145	**8**	0	**92**	**100**	366
07:45 AM	0	74	1	75	0	0	0	0	28	75	0	103	6	0	76	82	260
Total Volume	0	330	26	356	1	0	1	2	347	320	0	667	15	0	264	279	1304
% App. Total	0	92.7	7.3		50	0	50		52	48	0		5.4	0	94.6		
PHF	.000	.757	.542	.742	.250	.000	.250	.500	.575	.784	.000	.659	.469	.000	.717	.698	.774

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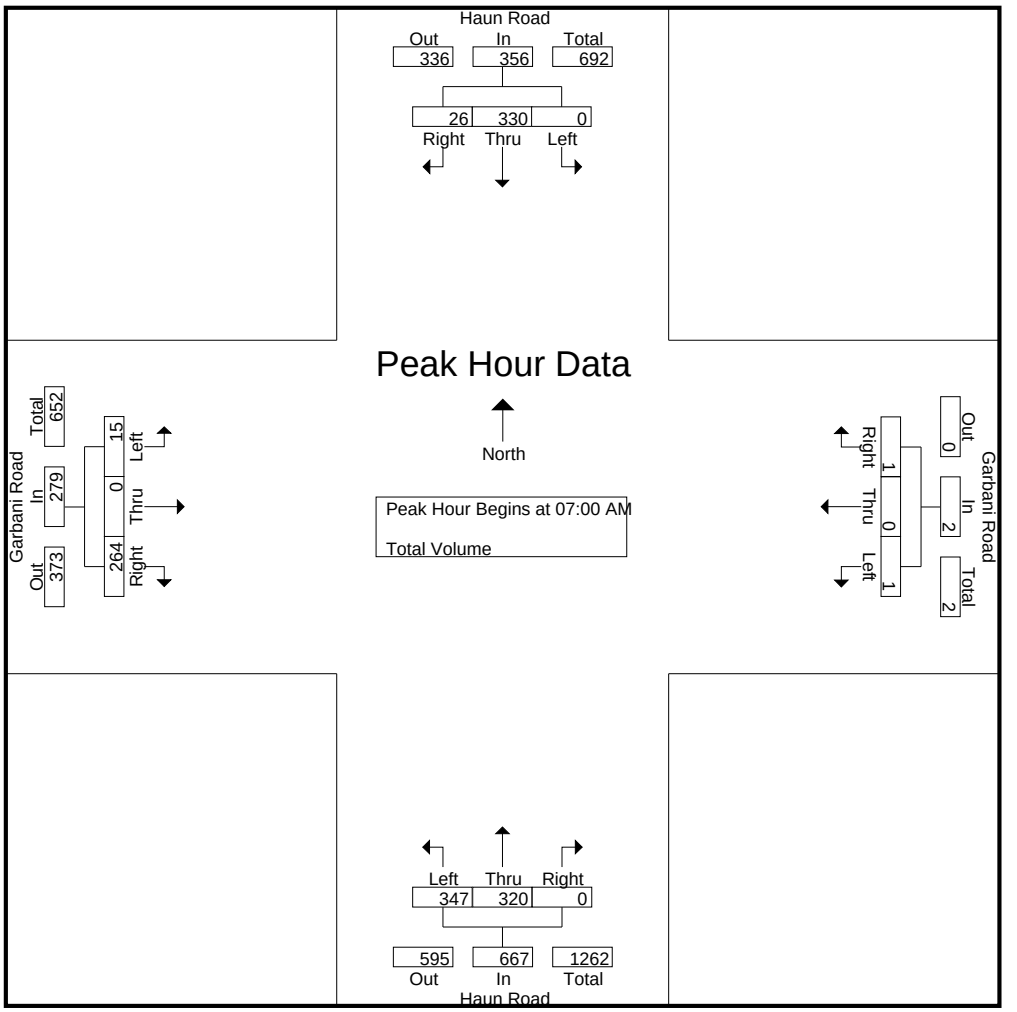
City of Menifee
N/S: Haun Road
E/W: Garbani Road
Weather: Clear

File Name : 05_MEN_Haun_Garbani AM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:00 AM				07:00 AM			
+0 mins.	0	98	**12**	110	0	0	1	1	88	78	0	166	1	0	38	39
+15 mins.	0	**109**	11	**120**	0	0	0	0	**151**	**102**	0	**253**	0	0	58	58
+30 mins.	0	74	1	75	0	0	1	1	80	65	0	145	**8**	0	**92**	**100**
+45 mins.	0	52	2	54	0	0	**2**	**2**	28	75	0	103	6	0	76	82
Total Volume	0	333	26	359	0	0	4	4	347	320	0	667	15	0	264	279
% App. Total	0	92.8	7.2		0	0	100		52	48	0		5.4	0	94.6	
PHF	.000	.764	.542	.748	.000	.000	.500	.500	.575	.784	.000	.659	.469	.000	.717	.698

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City of Menifee
N/S: Haun Road
E/W: Garbani Road
Weather: Clear

File Name : 05_MEN_Haun_Garbani PM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 1

Groups Printed- Total Volume

	Haun Road Southbound				Garbani Road Westbound				Haun Road Northbound				Garbani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	79	4	83	0	0	0	0	23	120	0	143	0	0	19	19	245
04:15 PM	0	78	5	83	0	0	0	0	27	107	0	134	0	0	27	27	244
04:30 PM	0	94	4	98	0	0	0	0	15	115	0	130	3	0	21	24	252
04:45 PM	0	91	0	91	4	0	0	4	18	123	0	141	3	0	20	23	259
Total	0	342	13	355	4	0	0	4	83	465	0	548	6	0	87	93	1000
05:00 PM	0	86	4	90	0	0	0	0	22	127	0	149	1	0	14	15	254
05:15 PM	0	69	5	74	0	0	0	0	20	117	1	138	1	0	16	17	229
05:30 PM	0	83	1	84	1	0	0	1	16	115	0	131	0	0	21	21	237
05:45 PM	2	78	3	83	0	0	0	0	13	135	0	148	3	0	12	15	246
Total	2	316	13	331	1	0	0	1	71	494	1	566	5	0	63	68	966
Grand Total	2	658	26	686	5	0	0	5	154	959	1	1114	11	0	150	161	1966
Apprch %	0.3	95.9	3.8		100	0	0		13.8	86.1	0.1		6.8	0	93.2		
Total %	0.1	33.5	1.3	34.9	0.3	0	0	0.3	7.8	48.8	0.1	56.7	0.6	0	7.6	8.2	

	Haun Road Southbound				Garbani Road Westbound				Haun Road Northbound				Garbani Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	78	**5**	83	0	0	0	0	**27**	107	0	134	0	0	**27**	**27**	244
04:30 PM	0	**94**	4	**98**	0	0	0	0	15	115	0	130	**3**	0	21	24	252
04:45 PM	0	91	0	91	**4**	0	0	**4**	18	123	0	141	3	0	20	23	**259**
05:00 PM	0	86	4	90	0	0	0	0	22	**127**	0	**149**	1	0	14	15	254
Total Volume	0	349	13	362	4	0	0	4	82	472	0	554	7	0	82	89	1009
% App. Total	0	96.4	3.6		100	0	0		14.8	85.2	0		7.9	0	92.1		
PHF	.000	.928	.650	.923	.250	.000	.000	.250	.759	.929	.000	.930	.583	.000	.759	.824	.974

Counts Unlimited
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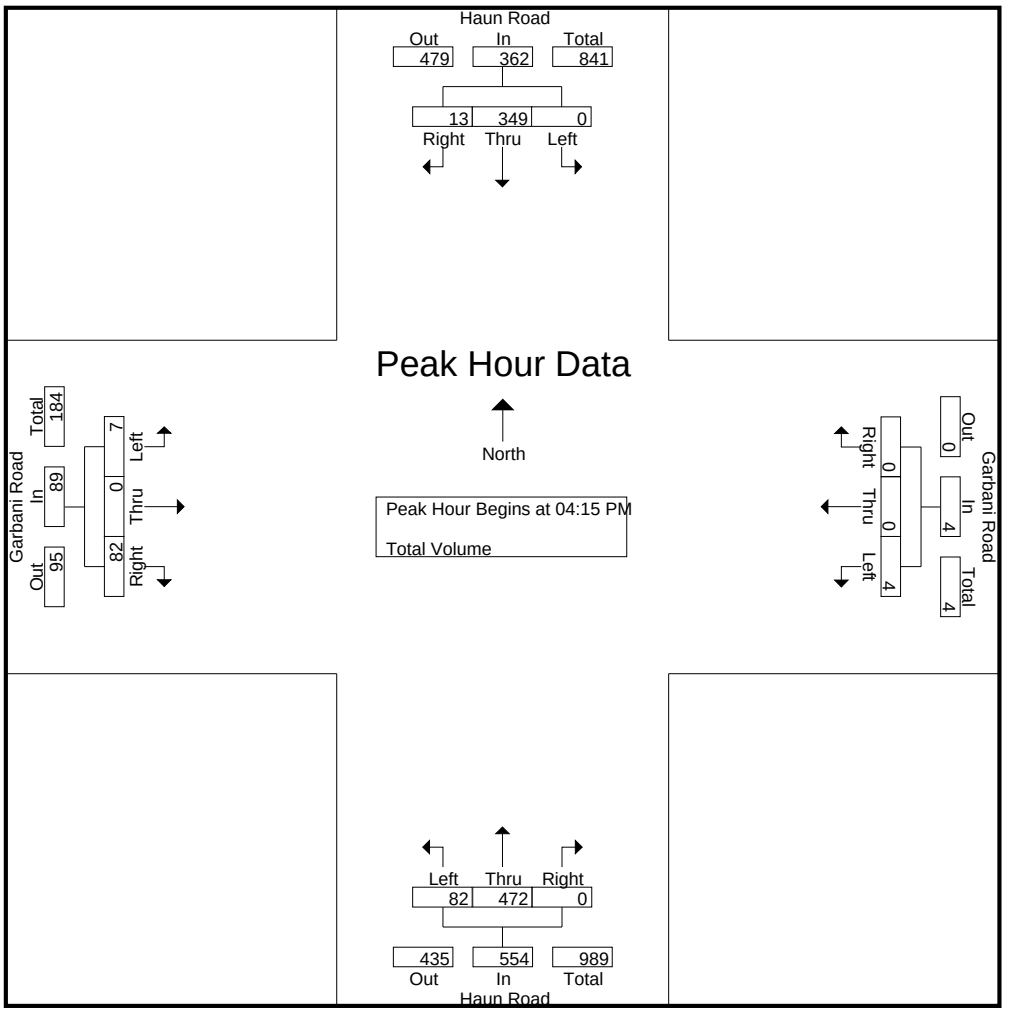
City of Menifee
N/S: Haun Road
E/W: Garbani Road
Weather: Clear

File Name : 05_MEN_Haun_Garbani PM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:45 PM				05:00 PM				04:00 PM			
+0 mins.	0	78	**5**	83	**4**	0	0	**4**	**22**	127	0	**149**	0	0	19	19
+15 mins.	0	**94**	4	**98**	0	0	0	0	20	117	**1**	138	0	0	**27**	**27**
+30 mins.	0	91	0	91	0	0	0	0	16	115	0	131	**3**	0	21	24
+45 mins.	0	86	4	90	1	0	0	1	13	**135**	0	148	3	0	20	23
Total Volume	0	349	13	362	5	0	0	5	71	494	1	566	6	0	87	93
% App. Total	0	96.4	3.6		100	0	0		12.5	87.3	0.2		6.5	0	93.5	
PHF	.000	.928	.650	.923	.313	.000	.000	.313	.807	.915	.250	.950	.500	.000	.806	.861

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City of Menifee
N/S: Haun Road/Zeiders Road
E/W: Scott Road
Weather: Clear

File Name : 07_MEN HASC AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Haun Road Southbound				Scott Road Westbound				Zeiders Road Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	114	8	8	130	9	77	144	230	5	31	4	40	20	111	1	132	532
07:15 AM	136	12	11	159	16	84	194	294	6	47	6	59	29	122	1	152	664
07:30 AM	151	15	12	178	11	92	89	192	8	25	7	40	12	85	2	99	509
07:45 AM	127	10	8	145	17	88	58	163	4	9	7	20	5	105	5	115	443
Total	528	45	39	612	53	341	485	879	23	112	24	159	66	423	9	498	2148
08:00 AM	99	6	9	114	8	74	42	124	6	1	7	14	13	102	6	121	373
08:15 AM	94	5	8	107	6	64	33	103	7	1	5	13	13	95	4	112	335
08:30 AM	59	2	14	75	13	76	40	129	3	3	3	9	10	111	2	123	336
08:45 AM	66	5	6	77	14	88	36	138	2	3	7	12	10	98	5	113	340
Total	318	18	37	373	41	302	151	494	18	8	22	48	46	406	17	469	1384
Grand Total	846	63	76	985	94	643	636	1373	41	120	46	207	112	829	26	967	3532
Apprch %	85.9	6.4	7.7		6.8	46.8	46.3		19.8	58	22.2		11.6	85.7	2.7		
Total %	24	1.8	2.2	27.9	2.7	18.2	18	38.9	1.2	3.4	1.3	5.9	3.2	23.5	0.7	27.4	

	Haun Road Southbound				Scott Road Westbound				Zeiders Road Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	114	8	8	130	9	77	144	230	5	31	4	40	20	111	1	132	532
07:15 AM	136	12	11	159	16	84	**194**	**294**	6	**47**	6	**59**	**29**	**122**	1	**152**	**664**
07:30 AM	**151**	**15**	**12**	**178**	11	**92**	89	192	**8**	25	**7**	40	12	85	2	99	509
07:45 AM	127	10	8	145	**17**	88	58	163	4	9	7	20	5	105	**5**	115	443
Total Volume	528	45	39	612	53	341	485	879	23	112	24	159	66	423	9	498	2148
% App. Total	86.3	7.4	6.4		6	38.8	55.2		14.5	70.4	15.1		13.3	84.9	1.8		
PHF	.874	.750	.813	.860	.779	.927	.625	.747	.719	.596	.857	.674	.569	.867	.450	.819	.809

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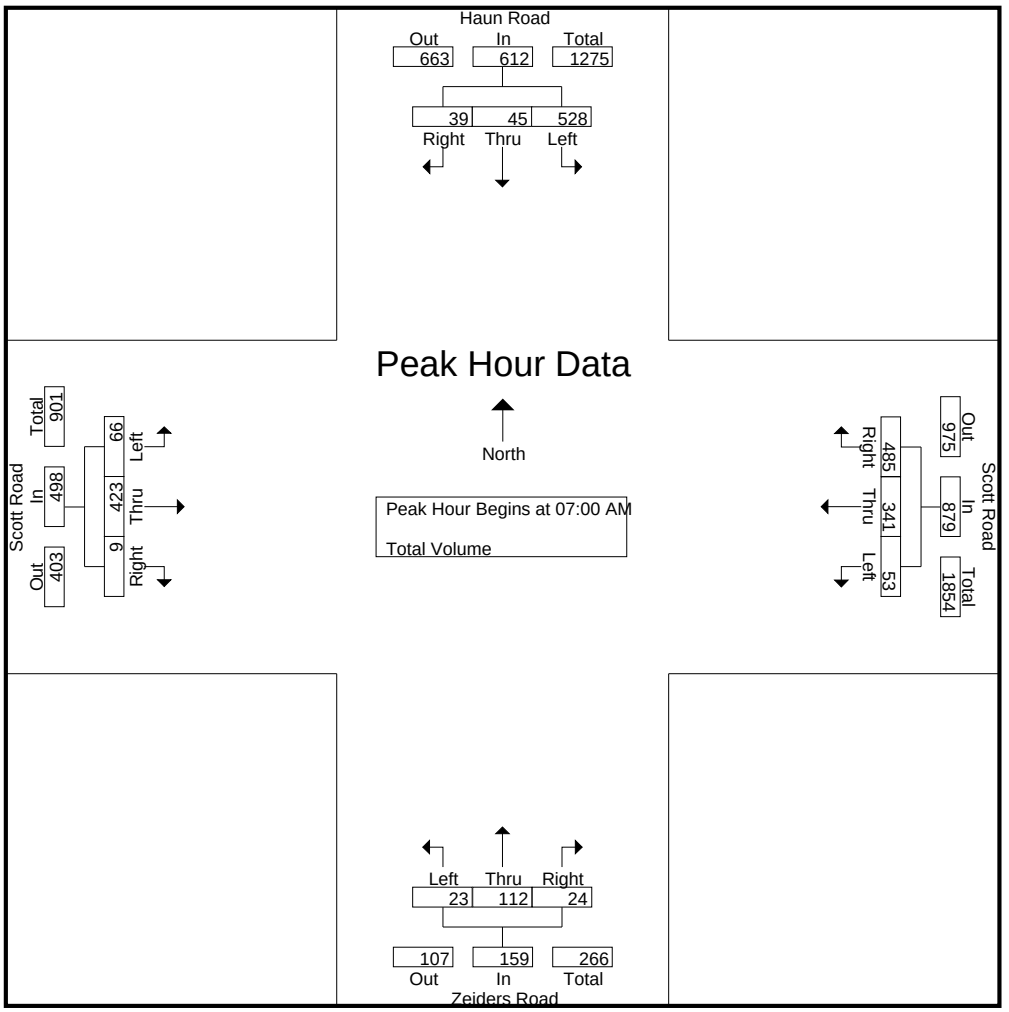
City of Menifee
N/S: Haun Road/Zeiders Road
E/W: Scott Road
Weather: Clear

File Name : 07_MEN HASC AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	114	8	8	130	9	77	144	230	5	31	4	40	20	111	1	132
+15 mins.	136	12	11	159	16	84	**194**	**294**	6	**47**	6	**59**	**29**	**122**	1	**152**
+30 mins.	**151**	**15**	**12**	**178**	11	**92**	89	192	**8**	25	**7**	40	12	85	2	99
+45 mins.	127	10	8	145	**17**	88	58	163	4	9	7	20	5	105	**5**	115
Total Volume	528	45	39	612	53	341	485	879	23	112	24	159	66	423	9	498
% App. Total	86.3	7.4	6.4		6	38.8	55.2		14.5	70.4	15.1		13.3	84.9	1.8	
PHF	.874	.750	.813	.860	.779	.927	.625	.747	.719	.596	.857	.674	.569	.867	.450	.819

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City of Menifee
N/S: Haun Road/Zeiders Road
E/W: Scott Road
Weather: Clear

File Name : 07_MEN HASC PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Haun Road Southbound				Scott Road Westbound				Zeiders Road Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	93	7	12	112	14	112	87	213	7	9	15	31	6	80	1	87	443
04:15 PM	72	9	13	94	15	94	82	191	9	10	6	25	11	89	4	104	414
04:30 PM	69	9	16	94	11	101	74	186	9	8	8	25	10	97	5	112	417
04:45 PM	85	9	8	102	25	104	93	222	4	15	13	32	10	94	2	106	462
Total	319	34	49	402	65	411	336	812	29	42	42	113	37	360	12	409	1736
05:00 PM	77	6	15	98	10	107	117	234	10	12	11	33	8	106	3	117	482
05:15 PM	92	1	4	97	17	116	108	241	8	6	6	20	7	127	6	140	498
05:30 PM	71	9	9	89	12	113	124	249	11	17	6	34	7	89	5	101	473
05:45 PM	79	3	15	97	16	105	118	239	4	16	9	29	17	113	6	136	501
Total	319	19	43	381	55	441	467	963	33	51	32	116	39	435	20	494	1954
Grand Total	638	53	92	783	120	852	803	1775	62	93	74	229	76	795	32	903	3690
Apprch %	81.5	6.8	11.7		6.8	48	45.2		27.1	40.6	32.3		8.4	88	3.5		
Total %	17.3	1.4	2.5	21.2	3.3	23.1	21.8	48.1	1.7	2.5	2	6.2	2.1	21.5	0.9	24.5	

	Haun Road Southbound				Scott Road Westbound				Zeiders Road Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	77	6	**15**	**98**	10	107	117	234	10	12	**11**	33	8	106	3	117	482
05:15 PM	**92**	1	4	97	**17**	**116**	108	241	8	6	6	20	7	**127**	**6**	**140**	498
05:30 PM	71	**9**	9	89	12	113	**124**	**249**	**11**	**17**	6	**34**	7	89	5	101	473
05:45 PM	79	3	15	97	16	105	118	239	4	16	9	29	**17**	113	6	136	**501**
Total Volume	319	19	43	381	55	441	467	963	33	51	32	116	39	435	20	494	1954
% App. Total	83.7	5	11.3		5.7	45.8	48.5		28.4	44	27.6		7.9	88.1	4		
PHF	.867	.528	.717	.972	.809	.950	.942	.967	.750	.750	.727	.853	.574	.856	.833	.882	.975

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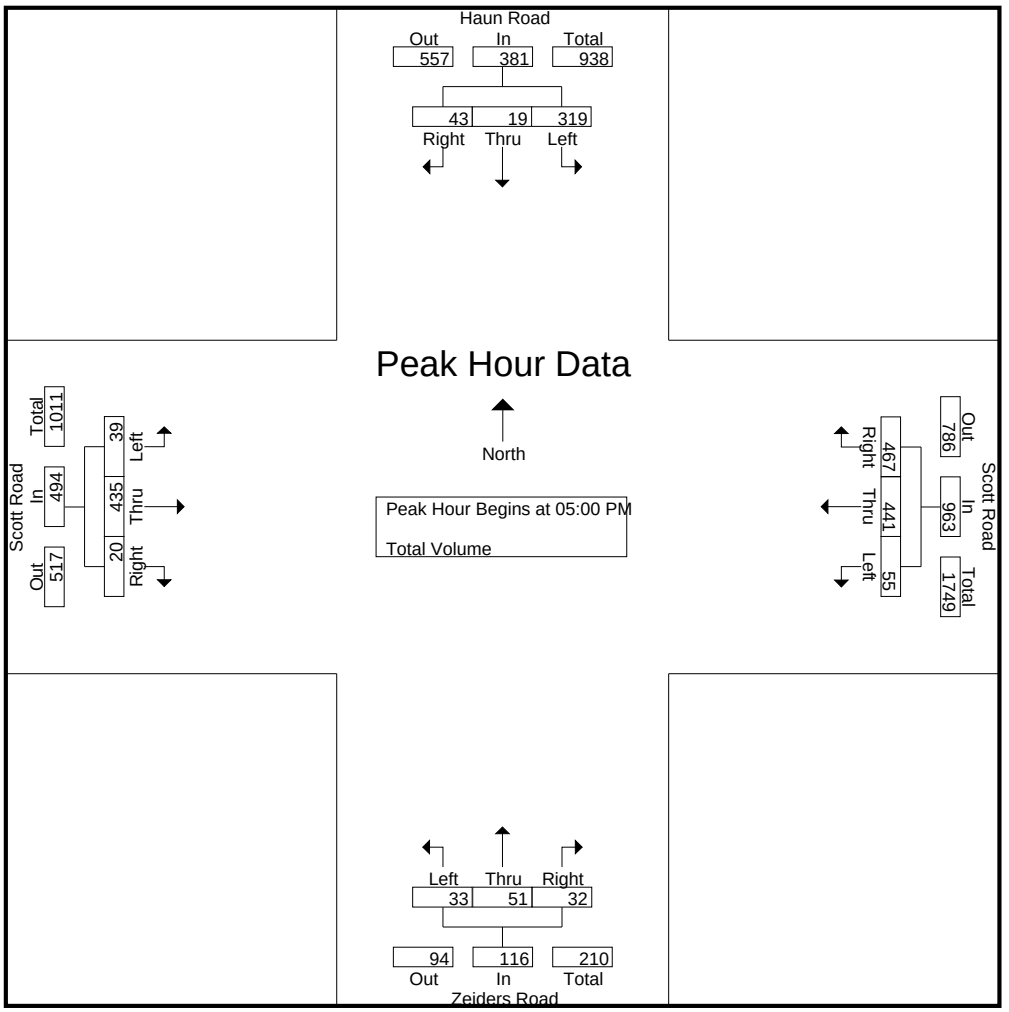
City of Menifee
N/S: Haun Road/Zeiders Road
E/W: Scott Road
Weather: Clear

File Name : 07_MEN HASC PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:45 PM				05:00 PM			
+0 mins.	**93**	7	12	**112**	10	107	117	234	4	15	**13**	32	8	106	3	117
+15 mins.	72	**9**	13	94	**17**	**116**	108	241	10	12	11	33	7	**127**	**6**	**140**
+30 mins.	69	9	**16**	94	12	113	**124**	**249**	8	6	6	20	7	89	5	101
+45 mins.	85	9	8	102	16	105	118	239	**11**	**17**	6	**34**	**17**	113	6	136
Total Volume	319	34	49	402	55	441	467	963	33	50	36	119	39	435	20	494
% App. Total	79.4	8.5	12.2		5.7	45.8	48.5		27.7	42	30.3		7.9	88.1	4	
PHF	.858	.944	.766	.897	.809	.950	.942	.967	.750	.735	.692	.875	.574	.856	.833	.882

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City of Menifee
N/S: I-215 Southbound Ramps
E/W: Newport Road
Weather: Clear

File Name : 19_MEN 215SNE AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	I-215 Southbound Ramps Southbound				Newport Road Westbound				I-215 Southbound On Ramp Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	53	0	90	143	0	405	231	636	0	0	0	0	0	310	129	439	1218
07:15 AM	72	0	109	181	0	468	252	720	0	0	0	0	0	333	186	519	1420
07:30 AM	84	0	106	190	0	421	305	726	0	0	0	0	0	400	158	558	1474
07:45 AM	124	0	134	258	0	372	269	641	0	0	0	0	0	446	157	603	1502
Total	333	0	439	772	0	1666	1057	2723	0	0	0	0	0	1489	630	2119	5614
08:00 AM	78	0	101	179	0	255	250	505	0	0	0	0	0	281	117	398	1082
08:15 AM	62	0	98	160	0	259	227	486	0	0	0	0	0	255	126	381	1027
08:30 AM	76	0	110	186	0	346	235	581	0	0	0	0	0	261	129	390	1157
08:45 AM	76	0	105	181	0	359	228	587	0	0	0	0	0	256	107	363	1131
Total	292	0	414	706	0	1219	940	2159	0	0	0	0	0	1053	479	1532	4397
Grand Total	625	0	853	1478	0	2885	1997	4882	0	0	0	0	0	2542	1109	3651	10011
Apprch %	42.3	0	57.7		0	59.1	40.9		0	0	0		0	69.6	30.4		
Total %	6.2	0	8.5	14.8	0	28.8	19.9	48.8	0	0	0	0	0	25.4	11.1	36.5	

	I-215 Southbound Ramps Southbound				Newport Road Westbound				I-215 Southbound On Ramp Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	53	0	90	143	0	405	231	636	0	0	0	0	0	310	129	439	1218
07:15 AM	72	0	109	181	0	**468**	252	720	0	0	0	0	0	333	**186**	519	1420
07:30 AM	84	0	106	190	0	421	**305**	**726**	0	0	0	0	0	400	158	558	1474
07:45 AM	**124**	0	**134**	**258**	0	372	269	641	0	0	0	0	0	**446**	157	**603**	**1502**
Total Volume	333	0	439	772	0	1666	1057	2723	0	0	0	0	0	1489	630	2119	5614
% App. Total	43.1	0	56.9		0	61.2	38.8		0	0	0		0	70.3	29.7		
PHF	.671	.000	.819	.748	.000	.890	.866	.938	.000	.000	.000	.000	.000	.835	.847	.879	.934

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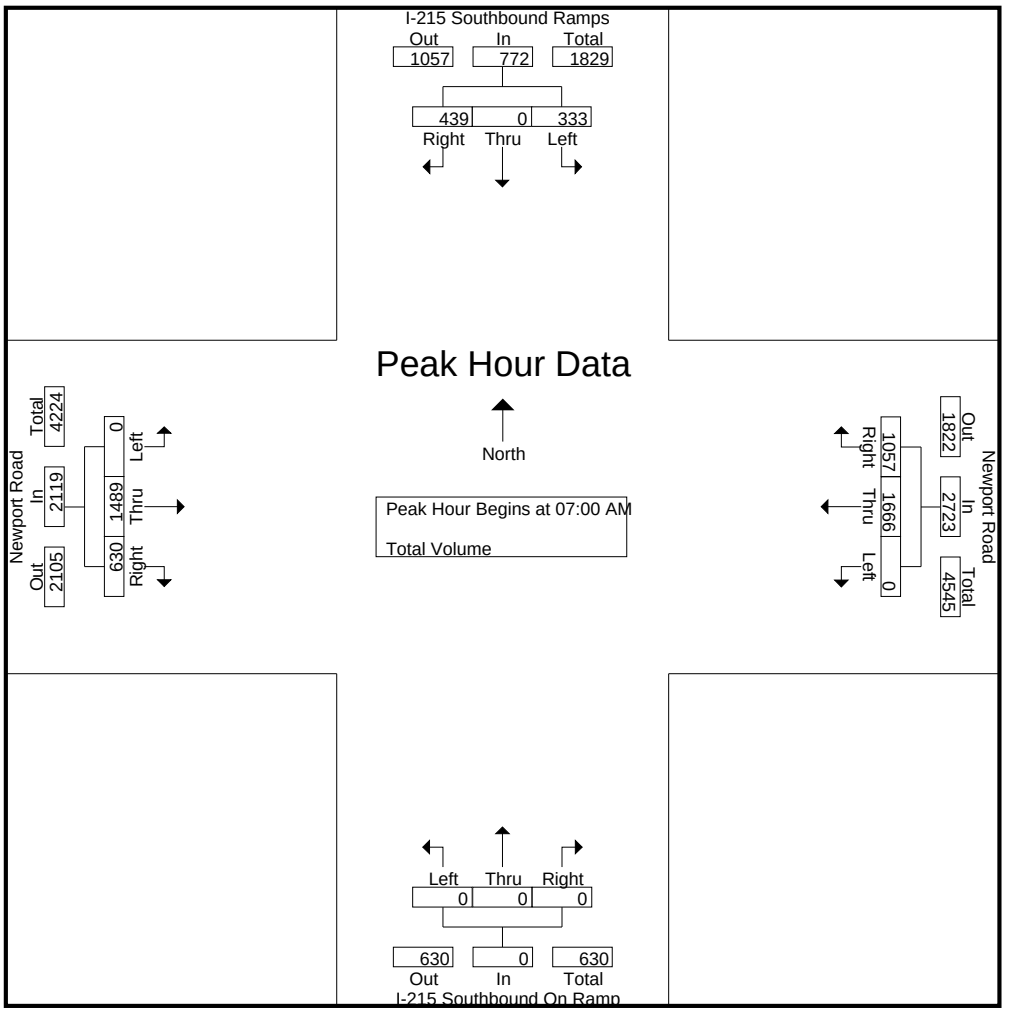
City of Menifee
N/S: I-215 Southbound Ramps
E/W: Newport Road
Weather: Clear

File Name : 19_MEN 215SNE AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	72	0	109	181	0	405	231	636	0	0	0	0	0	310	129	439
+15 mins.	84	0	106	190	0	**468**	252	720	0	0	0	0	0	333	**186**	519
+30 mins.	**124**	0	**134**	**258**	0	421	**305**	**726**	0	0	0	0	0	400	158	558
+45 mins.	78	0	101	179	0	372	269	641	0	0	0	0	0	**446**	157	**603**
Total Volume	358	0	450	808	0	1666	1057	2723	0	0	0	0	0	1489	630	2119
% App. Total	44.3	0	55.7		0	61.2	38.8		0	0	0		0	70.3	29.7	
PHF	.722	.000	.840	.783	.000	.890	.866	.938	.000	.000	.000	.000	.000	.835	.847	.879

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City of Menifee
N/S: I-215 Southbound Ramps
E/W: Newport Road
Weather: Clear

File Name : 19_MEN 215SNE PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	I-215 Southbound Ramps Southbound				Newport Road Westbound				I-215 Southbound On Ramp Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	83	0	106	189	0	327	137	464	0	0	0	0	0	478	130	608	1261
04:15 PM	95	0	117	212	0	421	155	576	0	0	0	0	0	393	70	463	1251
04:30 PM	99	0	96	195	0	345	155	500	0	0	0	0	0	409	93	502	1197
04:45 PM	102	0	145	247	0	440	130	570	0	0	0	0	0	442	132	574	1391
Total	379	0	464	843	0	1533	577	2110	0	0	0	0	0	1722	425	2147	5100
05:00 PM	108	0	153	261	0	426	118	544	0	0	0	0	0	456	131	587	1392
05:15 PM	109	0	128	237	0	407	113	520	0	0	0	0	0	493	103	596	1353
05:30 PM	100	0	156	256	0	448	103	551	0	0	0	0	0	453	100	553	1360
05:45 PM	103	0	93	196	0	418	151	569	0	0	0	0	0	459	74	533	1298
Total	420	0	530	950	0	1699	485	2184	0	0	0	0	0	1861	408	2269	5403
Grand Total	799	0	994	1793	0	3232	1062	4294	0	0	0	0	0	3583	833	4416	10503
Apprch %	44.6	0	55.4		0	75.3	24.7		0	0	0		0	81.1	18.9		
Total %	7.6	0	9.5	17.1	0	30.8	10.1	40.9	0	0	0	0	0	34.1	7.9	42	

	I-215 Southbound Ramps Southbound				Newport Road Westbound				I-215 Southbound On Ramp Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	102	0	145	247	0	440	**130**	**570**	0	0	0	0	0	442	**132**	574	1391
05:00 PM	108	0	153	**261**	0	426	118	544	0	0	0	0	0	456	131	587	**1392**
05:15 PM	**109**	0	128	237	0	407	113	520	0	0	0	0	0	**493**	103	**596**	1353
05:30 PM	100	0	**156**	256	0	**448**	103	551	0	0	0	0	0	453	100	553	1360
Total Volume	419	0	582	1001	0	1721	464	2185	0	0	0	0	0	1844	466	2310	5496
% App. Total	41.9	0	58.1		0	78.8	21.2		0	0	0		0	79.8	20.2		
PHF	.961	.000	.933	.959	.000	.960	.892	.958	.000	.000	.000	.000	.000	.935	.883	.969	.987

Counts Unlimited
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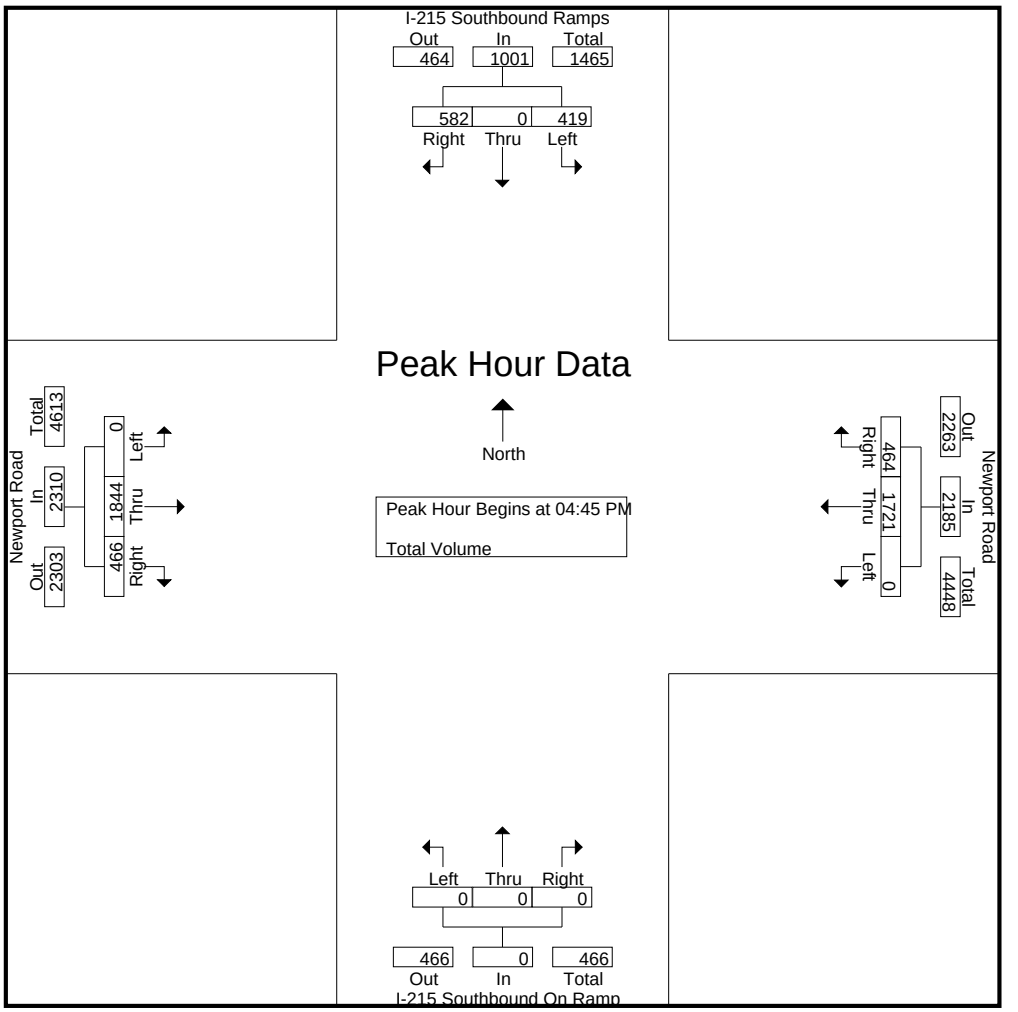
City of Menifee
N/S: I-215 Southbound Ramps
E/W: Newport Road
Weather: Clear

File Name : 19_MEN 215SNE PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:15 PM				04:00 PM				04:45 PM			
+0 mins.	102	0	145	247	0	421	**155**	**576**	0	0	0	0	0	442	**132**	574
+15 mins.	108	0	153	**261**	0	345	155	500	0	0	0	0	0	456	131	587
+30 mins.	**109**	0	128	237	0	**440**	130	570	0	0	0	0	0	**493**	103	**596**
+45 mins.	100	0	**156**	256	0	426	118	544	0	0	0	0	0	453	100	553
Total Volume	419	0	582	1001	0	1632	558	2190	0	0	0	0	0	1844	466	2310
% App. Total	41.9	0	58.1		0	74.5	25.5		0	0	0		0	79.8	20.2	
PHF	.961	.000	.933	.959	.000	.927	.900	.951	.000	.000	.000	.000	.000	.935	.883	.969

Counts Unlimited
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City of Menifee
N/S: I-215 Southbound Ramps
E/W: Scott Road
Weather: Clear

File Name : 25_MEN 215SSC AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	I-215 Southbound Off Ramp Southbound				Scott Road Westbound				I-215 Southbound On Ramp Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	69	0	36	105	47	198	0	245	0	0	0	0	0	109	73	182	532
07:15 AM	72	0	35	107	65	206	0	271	0	0	0	0	0	144	103	247	625
07:30 AM	70	0	41	111	110	144	0	254	0	0	0	0	0	113	90	203	568
07:45 AM	94	0	34	128	102	134	0	236	0	0	0	0	0	126	97	223	587
Total	305	0	146	451	324	682	0	1006	0	0	0	0	0	492	363	855	2312
08:00 AM	86	0	24	110	108	108	0	216	0	0	0	0	0	118	89	207	533
08:15 AM	80	0	16	96	149	89	0	238	0	0	0	0	0	93	83	176	510
08:30 AM	67	0	26	93	135	104	0	239	0	0	0	0	0	87	90	177	509
08:45 AM	70	0	32	102	117	111	0	228	0	0	0	0	0	84	62	146	476
Total	303	0	98	401	509	412	0	921	0	0	0	0	0	382	324	706	2028
Grand Total	608	0	244	852	833	1094	0	1927	0	0	0	0	0	874	687	1561	4340
Apprch %	71.4	0	28.6		43.2	56.8	0		0	0	0		0	56	44		
Total %	14	0	5.6	19.6	19.2	25.2	0	44.4	0	0	0	0	0	20.1	15.8	36	

	I-215 Southbound Off Ramp Southbound				Scott Road Westbound				I-215 Southbound On Ramp Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	72	0	35	107	65	**206**	0	**271**	0	0	0	0	0	**144**	**103**	**247**	**625**
07:30 AM	70	0	**41**	111	**110**	144	0	254	0	0	0	0	0	113	90	203	568
07:45 AM	**94**	0	34	**128**	102	134	0	236	0	0	0	0	0	126	97	223	587
08:00 AM	86	0	24	110	108	108	0	216	0	0	0	0	0	118	89	207	533
Total Volume	322	0	134	456	385	592	0	977	0	0	0	0	0	501	379	880	2313
% App. Total	70.6	0	29.4		39.4	60.6	0		0	0	0		0	56.9	43.1		
PHF	.856	.000	.817	.891	.875	.718	.000	.901	.000	.000	.000	.000	.000	.870	.920	.891	.925

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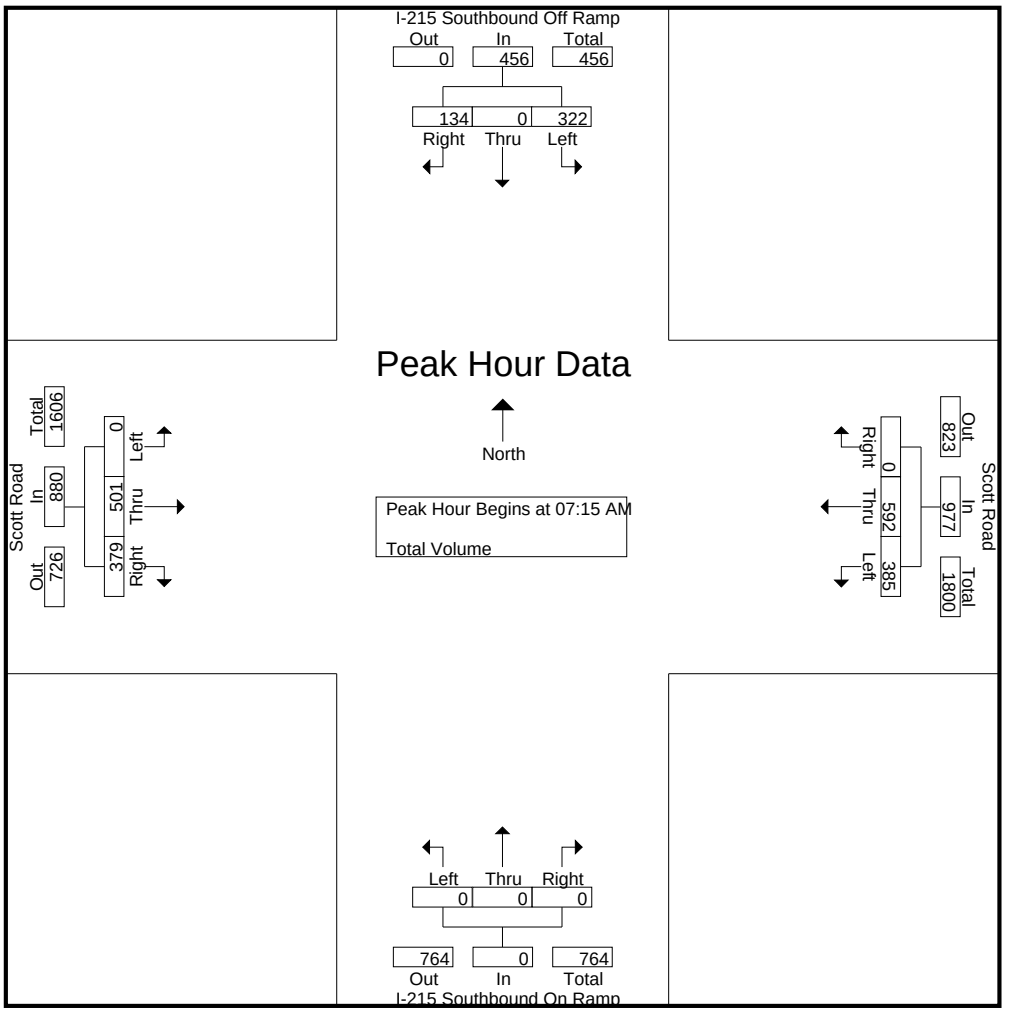
City of Menifee
N/S: I-215 Southbound Ramps
E/W: Scott Road
Weather: Clear

File Name : 25_MEN 215SSC AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				07:15 AM			
+0 mins.	72	0	35	107	47	198	0	245	0	0	0	0	0	**144**	**103**	**247**
+15 mins.	70	0	**41**	111	65	**206**	0	**271**	0	0	0	0	0	113	90	203
+30 mins.	**94**	0	34	**128**	**110**	144	0	254	0	0	0	0	0	126	97	223
+45 mins.	86	0	24	110	102	134	0	236	0	0	0	0	0	118	89	207
Total Volume	322	0	134	456	324	682	0	1006	0	0	0	0	0	501	379	880
% App. Total	70.6	0	29.4		32.2	67.8	0		0	0	0		0	56.9	43.1	
PHF	.856	.000	.817	.891	.736	.828	.000	.928	.000	.000	.000	.000	.000	.870	.920	.891

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City of Menifee
N/S: I-215 Southbound Ramps
E/W: Scott Road
Weather: Clear

File Name : 25_MEN 215SSC PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	I-215 Southbound Off Ramp Southbound				Scott Road Westbound				I-215 Southbound On Ramp Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	102	0	33	135	102	157	0	259	0	0	0	0	0	114	55	169	563
04:15 PM	99	0	45	144	108	195	0	303	0	0	0	0	0	131	49	180	627
04:30 PM	101	0	47	148	103	149	0	252	0	0	0	0	0	118	55	173	573
04:45 PM	90	0	30	120	100	179	0	279	0	0	0	0	0	134	79	213	612
Total	392	0	155	547	413	680	0	1093	0	0	0	0	0	497	238	735	2375
05:00 PM	89	0	27	116	85	171	0	256	0	0	0	0	0	115	43	158	530
05:15 PM	101	1	32	134	84	164	0	248	0	0	0	0	0	117	66	183	565
05:30 PM	108	0	38	146	80	197	0	277	0	0	0	0	0	122	47	169	592
05:45 PM	94	0	37	131	90	184	0	274	0	0	0	0	0	103	61	164	569
Total	392	1	134	527	339	716	0	1055	0	0	0	0	0	457	217	674	2256
Grand Total	784	1	289	1074	752	1396	0	2148	0	0	0	0	0	954	455	1409	4631
Apprch %	73	0.1	26.9		35	65	0		0	0	0		0	67.7	32.3		
Total %	16.9	0	6.2	23.2	16.2	30.1	0	46.4	0	0	0	0	0	20.6	9.8	30.4	

	I-215 Southbound Off Ramp Southbound				Scott Road Westbound				I-215 Southbound On Ramp Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**102**	0	33	135	102	157	0	259	0	0	0	0	0	114	55	169	563
04:15 PM	99	0	45	144	**108**	**195**	0	**303**	0	0	0	0	0	131	49	180	**627**
04:30 PM	101	0	**47**	**148**	103	149	0	252	0	0	0	0	0	118	55	173	573
04:45 PM	90	0	30	120	100	179	0	279	0	0	0	0	0	**134**	**79**	**213**	612
Total Volume	392	0	155	547	413	680	0	1093	0	0	0	0	0	497	238	735	2375
% App. Total	71.7	0	28.3		37.8	62.2	0		0	0	0		0	67.6	32.4		
PHF	.961	.000	.824	.924	.956	.872	.000	.902	.000	.000	.000	.000	.000	.927	.753	.863	.947

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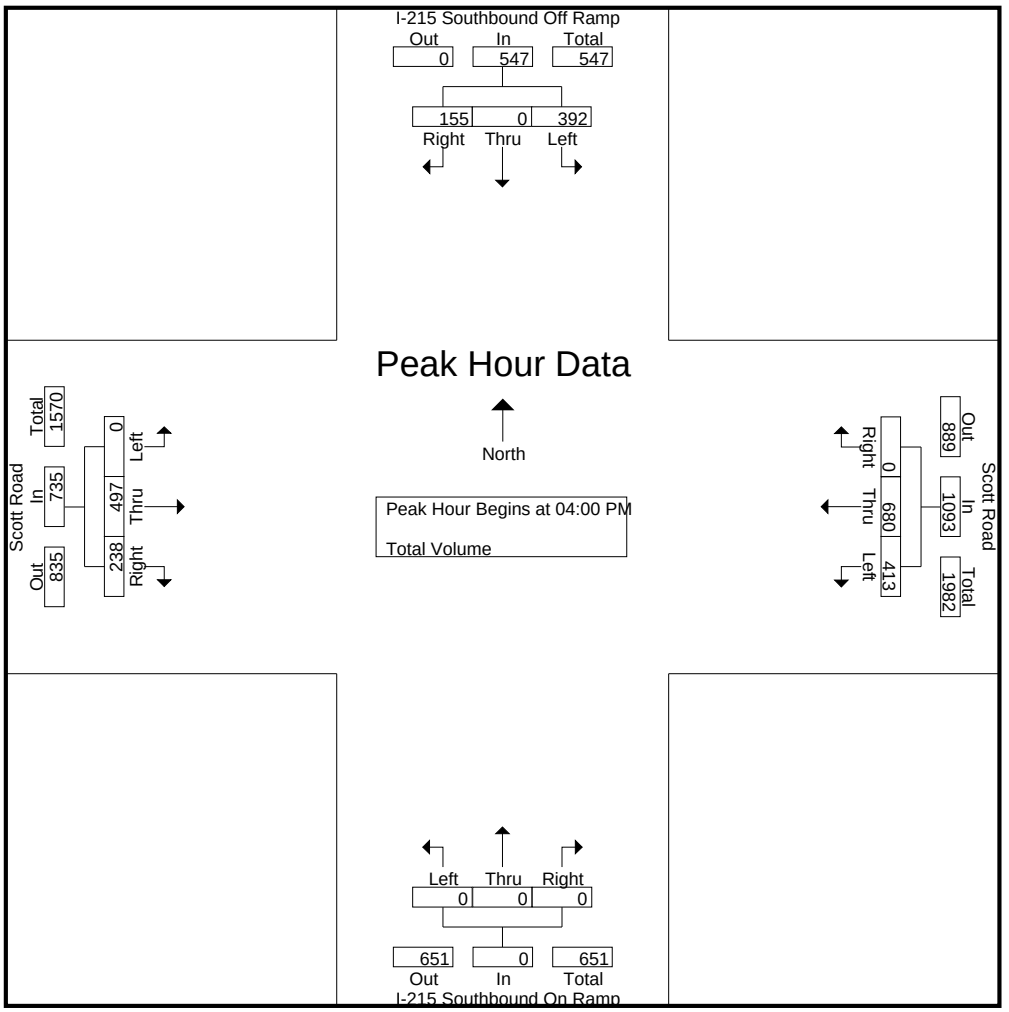
City of Menifee
N/S: I-215 Southbound Ramps
E/W: Scott Road
Weather: Clear

File Name : 25_MEN 215SSC PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**102**	0	33	135	102	157	0	259	0	0	0	0	0	114	55	169
+15 mins.	99	0	45	144	**108**	**195**	0	**303**	0	0	0	0	0	131	49	180
+30 mins.	101	0	**47**	**148**	103	149	0	252	0	0	0	0	0	118	55	173
+45 mins.	90	0	30	120	100	179	0	279	0	0	0	0	0	**134**	**79**	**213**
Total Volume	392	0	155	547	413	680	0	1093	0	0	0	0	0	497	238	735
% App. Total	71.7	0	28.3		37.8	62.2	0		0	0	0		0	67.6	32.4	
PHF	.961	.000	.824	.924	.956	.872	.000	.902	.000	.000	.000	.000	.000	.927	.753	.863

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City of Menifee
N/S: I-215 Northbound Ramps
E/W: Newport Road
Weather: Clear

File Name : 20_MEN 215nNE AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	I-215 Northbound On Ramp Southbound				Newport Road Westbound				I-215 Northbound Off Ramp Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	544	129	673	92	0	124	216	0	266	96	362	1251
07:15 AM	0	0	0	0	0	645	139	784	74	0	134	208	0	321	76	397	1389
07:30 AM	0	0	0	0	0	586	98	684	133	0	129	262	0	409	70	479	1425
07:45 AM	0	0	0	0	0	538	125	663	103	0	154	257	0	460	103	563	1483
Total	0	0	0	0	0	2313	491	2804	402	0	541	943	0	1456	345	1801	5548
08:00 AM	0	0	0	0	0	428	135	563	81	0	94	175	0	272	91	363	1101
08:15 AM	0	0	0	0	0	389	111	500	101	0	92	193	0	247	69	316	1009
08:30 AM	0	0	0	0	0	478	147	625	105	0	90	195	0	264	70	334	1154
08:45 AM	0	0	0	0	0	404	111	515	181	0	90	271	0	260	71	331	1117
Total	0	0	0	0	0	1699	504	2203	468	0	366	834	0	1043	301	1344	4381
Grand Total	0	0	0	0	0	4012	995	5007	870	0	907	1777	0	2499	646	3145	9929
Apprch %	0	0	0		0	80.1	19.9		49	0	51		0	79.5	20.5		
Total %	0	0	0	0	0	40.4	10	50.4	8.8	0	9.1	17.9	0	25.2	6.5	31.7	

	I-215 Northbound On Ramp Southbound				Newport Road Westbound				I-215 Northbound Off Ramp Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	544	129	673	92	0	124	216	0	266	96	362	1251
07:15 AM	0	0	0	0	0	**645**	**139**	**784**	74	0	134	208	0	321	76	397	1389
07:30 AM	0	0	0	0	0	586	98	684	**133**	0	129	**262**	0	409	70	479	1425
07:45 AM	0	0	0	0	0	538	125	663	103	0	**154**	257	0	**460**	**103**	**563**	**1483**
Total Volume	0	0	0	0	0	2313	491	2804	402	0	541	943	0	1456	345	1801	5548
% App. Total	0	0	0		0	82.5	17.5		42.6	0	57.4		0	80.8	19.2		
PHF	.000	.000	.000	.000	.000	.897	.883	.894	.756	.000	.878	.900	.000	.791	.837	.800	.935

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City of Menifee
N/S: I-215 Northbound Ramps
E/W: Newport Road
Weather: Clear

File Name : 20_MEN 215nNE AM
Site Code : 06717552
Start Date : 8/29/2017
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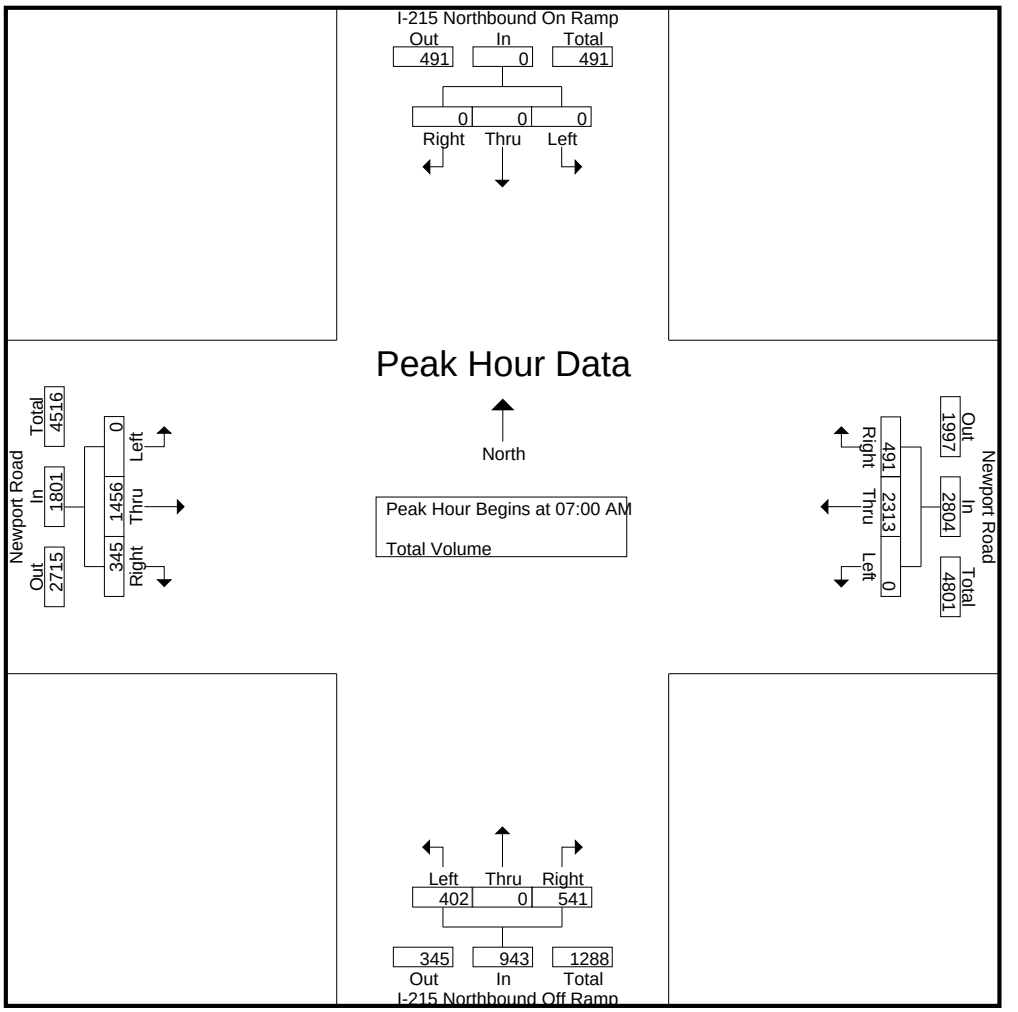

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:15 AM			
+0 mins.	0	0	0	0	0	544	129	673	92	0	124	216	0	321	76	397
+15 mins.	0	0	0	0	0	**645**	**139**	**784**	74	0	134	208	0	409	70	479
+30 mins.	0	0	0	0	0	586	98	684	**133**	0	129	**262**	0	**460**	**103**	**563**
+45 mins.	0	0	0	0	0	538	125	663	103	0	**154**	257	0	272	91	363
Total Volume	0	0	0	0	0	2313	491	2804	402	0	541	943	0	1462	340	1802
% App. Total	0	0	0		0	82.5	17.5		42.6	0	57.4		0	81.1	18.9	
PHF	.000	.000	.000	.000	.000	.897	.883	.894	.756	.000	.878	.900	.000	.795	.825	.800

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City of Menifee
N/S: I-215 Northbound Ramps
E/W: Newport Road
Weather: Clear

File Name : 20_MEN 215nNE PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	I-215 Northbound On Ramp Southbound				Newport Road Westbound				I-215 Northbound Off Ramp Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	360	110	470	104	0	177	281	0	481	75	556	1307
04:15 PM	0	0	0	0	0	413	74	487	162	0	185	347	0	436	53	489	1323
04:30 PM	0	0	0	0	0	400	121	521	116	0	163	279	0	443	59	502	1302
04:45 PM	0	0	0	0	0	399	107	506	161	0	182	343	0	482	62	544	1393
Total	0	0	0	0	0	1572	412	1984	543	0	707	1250	0	1842	249	2091	5325
05:00 PM	0	0	0	0	0	409	119	528	145	0	158	303	0	468	92	560	1391
05:15 PM	0	0	0	0	0	419	135	554	105	0	165	270	0	493	102	595	1419
05:30 PM	0	0	0	0	0	424	118	542	126	0	221	347	0	447	101	548	1437
05:45 PM	0	0	0	0	0	438	108	546	141	0	202	343	0	477	87	564	1453
Total	0	0	0	0	0	1690	480	2170	517	0	746	1263	0	1885	382	2267	5700
Grand Total	0	0	0	0	0	3262	892	4154	1060	0	1453	2513	0	3727	631	4358	11025
Apprch %	0	0	0		0	78.5	21.5		42.2	0	57.8		0	85.5	14.5		
Total %	0	0	0	0	0	29.6	8.1	37.7	9.6	0	13.2	22.8	0	33.8	5.7	39.5	

	I-215 Northbound On Ramp Southbound				Newport Road Westbound				I-215 Northbound Off Ramp Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	409	119	528	**145**	0	158	303	0	468	92	560	1391
05:15 PM	0	0	0	0	0	419	**135**	**554**	105	0	165	270	0	**493**	**102**	**595**	1419
05:30 PM	0	0	0	0	0	424	118	542	126	0	**221**	**347**	0	447	101	548	1437
05:45 PM	0	0	0	0	0	**438**	108	546	141	0	202	343	0	477	87	564	**1453**
Total Volume	0	0	0	0	0	1690	480	2170	517	0	746	1263	0	1885	382	2267	5700
% App. Total	0	0	0		0	77.9	22.1		40.9	0	59.1		0	83.1	16.9		
PHF	.000	.000	.000	.000	.000	.965	.889	.979	.891	.000	.844	.910	.000	.956	.936	.953	.981

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City of Menifee
N/S: I-215 Northbound Ramps
E/W: Newport Road
Weather: Clear

File Name : 20_MEN 215nNE PM
Site Code : 06717552
Start Date : 8/29/2017
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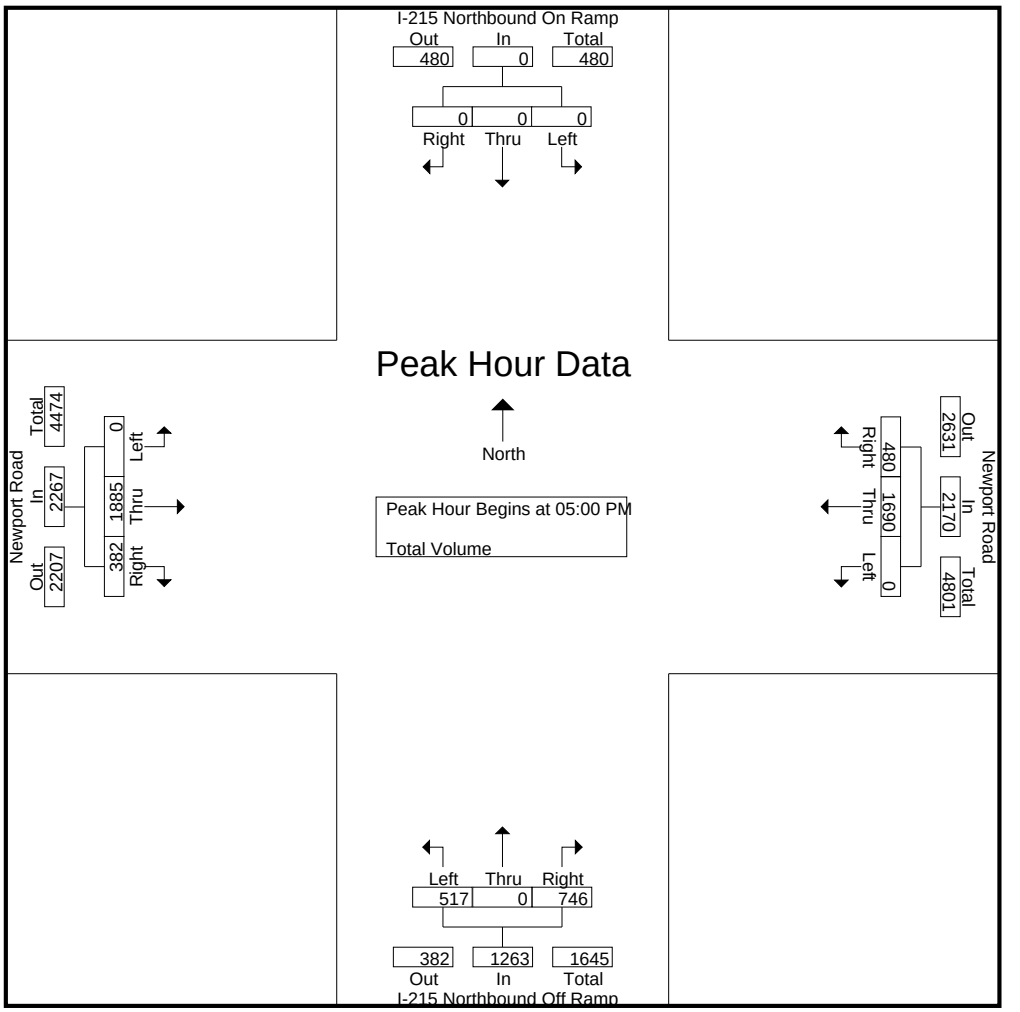

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:15 PM				05:00 PM			
+0 mins.	0	0	0	0	0	409	119	528	**162**	0	**185**	**347**	0	468	92	560
+15 mins.	0	0	0	0	0	419	**135**	**554**	116	0	163	279	0	**493**	**102**	**595**
+30 mins.	0	0	0	0	0	424	118	542	161	0	182	343	0	447	101	548
+45 mins.	0	0	0	0	0	**438**	108	546	145	0	158	303	0	477	87	564
Total Volume	0	0	0	0	0	1690	480	2170	584	0	688	1272	0	1885	382	2267
% App. Total	0	0	0		0	77.9	22.1		45.9	0	54.1		0	83.1	16.9	
PHF	.000	.000	.000	.000	.000	.965	.889	.979	.901	.000	.930	.916	.000	.956	.936	.953

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City of Menifee
N/S: I-215 Northbound Ramps
E/W: Scott Road
Weather: Clear

File Name : 26_MEN 215NSC AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	I-215 Northbound On Ramp Southbound				Scott Road Westbound				I-215 Northbound Off Ramp Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	187	127	314	60	0	82	142	27	159	0	186	642
07:15 AM	0	0	0	0	0	192	125	317	82	0	96	178	28	189	0	217	712
07:30 AM	0	0	0	0	0	208	103	311	56	0	84	140	12	173	0	185	636
07:45 AM	0	0	0	0	0	207	110	317	37	0	110	147	16	201	0	217	681
Total	0	0	0	0	0	794	465	1259	235	0	372	607	83	722	0	805	2671
08:00 AM	0	0	0	0	0	181	101	282	38	0	71	109	30	173	0	203	594
08:15 AM	0	0	0	0	0	189	94	283	39	0	74	113	15	164	0	179	575
08:30 AM	0	0	0	0	0	201	95	296	35	0	106	141	27	131	0	158	595
08:45 AM	0	0	0	0	0	200	100	300	30	1	82	113	14	145	0	159	572
Total	0	0	0	0	0	771	390	1161	142	1	333	476	86	613	0	699	2336
Grand Total	0	0	0	0	0	1565	855	2420	377	1	705	1083	169	1335	0	1504	5007
Apprch %	0	0	0		0	64.7	35.3		34.8	0.1	65.1		11.2	88.8	0		
Total %	0	0	0	0	0	31.3	17.1	48.3	7.5	0	14.1	21.6	3.4	26.7	0	30	

	I-215 Northbound On Ramp Southbound				Scott Road Westbound				I-215 Northbound Off Ramp Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	187	**127**	314	60	0	82	142	27	159	0	186	642
07:15 AM	0	0	0	0	0	192	125	**317**	**82**	0	96	**178**	**28**	189	0	**217**	**712**
07:30 AM	0	0	0	0	0	**208**	103	311	56	0	84	140	12	173	0	185	636
07:45 AM	0	0	0	0	0	207	110	317	37	0	**110**	147	16	**201**	0	217	681
Total Volume	0	0	0	0	0	794	465	1259	235	0	372	607	83	722	0	805	2671
% App. Total	0	0	0		0	63.1	36.9		38.7	0	61.3		10.3	89.7	0		
PHF	.000	.000	.000	.000	.000	.954	.915	.993	.716	.000	.845	.853	.741	.898	.000	.927	.938

Counts Unlimited
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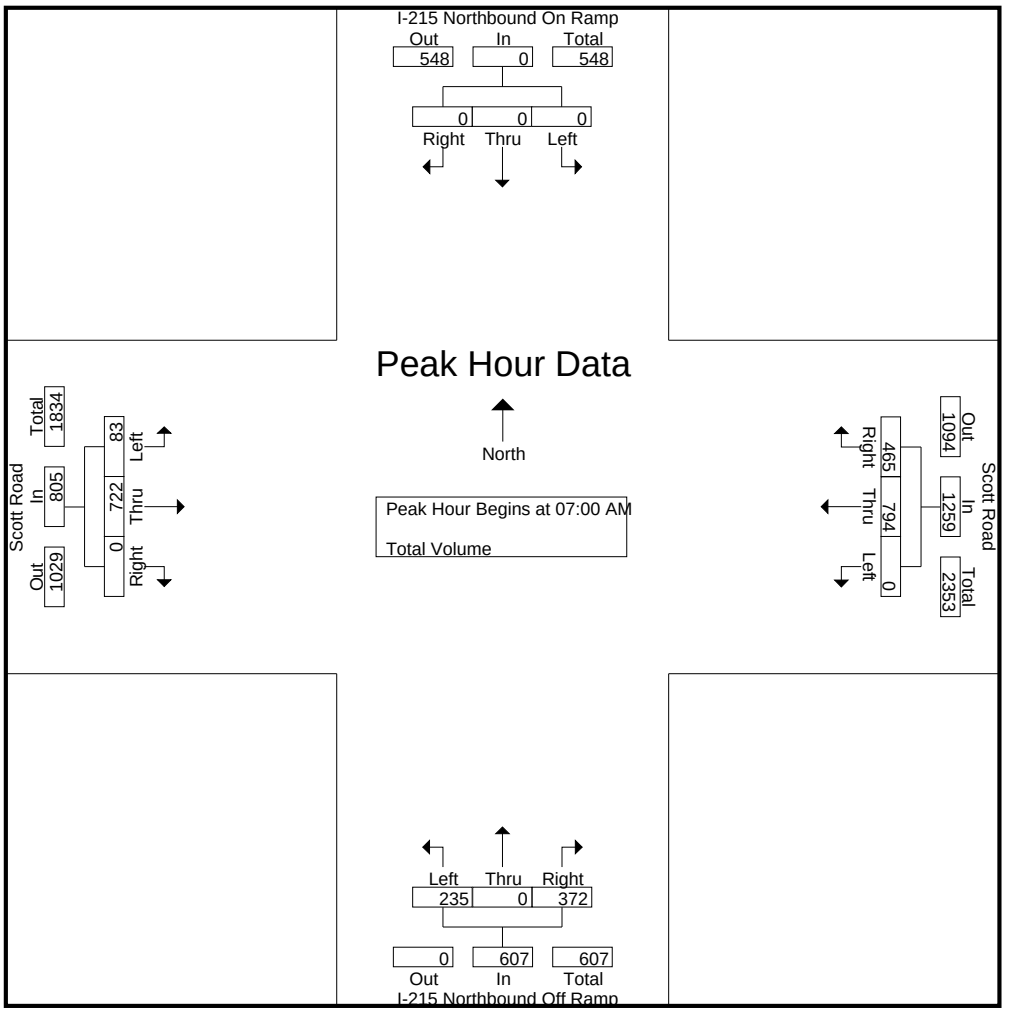
City of Menifee
N/S: I-215 Northbound Ramps
E/W: Scott Road
Weather: Clear

File Name : 26_MEN 215NSC AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:15 AM			
+0 mins.	0	0	0	0	0	187	**127**	314	60	0	82	142	28	189	0	**217**
+15 mins.	0	0	0	0	0	192	125	**317**	**82**	0	96	**178**	12	173	0	185
+30 mins.	0	0	0	0	0	**208**	103	311	56	0	84	140	16	**201**	0	217
+45 mins.	0	0	0	0	0	207	110	317	37	0	**110**	147	**30**	173	0	203
Total Volume	0	0	0	0	0	794	465	1259	235	0	372	607	86	736	0	822
% App. Total	0	0	0		0	63.1	36.9		38.7	0	61.3		10.5	89.5	0	
PHF	.000	.000	.000	.000	.000	.954	.915	.993	.716	.000	.845	.853	.717	.915	.000	.947

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City of Menifee
N/S: I-215 Northbound Ramps
E/W: Scott Road
Weather: Clear

File Name : 26_MEN 215NSC PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	I-215 Northbound On Ramp Southbound				Scott Road Westbound				I-215 Northbound Off Ramp Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	187	123	310	75	0	112	187	14	205	0	219	716
04:15 PM	0	0	0	0	0	195	91	286	104	0	127	231	17	215	0	232	749
04:30 PM	0	0	0	0	0	190	93	283	71	1	132	204	15	207	0	222	709
04:45 PM	0	0	0	0	0	187	88	275	95	0	119	214	24	204	0	228	717
Total	0	0	0	0	0	759	395	1154	345	1	490	836	70	831	0	901	2891
05:00 PM	0	0	0	0	0	179	95	274	82	0	119	201	17	195	0	212	687
05:15 PM	0	0	0	0	0	190	118	308	64	0	113	177	13	211	0	224	709
05:30 PM	0	0	0	0	0	206	81	287	80	0	112	192	19	213	0	232	711
05:45 PM	0	0	0	0	0	173	102	275	102	0	138	240	11	188	0	199	714
Total	0	0	0	0	0	748	396	1144	328	0	482	810	60	807	0	867	2821
Grand Total	0	0	0	0	0	1507	791	2298	673	1	972	1646	130	1638	0	1768	5712
Apprch %	0	0	0		0	65.6	34.4		40.9	0.1	59.1		7.4	92.6	0		
Total %	0	0	0	0	0	26.4	13.8	40.2	11.8	0	17	28.8	2.3	28.7	0	31	

	I-215 Northbound On Ramp Southbound				Scott Road Westbound				I-215 Northbound Off Ramp Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	187	**123**	**310**	75	0	112	187	14	205	0	219	716
04:15 PM	0	0	0	0	0	**195**	91	286	**104**	0	127	**231**	17	**215**	0	**232**	**749**
04:30 PM	0	0	0	0	0	190	93	283	71	**1**	**132**	204	15	207	0	222	709
04:45 PM	0	0	0	0	0	187	88	275	95	0	119	214	**24**	204	0	228	717
Total Volume	0	0	0	0	0	759	395	1154	345	1	490	836	70	831	0	901	2891
% App. Total	0	0	0		0	65.8	34.2		41.3	0.1	58.6		7.8	92.2	0		
PHF	.000	.000	.000	.000	.000	.973	.803	.931	.829	.250	.928	.905	.729	.966	.000	.971	.965

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City of Menifee
N/S: I-215 Northbound Ramps
E/W: Scott Road
Weather: Clear

File Name : 26_MEN 215NSC PM
Site Code : 06717552
Start Date : 8/29/2017
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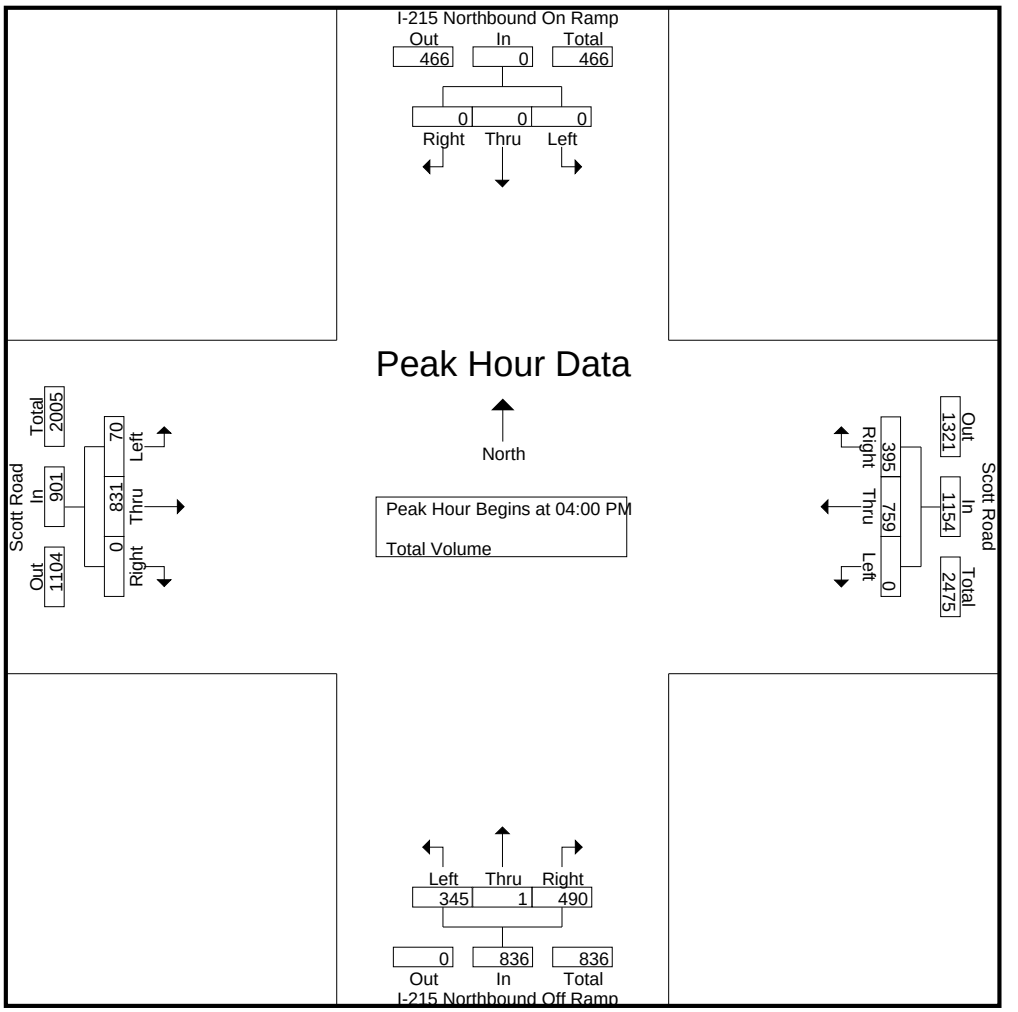

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:15 PM				04:00 PM			
+0 mins.	0	0	0	0	0	187	**123**	**310**	**104**	0	127	**231**	14	205	0	219
+15 mins.	0	0	0	0	0	**195**	91	286	71	**1**	**132**	204	17	**215**	0	**232**
+30 mins.	0	0	0	0	0	190	93	283	95	0	119	214	15	207	0	222
+45 mins.	0	0	0	0	0	187	88	275	82	0	119	201	**24**	204	0	228
Total Volume	0	0	0	0	0	759	395	1154	352	1	497	850	70	831	0	901
% App. Total	0	0	0		0	65.8	34.2		41.4	0.1	58.5		7.8	92.2	0	
PHF	.000	.000	.000	.000	.000	.973	.803	.931	.846	.250	.941	.920	.729	.966	.000	.971

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City of Menifee
N/S: Antelope Road
E/W: Newport Road
Weather: Clear

File Name : 22_MEN ANNE AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Antelope Road Southbound				Newport Road Westbound				Antelope Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	28	17	48	93	17	472	4	493	158	14	20	192	15	303	64	382	1160
07:15 AM	29	13	35	77	33	578	8	619	173	6	36	215	16	319	118	453	1364
07:30 AM	12	18	46	76	48	510	11	569	121	4	30	155	17	315	212	544	1344
07:45 AM	8	16	46	70	39	489	18	546	128	7	11	146	27	315	264	606	1368
Total	77	64	175	316	137	2049	41	2227	580	31	97	708	75	1252	658	1985	5236
08:00 AM	4	17	45	66	35	417	7	459	105	10	15	130	32	261	105	398	1053
08:15 AM	3	22	32	57	38	343	6	387	127	15	22	164	28	215	86	329	937
08:30 AM	5	13	55	73	21	427	6	454	149	9	16	174	22	252	81	355	1056
08:45 AM	4	24	46	74	46	348	9	403	122	9	16	147	24	196	94	314	938
Total	16	76	178	270	140	1535	28	1703	503	43	69	615	106	924	366	1396	3984
Grand Total	93	140	353	586	277	3584	69	3930	1083	74	166	1323	181	2176	1024	3381	9220
Apprch %	15.9	23.9	60.2		7	91.2	1.8		81.9	5.6	12.5		5.4	64.4	30.3		
Total %	1	1.5	3.8	6.4	3	38.9	0.7	42.6	11.7	0.8	1.8	14.3	2	23.6	11.1	36.7	

	Antelope Road Southbound				Newport Road Westbound				Antelope Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	28	17	**48**	**93**	17	472	4	493	158	**14**	20	192	15	303	64	382	1160
07:15 AM	**29**	13	35	77	33	**578**	8	**619**	**173**	6	**36**	**215**	16	**319**	118	453	1364
07:30 AM	12	**18**	46	76	**48**	510	11	569	121	4	30	155	17	315	212	544	1344
07:45 AM	8	16	46	70	39	489	**18**	546	128	7	11	146	**27**	315	**264**	**606**	**1368**
Total Volume	77	64	175	316	137	2049	41	2227	580	31	97	708	75	1252	658	1985	5236
% App. Total	24.4	20.3	55.4		6.2	92	1.8		81.9	4.4	13.7		3.8	63.1	33.1		
PHF	.664	.889	.911	.849	.714	.886	.569	.899	.838	.554	.674	.823	.694	.981	.623	.819	.957

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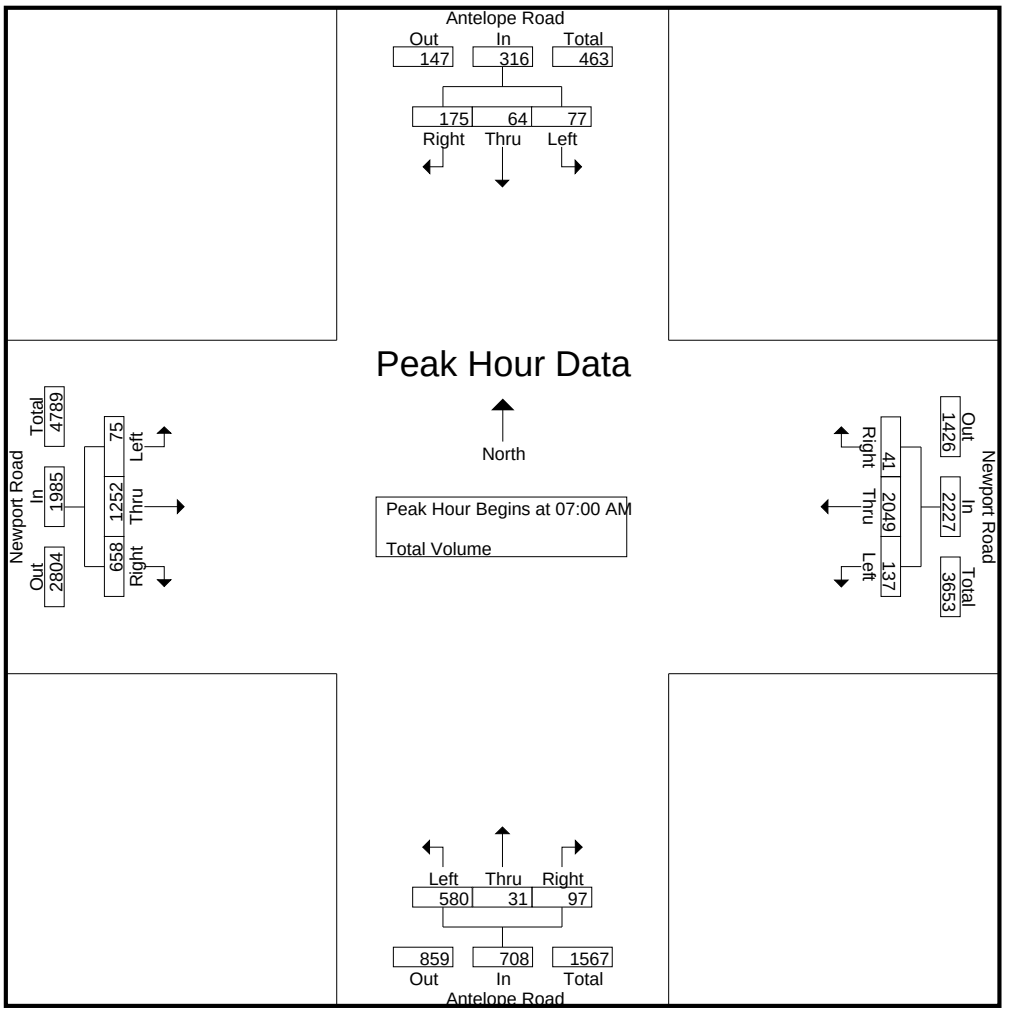
City of Menifee
N/S: Antelope Road
E/W: Newport Road
Weather: Clear

File Name : 22_MEN ANNE AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:15 AM			
+0 mins.	28	17	**48**	**93**	17	472	4	493	158	**14**	20	192	16	**319**	118	453
+15 mins.	**29**	13	35	77	33	**578**	8	**619**	**173**	6	**36**	**215**	17	315	212	544
+30 mins.	12	**18**	46	76	**48**	510	11	569	121	4	30	155	27	315	**264**	**606**
+45 mins.	8	16	46	70	39	489	**18**	546	128	7	11	146	**32**	261	105	398
Total Volume	77	64	175	316	137	2049	41	2227	580	31	97	708	92	1210	699	2001
% App. Total	24.4	20.3	55.4		6.2	92	1.8		81.9	4.4	13.7		4.6	60.5	34.9	
PHF	.664	.889	.911	.849	.714	.886	.569	.899	.838	.554	.674	.823	.719	.948	.662	.825

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City of Menifee
N/S: Antelope Road
E/W: Newport Road
Weather: Clear

File Name : 22_MEN ANNE PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Antelope Road Southbound				Newport Road Westbound				Antelope Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	4	16	38	58	41	283	6	330	157	21	29	207	38	440	133	611	1206
04:15 PM	6	16	42	64	28	283	3	314	160	22	44	226	52	398	149	599	1203
04:30 PM	2	14	32	48	42	325	14	381	170	20	38	228	38	384	134	556	1213
04:45 PM	1	12	37	50	34	320	7	361	154	18	41	213	58	443	176	677	1301
Total	13	58	149	220	145	1211	30	1386	641	81	152	874	186	1665	592	2443	4923
05:00 PM	8	17	49	74	36	311	3	350	182	24	50	256	36	395	138	569	1249
05:15 PM	2	26	31	59	42	378	7	427	145	28	43	216	45	461	173	679	1381
05:30 PM	8	22	33	63	42	321	8	371	193	25	54	272	34	445	166	645	1351
05:45 PM	10	13	34	57	54	342	9	405	173	31	42	246	30	460	156	646	1354
Total	28	78	147	253	174	1352	27	1553	693	108	189	990	145	1761	633	2539	5335
Grand Total	41	136	296	473	319	2563	57	2939	1334	189	341	1864	331	3426	1225	4982	10258
Apprch %	8.7	28.8	62.6		10.9	87.2	1.9		71.6	10.1	18.3		6.6	68.8	24.6		
Total %	0.4	1.3	2.9	4.6	3.1	25	0.6	28.7	13	1.8	3.3	18.2	3.2	33.4	11.9	48.6	

	Antelope Road Southbound				Newport Road Westbound				Antelope Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	8	17	**49**	**74**	36	311	3	350	182	24	50	256	36	395	138	569	1249
05:15 PM	2	**26**	31	59	42	**378**	7	**427**	145	28	43	216	**45**	**461**	**173**	**679**	**1381**
05:30 PM	8	22	33	63	42	321	8	371	**193**	25	**54**	**272**	34	445	166	645	1351
05:45 PM	**10**	13	34	57	**54**	342	**9**	405	173	**31**	42	246	30	460	156	646	1354
Total Volume	28	78	147	253	174	1352	27	1553	693	108	189	990	145	1761	633	2539	5335
% App. Total	11.1	30.8	58.1		11.2	87.1	1.7		70	10.9	19.1		5.7	69.4	24.9		
PHF	.700	.750	.750	.855	.806	.894	.750	.909	.898	.871	.875	.910	.806	.955	.915	.935	.966

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City of Menifee
N/S: Antelope Road
E/W: Newport Road
Weather: Clear

File Name : 22_MEN ANNE PM
Site Code : 06717552
Start Date : 8/29/2017
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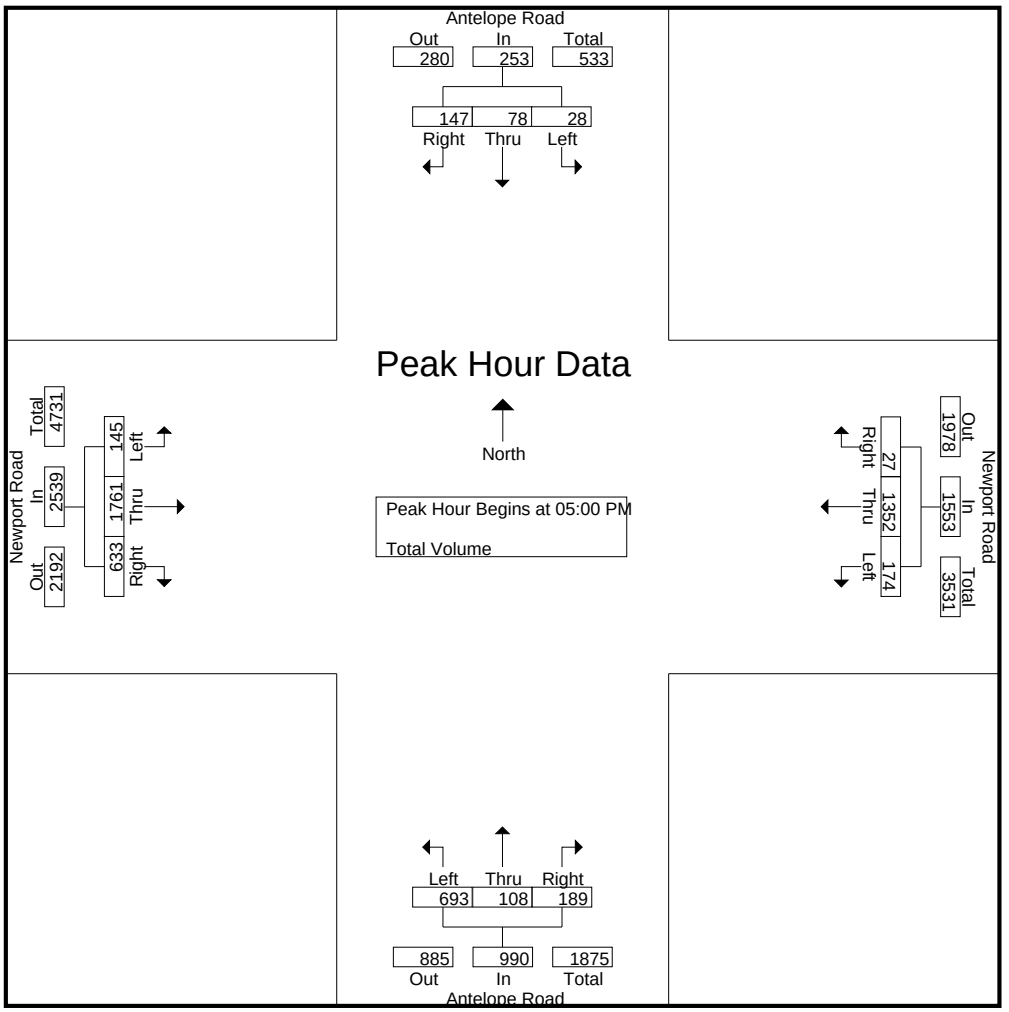

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				04:45 PM			
+0 mins.	8	17	**49**	**74**	36	311	3	350	182	24	50	256	**58**	443	**176**	677
+15 mins.	2	**26**	31	59	42	**378**	7	**427**	145	28	43	216	36	395	138	569
+30 mins.	8	22	33	63	42	321	8	371	**193**	25	**54**	**272**	45	**461**	173	**679**
+45 mins.	**10**	13	34	57	**54**	342	**9**	405	173	**31**	42	246	34	445	166	645
Total Volume	28	78	147	253	174	1352	27	1553	693	108	189	990	173	1744	653	2570
% App. Total	11.1	30.8	58.1		11.2	87.1	1.7		70	10.9	19.1		6.7	67.9	25.4	
PHF	.700	.750	.750	.855	.806	.894	.750	.909	.898	.871	.875	.910	.746	.946	.928	.946

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City of Menifee
N/S: Antelope Road
E/W: Holland Road
Weather: Clear

File Name : 14_MEN ANHO AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Antelope Road Southbound			Holland Road Westbound			Antelope Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	15	45	60	36	67	103	70	19	89	252
07:15 AM	26	51	77	32	51	83	93	10	103	263
07:30 AM	25	78	103	45	52	97	116	9	125	325
07:45 AM	25	70	95	35	42	77	174	8	182	354
Total	91	244	335	148	212	360	453	46	499	1194
08:00 AM	19	62	81	16	43	59	93	11	104	244
08:15 AM	23	92	115	23	41	64	126	11	137	316
08:30 AM	19	77	96	22	40	62	100	5	105	263
08:45 AM	19	60	79	16	43	59	77	6	83	221
Total	80	291	371	77	167	244	396	33	429	1044
Grand Total	171	535	706	225	379	604	849	79	928	2238
Apprch %	24.2	75.8		37.3	62.7		91.5	8.5		
Total %	7.6	23.9	31.5	10.1	16.9	27	37.9	3.5	41.5	

	Antelope Road Southbound			Holland Road Westbound			Antelope Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	**25**	78	103	**45**	**52**	**97**	116	9	125	325
07:45 AM	25	70	95	35	42	77	**174**	8	**182**	**354**
08:00 AM	19	62	81	16	43	59	93	**11**	104	244
08:15 AM	23	**92**	**115**	23	41	64	126	11	137	316
Total Volume	92	302	394	119	178	297	509	39	548	1239
% App. Total	23.4	76.6		40.1	59.9		92.9	7.1		
PHF	.920	.821	.857	.661	.856	.765	.731	.886	.753	.875

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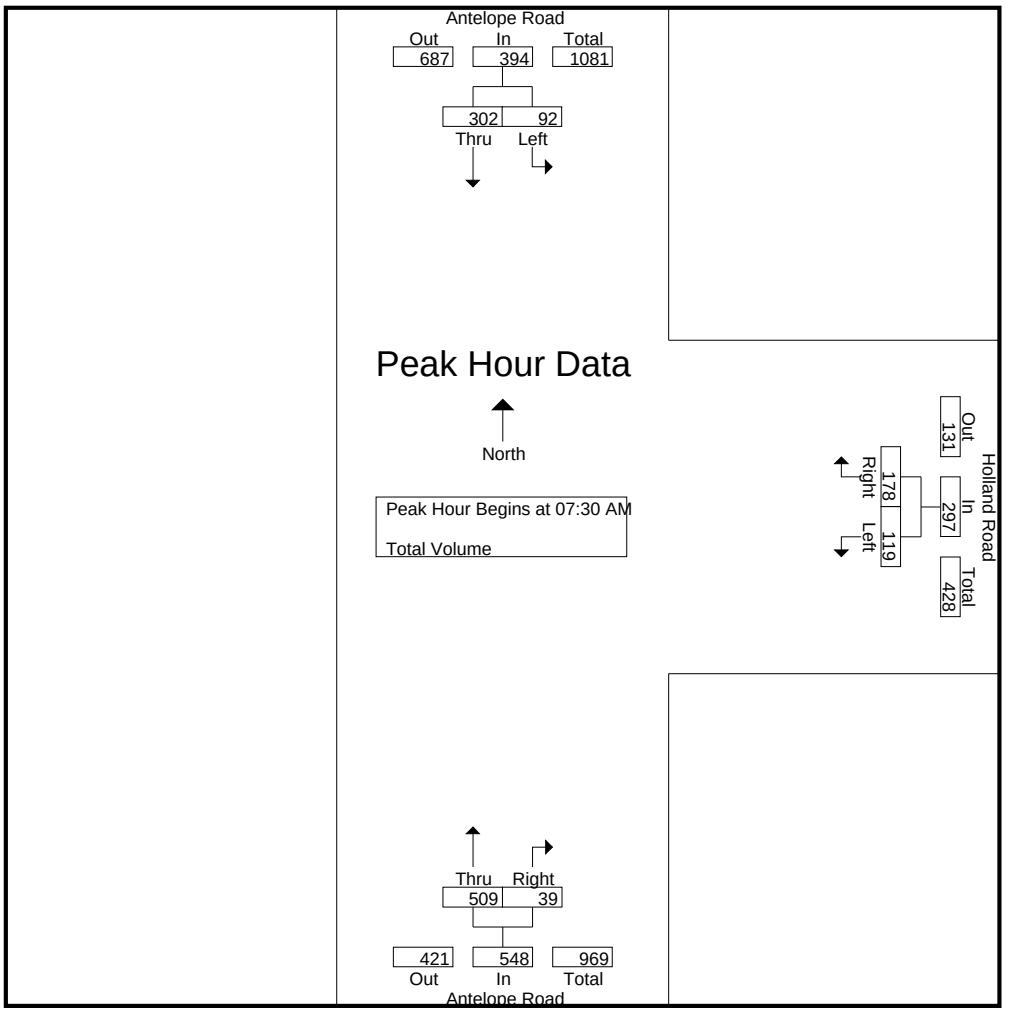
City of Menifee
N/S: Antelope Road
E/W: Holland Road
Weather: Clear

File Name : 14_MEN ANHO AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			07:00 AM			07:30 AM		
+0 mins.	**25**	78	103	36	**67**	**103**	116	9	125
+15 mins.	25	70	95	32	51	83	**174**	8	**182**
+30 mins.	19	62	81	**45**	52	97	93	**11**	104
+45 mins.	23	**92**	**115**	35	42	77	126	11	137
Total Volume	92	302	394	148	212	360	509	39	548
% App. Total	23.4	76.6		41.1	58.9		92.9	7.1	
PHF	.920	.821	.857	.822	.791	.874	.731	.886	.753

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City of Menifee
N/S: Antelope Road
E/W: Holland Road
Weather: Clear

File Name : 14_MEN ANHO PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Antelope Road Southbound			Holland Road Westbound			Antelope Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	44	121	165	14	19	33	84	17	101	299
04:15 PM	49	109	158	17	18	35	86	21	107	300
04:30 PM	42	96	138	10	29	39	88	23	111	288
04:45 PM	41	118	159	21	30	51	94	18	112	322
Total	176	444	620	62	96	158	352	79	431	1209
05:00 PM	54	111	165	15	28	43	92	18	110	318
05:15 PM	49	110	159	24	20	44	81	29	110	313
05:30 PM	55	108	163	19	32	51	121	20	141	355
05:45 PM	33	102	135	13	45	58	116	21	137	330
Total	191	431	622	71	125	196	410	88	498	1316
Grand Total	367	875	1242	133	221	354	762	167	929	2525
Apprch %	29.5	70.5		37.6	62.4		82	18		
Total %	14.5	34.7	49.2	5.3	8.8	14	30.2	6.6	36.8	

	Antelope Road Southbound			Holland Road Westbound			Antelope Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	54	**111**	**165**	15	28	43	92	18	110	318
05:15 PM	49	110	159	**24**	20	44	81	**29**	110	313
05:30 PM	**55**	108	163	19	32	51	**121**	20	**141**	**355**
05:45 PM	33	102	135	13	**45**	**58**	116	21	137	330
Total Volume	191	431	622	71	125	196	410	88	498	1316
% App. Total	30.7	69.3		36.2	63.8		82.3	17.7		
PHF	.868	.971	.942	.740	.694	.845	.847	.759	.883	.927

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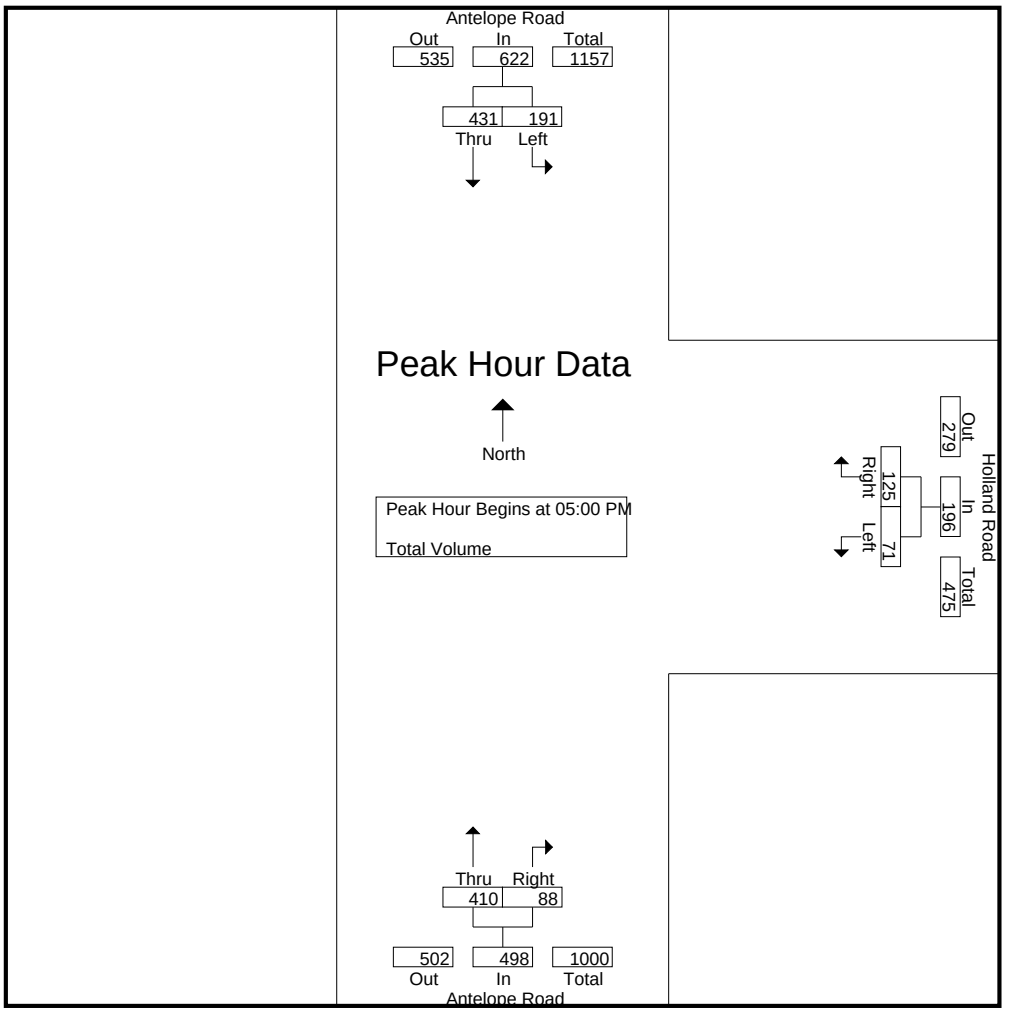
City of Menifee
N/S: Antelope Road
E/W: Holland Road
Weather: Clear

File Name : 14_MEN ANHO PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			05:00 PM			05:00 PM		
+0 mins.	41	**118**	159	15	28	43	92	18	110
+15 mins.	54	111	**165**	**24**	20	44	81	**29**	110
+30 mins.	49	110	159	19	32	51	**121**	20	**141**
+45 mins.	**55**	108	163	13	**45**	**58**	116	21	137
Total Volume	199	447	646	71	125	196	410	88	498
% App. Total	30.8	69.2		36.2	63.8		82.3	17.7	
PHF	.905	.947	.979	.740	.694	.845	.847	.759	.883

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City of Menifee
N/S: Antelope Road
E/W: Scott Road
Weather: Clear

File Name : 17_MEN ANSC AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Antelope Road Southbound				Scott Road Westbound				Antelope Road Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	7	44	89	140	2	171	5	178	93	21	23	137	49	144	80	273	728
07:15 AM	8	32	98	138	3	175	4	182	68	29	25	122	60	171	73	304	746
07:30 AM	11	42	87	140	6	124	20	150	90	58	20	168	60	150	45	255	713
07:45 AM	14	62	95	171	13	170	17	200	59	44	20	123	80	159	79	318	812
Total	40	180	369	589	24	640	46	710	310	152	88	550	249	624	277	1150	2999
08:00 AM	5	46	73	124	8	146	12	166	51	46	20	117	43	158	66	267	674
08:15 AM	10	45	75	130	17	144	11	172	63	40	17	120	46	144	66	256	678
08:30 AM	11	34	80	125	25	147	5	177	66	34	14	114	52	115	66	233	649
08:45 AM	8	36	60	104	21	188	13	222	71	30	15	116	51	130	69	250	692
Total	34	161	288	483	71	625	41	737	251	150	66	467	192	547	267	1006	2693
Grand Total	74	341	657	1072	95	1265	87	1447	561	302	154	1017	441	1171	544	2156	5692
Apprch %	6.9	31.8	61.3		6.6	87.4	6		55.2	29.7	15.1		20.5	54.3	25.2		
Total %	1.3	6	11.5	18.8	1.7	22.2	1.5	25.4	9.9	5.3	2.7	17.9	7.7	20.6	9.6	37.9	

	Antelope Road Southbound				Scott Road Westbound				Antelope Road Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	7	44	89	140	2	171	5	178	**93**	21	23	137	49	144	**80**	273	728
07:15 AM	8	32	**98**	138	3	**175**	4	182	68	29	**25**	122	60	**171**	73	304	746
07:30 AM	11	42	87	140	6	124	**20**	150	90	**58**	20	**168**	60	150	45	255	713
07:45 AM	**14**	**62**	95	**171**	**13**	170	17	**200**	59	44	20	123	**80**	159	79	**318**	**812**
Total Volume	40	180	369	589	24	640	46	710	310	152	88	550	249	624	277	1150	2999
% App. Total	6.8	30.6	62.6		3.4	90.1	6.5		56.4	27.6	16		21.7	54.3	24.1		
PHF	.714	.726	.941	.861	.462	.914	.575	.888	.833	.655	.880	.818	.778	.912	.866	.904	.923

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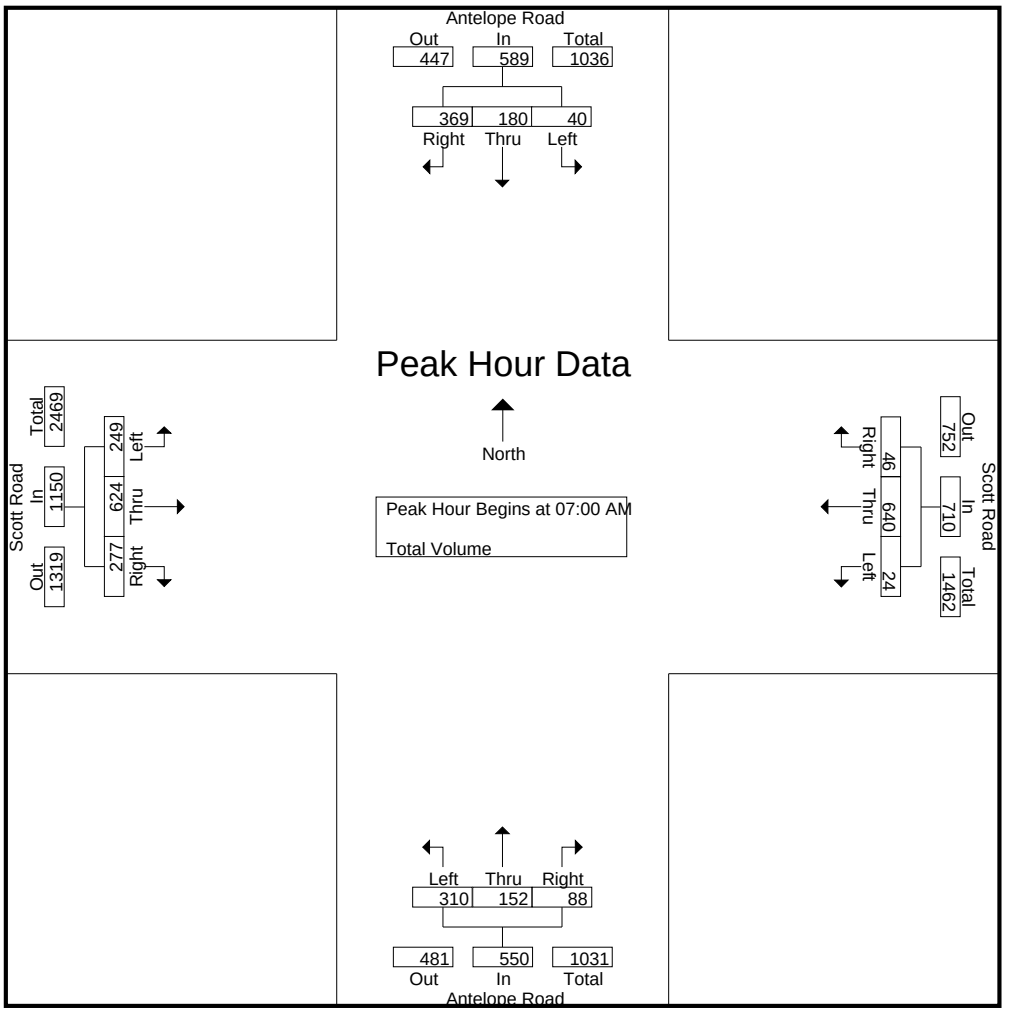
City of Menifee
N/S: Antelope Road
E/W: Scott Road
Weather: Clear

File Name : 17_MEN ANSC AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				08:00 AM				07:00 AM				07:00 AM			
+0 mins.	7	44	89	140	8	146	12	166	**93**	21	23	137	49	144	**80**	273
+15 mins.	8	32	**98**	138	17	144	11	172	68	29	**25**	122	60	**171**	73	304
+30 mins.	11	42	87	140	**25**	147	5	177	90	**58**	20	**168**	60	150	45	255
+45 mins.	**14**	**62**	95	**171**	21	**188**	**13**	**222**	59	44	20	123	**80**	159	79	**318**
Total Volume	40	180	369	589	71	625	41	737	310	152	88	550	249	624	277	1150
% App. Total	6.8	30.6	62.6		9.6	84.8	5.6		56.4	27.6	16		21.7	54.3	24.1	
PHF	.714	.726	.941	.861	.710	.831	.788	.830	.833	.655	.880	.818	.778	.912	.866	.904

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City of Menifee
N/S: Antelope Road
E/W: Scott Road
Weather: Clear

File Name : 17_MEN ANSC PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Antelope Road Southbound				Scott Road Westbound				Antelope Road Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	21	40	72	133	17	127	4	148	86	64	37	187	58	180	76	314	782
04:15 PM	19	26	80	125	25	109	8	142	74	55	30	159	64	174	70	308	734
04:30 PM	15	33	73	121	23	127	7	157	89	69	34	192	67	209	81	357	827
04:45 PM	15	30	56	101	14	137	9	160	87	65	32	184	46	200	65	311	756
Total	70	129	281	480	79	500	28	607	336	253	133	722	235	763	292	1290	3099
05:00 PM	18	49	65	132	19	131	14	164	94	59	60	213	65	197	81	343	852
05:15 PM	17	37	81	135	9	140	14	163	97	62	45	204	68	201	63	332	834
05:30 PM	15	47	73	135	19	111	11	141	106	93	35	234	60	182	73	315	825
05:45 PM	9	34	60	103	13	126	15	154	95	73	49	217	78	197	66	341	815
Total	59	167	279	505	60	508	54	622	392	287	189	868	271	777	283	1331	3326
Grand Total	129	296	560	985	139	1008	82	1229	728	540	322	1590	506	1540	575	2621	6425
Apprch %	13.1	30.1	56.9		11.3	82	6.7		45.8	34	20.3		19.3	58.8	21.9		
Total %	2	4.6	8.7	15.3	2.2	15.7	1.3	19.1	11.3	8.4	5	24.7	7.9	24	8.9	40.8	

	Antelope Road Southbound				Scott Road Westbound				Antelope Road Northbound				Scott Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**18**	**49**	65	132	**19**	131	14	**164**	94	59	**60**	213	65	197	**81**	**343**	**852**
05:15 PM	17	37	**81**	**135**	9	**140**	14	163	97	62	45	204	68	**201**	63	332	834
05:30 PM	15	47	73	135	19	111	11	141	**106**	**93**	35	**234**	60	182	73	315	825
05:45 PM	9	34	60	103	13	126	**15**	154	95	73	49	217	**78**	197	66	341	815
Total Volume	59	167	279	505	60	508	54	622	392	287	189	868	271	777	283	1331	3326
% App. Total	11.7	33.1	55.2		9.6	81.7	8.7		45.2	33.1	21.8		20.4	58.4	21.3		
PHF	.819	.852	.861	.935	.789	.907	.900	.948	.925	.772	.788	.927	.869	.966	.873	.970	.976

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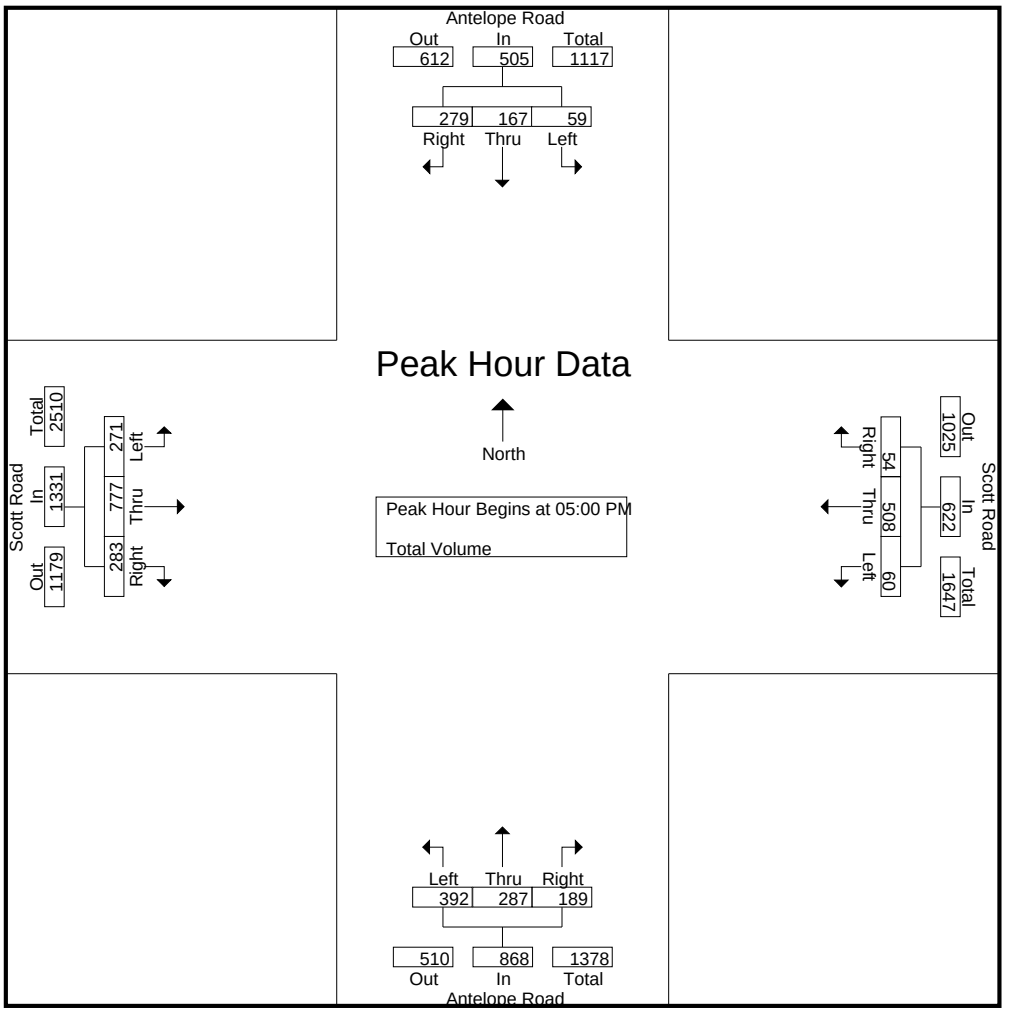
City of Menifee
N/S: Antelope Road
E/W: Scott Road
Weather: Clear

File Name : 17_MEN ANSC PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:30 PM				05:00 PM				04:30 PM			
+0 mins.	**18**	**49**	65	132	**23**	127	7	157	94	59	**60**	213	67	**209**	**81**	**357**
+15 mins.	17	37	**81**	**135**	14	137	9	160	97	62	45	204	46	200	65	311
+30 mins.	15	47	73	135	19	131	**14**	**164**	**106**	**93**	35	**234**	65	197	81	343
+45 mins.	9	34	60	103	9	**140**	14	163	95	73	49	217	**68**	201	63	332
Total Volume	59	167	279	505	65	535	44	644	392	287	189	868	246	807	290	1343
% App. Total	11.7	33.1	55.2		10.1	83.1	6.8		45.2	33.1	21.8		18.3	60.1	21.6	
PHF	.819	.852	.861	.935	.707	.955	.786	.982	.925	.772	.788	.927	.904	.965	.895	.940

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City of Menifee
N/S: Menifee Road
E/W: Newport Road
Weather: Clear

File Name : 23_MEN MENE AM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Menifee Road Southbound				Newport Road Westbound				Menifee Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	14	31	86	131	21	373	16	410	60	32	30	122	53	268	36	357	1020
07:15 AM	20	65	116	201	41	333	11	385	65	57	37	159	83	210	42	335	1080
07:30 AM	21	58	108	187	66	385	11	462	52	51	40	143	48	283	34	365	1157
07:45 AM	24	86	98	208	63	324	12	399	37	36	21	94	52	241	57	350	1051
Total	79	240	408	727	191	1415	50	1656	214	176	128	518	236	1002	169	1407	4308
08:00 AM	16	45	78	139	30	317	8	355	33	39	21	93	20	215	13	248	835
08:15 AM	21	39	58	118	30	288	12	330	37	31	25	93	37	196	10	243	784
08:30 AM	22	26	73	121	15	314	11	340	47	27	27	101	27	199	15	241	803
08:45 AM	5	30	46	81	31	275	10	316	43	28	7	78	30	169	19	218	693
Total	64	140	255	459	106	1194	41	1341	160	125	80	365	114	779	57	950	3115
Grand Total	143	380	663	1186	297	2609	91	2997	374	301	208	883	350	1781	226	2357	7423
Apprch %	12.1	32	55.9		9.9	87.1	3		42.4	34.1	23.6		14.8	75.6	9.6		
Total %	1.9	5.1	8.9	16	4	35.1	1.2	40.4	5	4.1	2.8	11.9	4.7	24	3	31.8	

	Menifee Road Southbound				Newport Road Westbound				Menifee Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	14	31	86	131	21	373	**16**	410	60	32	30	122	53	268	36	357	1020
07:15 AM	20	65	**116**	201	41	333	11	385	**65**	**57**	37	**159**	**83**	210	42	335	1080
07:30 AM	21	58	108	187	**66**	**385**	11	**462**	52	51	**40**	143	48	**283**	34	**365**	**1157**
07:45 AM	**24**	**86**	98	**208**	63	324	12	399	37	36	21	94	52	241	**57**	350	1051
Total Volume	79	240	408	727	191	1415	50	1656	214	176	128	518	236	1002	169	1407	4308
% App. Total	10.9	33	56.1		11.5	85.4	3		41.3	34	24.7		16.8	71.2	12		
PHF	.823	.698	.879	.874	.723	.919	.781	.896	.823	.772	.800	.814	.711	.885	.741	.964	.931

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City of Menifee
N/S: Menifee Road
E/W: Newport Road
Weather: Clear

File Name : 23_MEN MENE AM
Site Code : 06717552
Start Date : 8/29/2017
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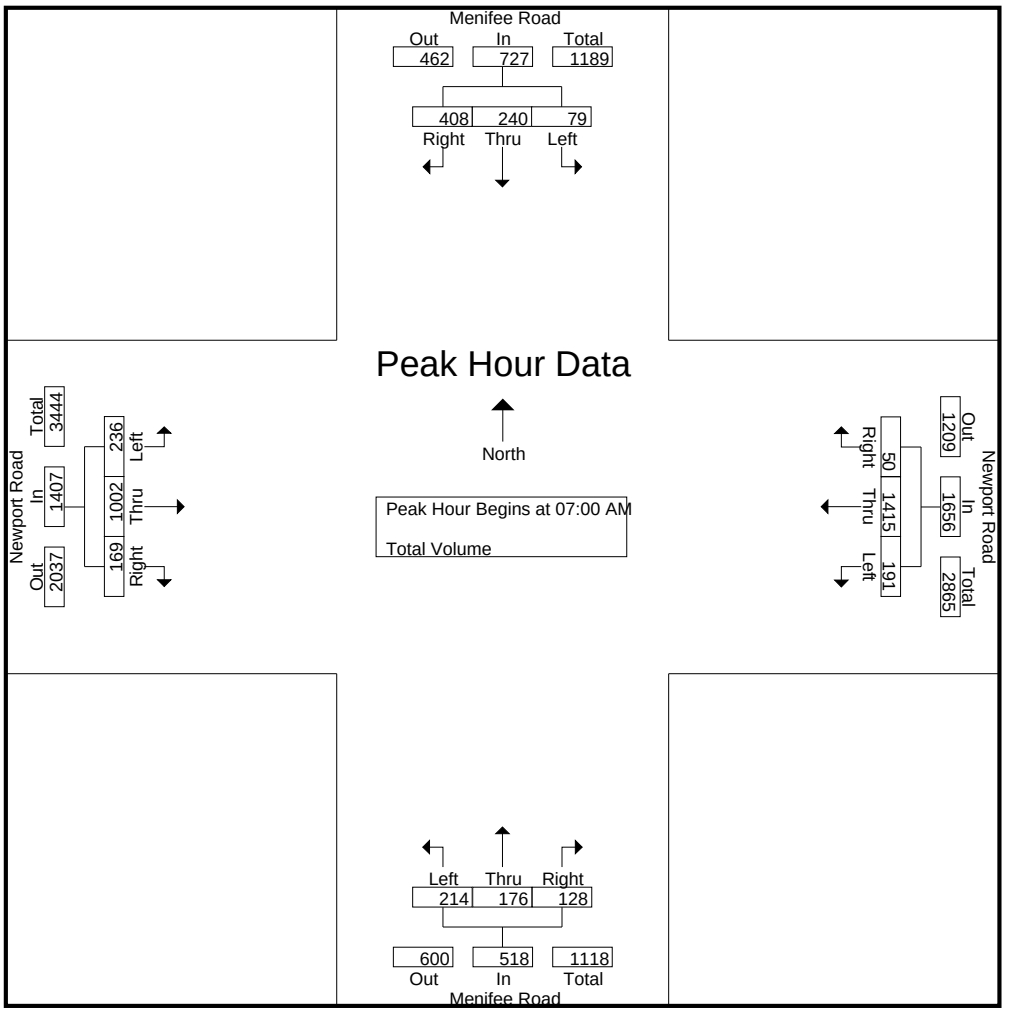

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	20	65	**116**	201	21	373	**16**	410	60	32	30	122	53	268	36	357
+15 mins.	21	58	108	187	41	333	11	385	**65**	**57**	37	**159**	**83**	210	42	335
+30 mins.	**24**	**86**	98	**208**	**66**	**385**	11	**462**	52	51	**40**	143	48	**283**	34	**365**
+45 mins.	16	45	78	139	63	324	12	399	37	36	21	94	52	241	**57**	350
Total Volume	81	254	400	735	191	1415	50	1656	214	176	128	518	236	1002	169	1407
% App. Total	11	34.6	54.4		11.5	85.4	3		41.3	34	24.7		16.8	71.2	12	
PHF	.844	.738	.862	.883	.723	.919	.781	.896	.823	.772	.800	.814	.711	.885	.741	.964

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City of Menifee
N/S: Menifee Road
E/W: Newport Road
Weather: Clear

File Name : 23_MEN MENE MD
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Menifee Road Southbound				Newport Road Westbound				Menifee Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
02:00 PM	37	48	25	110	62	207	28	297	15	41	66	122	33	189	10	232	761
02:15 PM	38	47	28	113	63	308	26	397	22	44	103	169	26	265	5	296	975
02:30 PM	47	47	19	113	61	271	26	358	15	26	84	125	25	227	15	267	863
02:45 PM	46	35	20	101	79	326	30	435	9	27	42	78	26	223	17	266	880
Total	168	177	92	437	265	1112	110	1487	61	138	295	494	110	904	47	1061	3479
03:00 PM	61	54	24	139	83	275	41	399	29	39	61	129	25	236	19	280	947
03:15 PM	59	69	43	171	77	318	34	429	26	42	52	120	29	199	14	242	962
03:30 PM	41	49	29	119	79	308	35	422	31	48	56	135	33	283	11	327	1003
03:45 PM	39	47	18	104	73	296	55	424	19	48	57	124	34	240	16	290	942
Total	200	219	114	533	312	1197	165	1674	105	177	226	508	121	958	60	1139	3854
Grand Total	368	396	206	970	577	2309	275	3161	166	315	521	1002	231	1862	107	2200	7333
Apprch %	37.9	40.8	21.2		18.3	73	8.7		16.6	31.4	52		10.5	84.6	4.9		
Total %	5	5.4	2.8	13.2	7.9	31.5	3.8	43.1	2.3	4.3	7.1	13.7	3.2	25.4	1.5	30	

	Menifee Road Southbound				Newport Road Westbound				Menifee Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	**61**	54	24	139	**83**	275	41	399	29	39	**61**	129	25	236	**19**	280	947
03:15 PM	59	**69**	**43**	**171**	77	**318**	34	**429**	26	42	52	120	29	199	14	242	962
03:30 PM	41	49	29	119	79	308	35	422	**31**	**48**	56	**135**	33	**283**	11	**327**	**1003**
03:45 PM	39	47	18	104	73	296	**55**	424	19	48	57	124	**34**	240	16	290	942
Total Volume	200	219	114	533	312	1197	165	1674	105	177	226	508	121	958	60	1139	3854
% App. Total	37.5	41.1	21.4		18.6	71.5	9.9		20.7	34.8	44.5		10.6	84.1	5.3		
PHF	.820	.793	.663	.779	.940	.941	.750	.976	.847	.922	.926	.941	.890	.846	.789	.871	.961

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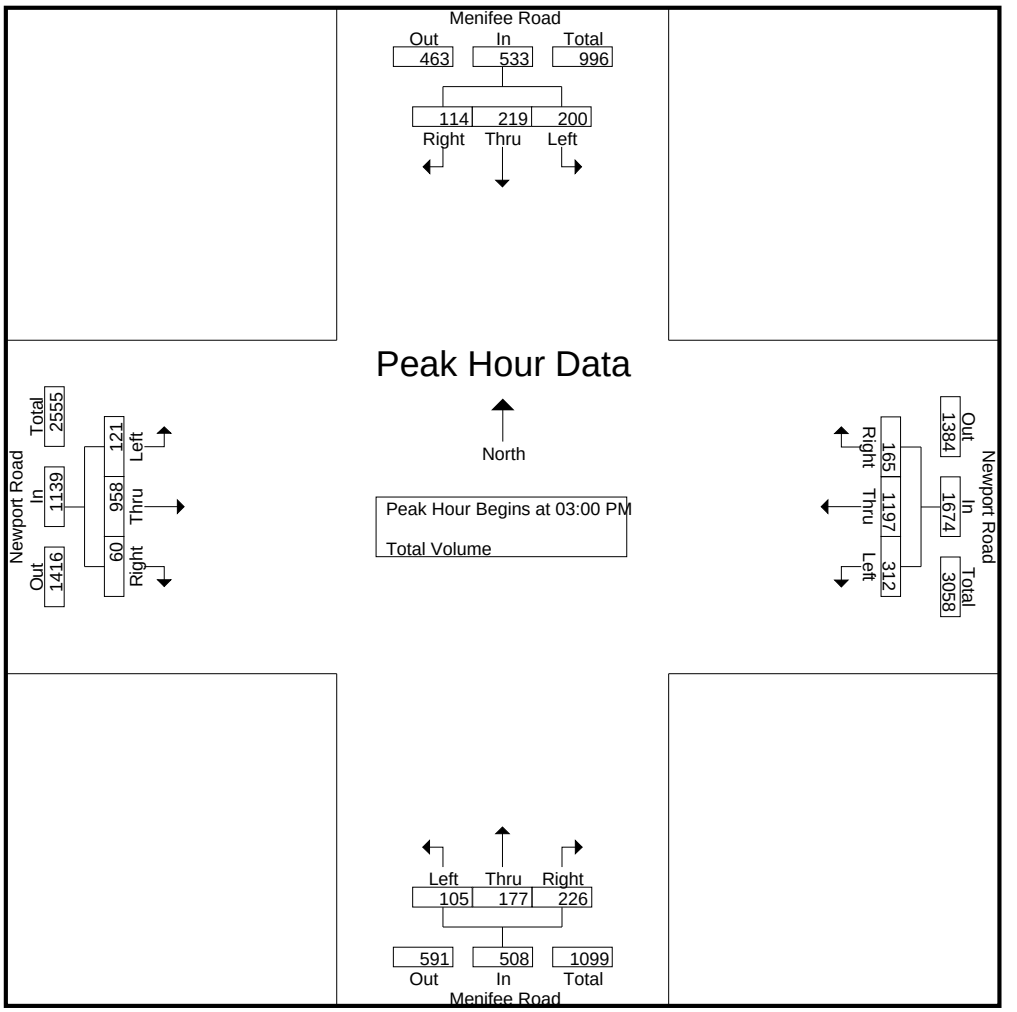
City of Menifee
N/S: Menifee Road
E/W: Newport Road
Weather: Clear

File Name : 23_MEN MENE MD
Site Code : 06717552
Start Date : 8/29/2017
Page No : 2



Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				02:45 PM				03:00 PM				03:00 PM			
+0 mins.	**61**	54	24	139	79	**326**	30	**435**	29	39	**61**	129	25	236	**19**	280
+15 mins.	59	**69**	**43**	**171**	**83**	275	**41**	399	26	42	52	120	29	199	14	242
+30 mins.	41	49	29	119	77	318	34	429	**31**	**48**	56	**135**	33	**283**	11	**327**
+45 mins.	39	47	18	104	79	308	35	422	19	48	57	124	**34**	240	16	290
Total Volume	200	219	114	533	318	1227	140	1685	105	177	226	508	121	958	60	1139
% App. Total	37.5	41.1	21.4		18.9	72.8	8.3		20.7	34.8	44.5		10.6	84.1	5.3	
PHF	.820	.793	.663	.779	.958	.941	.854	.968	.847	.922	.926	.941	.890	.846	.789	.871

Counts Unlimited
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City of Menifee
N/S: Menifee Road
E/W: Newport Road
Weather: Clear

File Name : 23_MEN MENE PM
Site Code : 06717552
Start Date : 8/29/2017
Page No : 1

Groups Printed- Total Volume

	Menifee Road Southbound				Newport Road Westbound				Menifee Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	22	34	50	106	30	216	12	258	41	50	22	113	63	330	33	426	903
04:15 PM	11	35	54	100	22	222	10	254	33	70	30	133	86	318	37	441	928
04:30 PM	22	42	56	120	45	244	14	303	30	49	21	100	81	279	31	391	914
04:45 PM	10	30	52	92	34	278	15	327	35	43	26	104	85	330	37	452	975
Total	65	141	212	418	131	960	51	1142	139	212	99	450	315	1257	138	1710	3720
05:00 PM	22	41	54	117	36	277	9	322	38	52	19	109	69	339	44	452	1000
05:15 PM	17	54	52	123	37	266	12	315	37	57	31	125	90	294	46	430	993
05:30 PM	14	43	75	132	45	274	10	329	40	62	25	127	102	308	32	442	1030
05:45 PM	21	72	52	145	29	260	5	294	30	70	20	120	81	323	54	458	1017
Total	74	210	233	517	147	1077	36	1260	145	241	95	481	342	1264	176	1782	4040
Grand Total	139	351	445	935	278	2037	87	2402	284	453	194	931	657	2521	314	3492	7760
Apprch %	14.9	37.5	47.6		11.6	84.8	3.6		30.5	48.7	20.8		18.8	72.2	9		
Total %	1.8	4.5	5.7	12	3.6	26.2	1.1	31	3.7	5.8	2.5	12	8.5	32.5	4	45	

	Menifee Road Southbound				Newport Road Westbound				Menifee Road Northbound				Newport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**22**	41	54	117	36	**277**	9	322	38	52	19	109	69	**339**	44	452	1000
05:15 PM	17	54	52	123	37	266	**12**	315	37	57	**31**	125	90	294	46	430	993
05:30 PM	14	43	**75**	132	**45**	274	10	**329**	**40**	62	25	**127**	**102**	308	32	442	**1030**
05:45 PM	21	**72**	52	**145**	29	260	5	294	30	**70**	20	120	81	323	**54**	**458**	1017
Total Volume	74	210	233	517	147	1077	36	1260	145	241	95	481	342	1264	176	1782	4040
% App. Total	14.3	40.6	45.1		11.7	85.5	2.9		30.1	50.1	19.8		19.2	70.9	9.9		
PHF	.841	.729	.777	.891	.817	.972	.750	.957	.906	.861	.766	.947	.838	.932	.815	.973	.981

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City of Menifee
N/S: Menifee Road
E/W: Newport Road
Weather: Clear

File Name : 23_MEN MENE PM
Site Code : 06717552
Start Date : 8/29/2017
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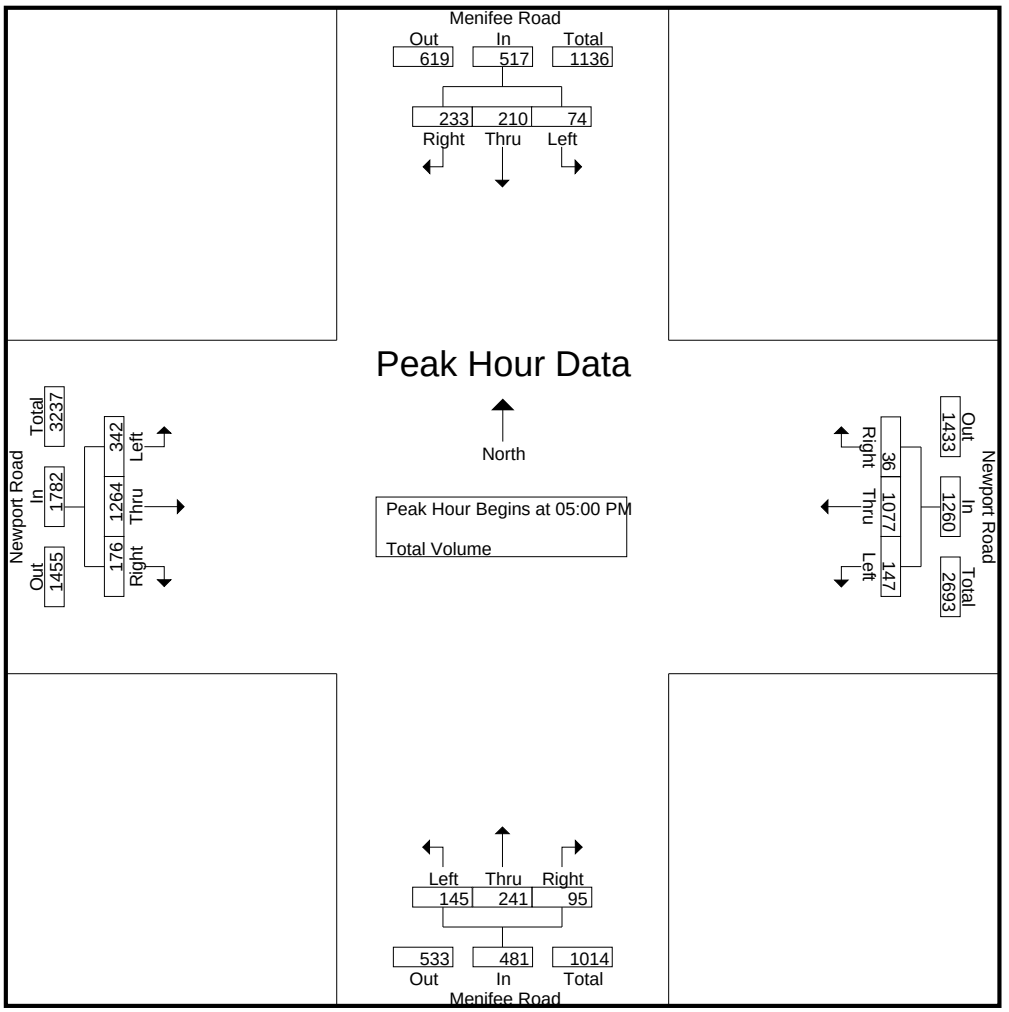

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:45 PM				05:00 PM				05:00 PM			
+0 mins.	**22**	41	54	117	34	**278**	**15**	327	38	52	19	109	69	**339**	44	452
+15 mins.	17	54	52	123	36	277	9	322	37	57	**31**	125	90	294	46	430
+30 mins.	14	43	**75**	132	37	266	12	315	**40**	62	25	**127**	**102**	308	32	442
+45 mins.	21	**72**	52	**145**	**45**	274	10	**329**	30	**70**	20	120	81	323	**54**	**458**
Total Volume	74	210	233	517	152	1095	46	1293	145	241	95	481	342	1264	176	1782
% App. Total	14.3	40.6	45.1		11.8	84.7	3.6		30.1	50.1	19.8		19.2	70.9	9.9	
PHF	.841	.729	.777	.891	.844	.985	.767	.983	.906	.861	.766	.947	.838	.932	.815	.973

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City of Menifee
N/S: Hanover Lane
E/W: Holland Road
Weather: Clear

File Name : 01_MEN_Hanover_Holland AM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 1

Groups Printed- Total Volume

	Hanover Lane Southbound				Holland Road Westbound				Hanover Lane Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	0	1	5	1	81	0	82	8	0	5	13	0	31	0	31	131
07:15 AM	9	1	3	13	2	86	1	89	7	0	13	20	1	33	1	35	157
07:30 AM	4	0	3	7	8	76	2	86	4	0	1	5	1	34	1	36	134
07:45 AM	0	0	1	1	1	43	1	45	3	0	1	4	0	31	1	32	82
Total	17	1	8	26	12	286	4	302	22	0	20	42	2	129	3	134	504
08:00 AM	0	0	2	2	2	36	0	38	5	0	1	6	0	25	2	27	73
08:15 AM	1	0	2	3	0	56	3	59	2	2	1	5	0	21	1	22	89
08:30 AM	3	0	3	6	2	59	1	62	7	1	1	9	2	25	2	29	106
08:45 AM	2	0	3	5	3	36	0	39	4	0	0	4	0	10	2	12	60
Total	6	0	10	16	7	187	4	198	18	3	3	24	2	81	7	90	328
Grand Total	23	1	18	42	19	473	8	500	40	3	23	66	4	210	10	224	832
Apprch %	54.8	2.4	42.9		3.8	94.6	1.6		60.6	4.5	34.8		1.8	93.8	4.5		
Total %	2.8	0.1	2.2	5	2.3	56.9	1	60.1	4.8	0.4	2.8	7.9	0.5	25.2	1.2	26.9	

	Hanover Lane Southbound				Holland Road Westbound				Hanover Lane Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	4	0	1	5	1	81	0	82	**8**	0	5	13	0	31	0	31	131
07:15 AM	**9**	**1**	**3**	**13**	2	**86**	1	**89**	7	0	**13**	**20**	**1**	33	**1**	35	**157**
07:30 AM	4	0	3	7	**8**	76	**2**	86	4	0	1	5	1	**34**	1	**36**	134
07:45 AM	0	0	1	1	1	43	1	45	3	0	1	4	0	31	1	32	82
Total Volume	17	1	8	26	12	286	4	302	22	0	20	42	2	129	3	134	504
% App. Total	65.4	3.8	30.8		4	94.7	1.3		52.4	0	47.6		1.5	96.3	2.2		
PHF	.472	.250	.667	.500	.375	.831	.500	.848	.688	.000	.385	.525	.500	.949	.750	.931	.803

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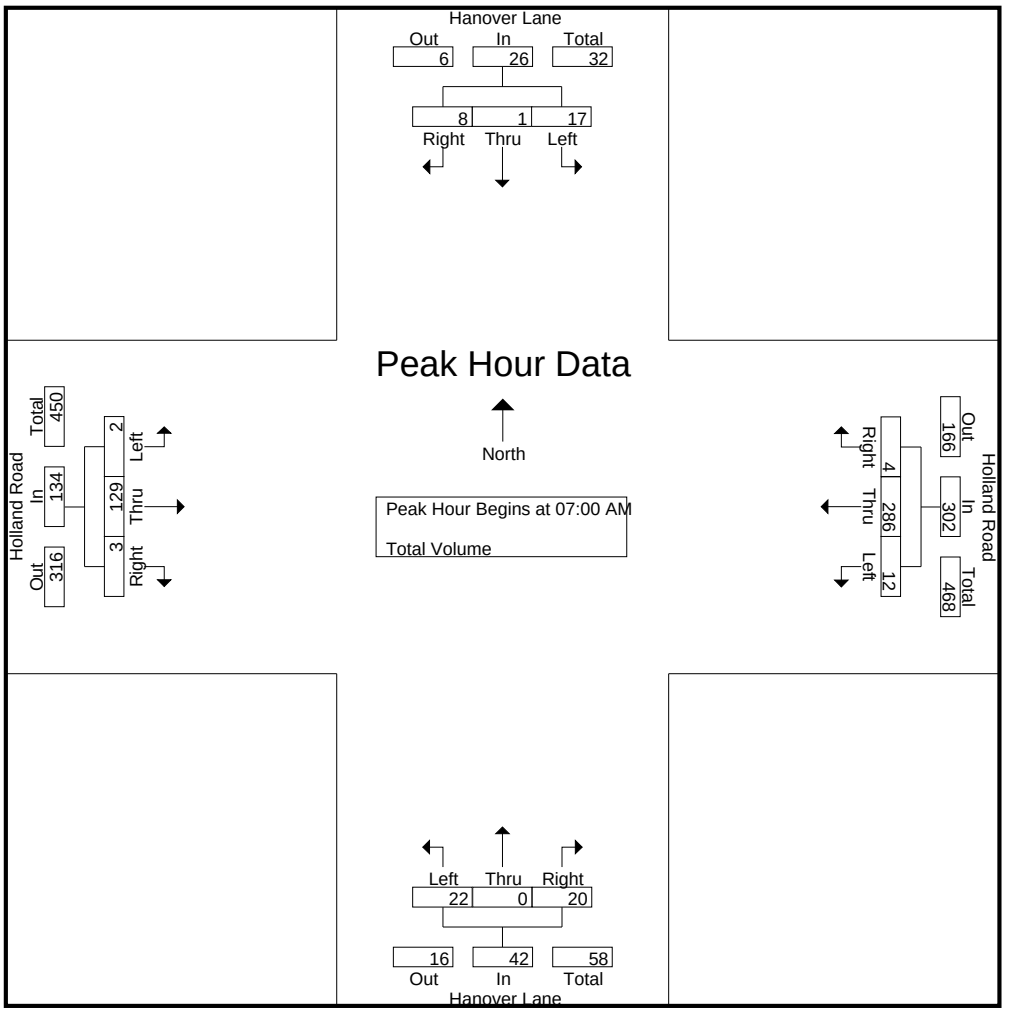
City of Menifee
N/S: Hanover Lane
E/W: Holland Road
Weather: Clear

File Name : 01_MEN_Hanover_Holland AM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	4	0	1	5	1	81	0	82	**8**	0	5	13	0	31	0	31
+15 mins.	**9**	**1**	**3**	**13**	2	**86**	1	**89**	7	0	**13**	**20**	**1**	33	**1**	35
+30 mins.	4	0	3	7	**8**	76	**2**	86	4	0	1	5	1	**34**	1	**36**
+45 mins.	0	0	1	1	1	43	1	45	3	0	1	4	0	31	1	32
Total Volume	17	1	8	26	12	286	4	302	22	0	20	42	2	129	3	134
% App. Total	65.4	3.8	30.8		4	94.7	1.3		52.4	0	47.6		1.5	96.3	2.2	
PHF	.472	.250	.667	.500	.375	.831	.500	.848	.688	.000	.385	.525	.500	.949	.750	.931

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City of Menifee
N/S: Hanover Lane
E/W: Holland Road
Weather: Clear

File Name : 01_MEN_Hanover_Holland PM
Site Code : 99915000
Start Date : 1/11/2018
Page No : 1

Groups Printed- Total Volume

	Hanover Lane Southbound				Holland Road Westbound				Hanover Lane Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	1	2	0	36	1	37	3	0	1	4	1	50	7	58	101
04:15 PM	0	0	2	2	3	38	4	45	7	0	3	10	1	60	5	66	123
04:30 PM	4	0	1	5	3	29	1	33	3	0	3	6	1	65	4	70	114
04:45 PM	2	1	1	4	4	31	5	40	4	0	6	10	3	63	10	76	130
Total	7	1	5	13	10	134	11	155	17	0	13	30	6	238	26	270	468
05:00 PM	4	0	3	7	4	39	5	48	7	1	3	11	3	56	5	64	130
05:15 PM	1	1	0	2	1	37	1	39	8	0	2	10	0	50	7	57	108
05:30 PM	4	0	3	7	0	46	2	48	3	1	1	5	2	56	10	68	128
05:45 PM	0	1	2	3	5	36	1	42	9	0	1	10	3	53	9	65	120
Total	9	2	8	19	10	158	9	177	27	2	7	36	8	215	31	254	486
Grand Total	16	3	13	32	20	292	20	332	44	2	20	66	14	453	57	524	954
Apprch %	50	9.4	40.6		6	88	6		66.7	3	30.3		2.7	86.5	10.9		
Total %	1.7	0.3	1.4	3.4	2.1	30.6	2.1	34.8	4.6	0.2	2.1	6.9	1.5	47.5	6	54.9	

	Hanover Lane Southbound				Holland Road Westbound				Hanover Lane Northbound				Holland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	2	2	3	38	4	45	**7**	0	3	10	1	60	5	66	123
04:30 PM	**4**	0	1	5	3	29	1	33	3	0	3	6	1	**65**	4	70	114
04:45 PM	2	**1**	1	4	**4**	31	**5**	40	4	0	**6**	10	**3**	63	**10**	**76**	**130**
05:00 PM	4	0	**3**	**7**	4	**39**	5	**48**	7	**1**	3	**11**	3	56	5	64	130
Total Volume	10	1	7	18	14	137	15	166	21	1	15	37	8	244	24	276	497
% App. Total	55.6	5.6	38.9		8.4	82.5	9		56.8	2.7	40.5		2.9	88.4	8.7		
PHF	.625	.250	.583	.643	.875	.878	.750	.865	.750	.250	.625	.841	.667	.938	.600	.908	.956

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City of Menifee
N/S: Hanover Lane
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File Name : 01_MEN_Hanover_Holland PM
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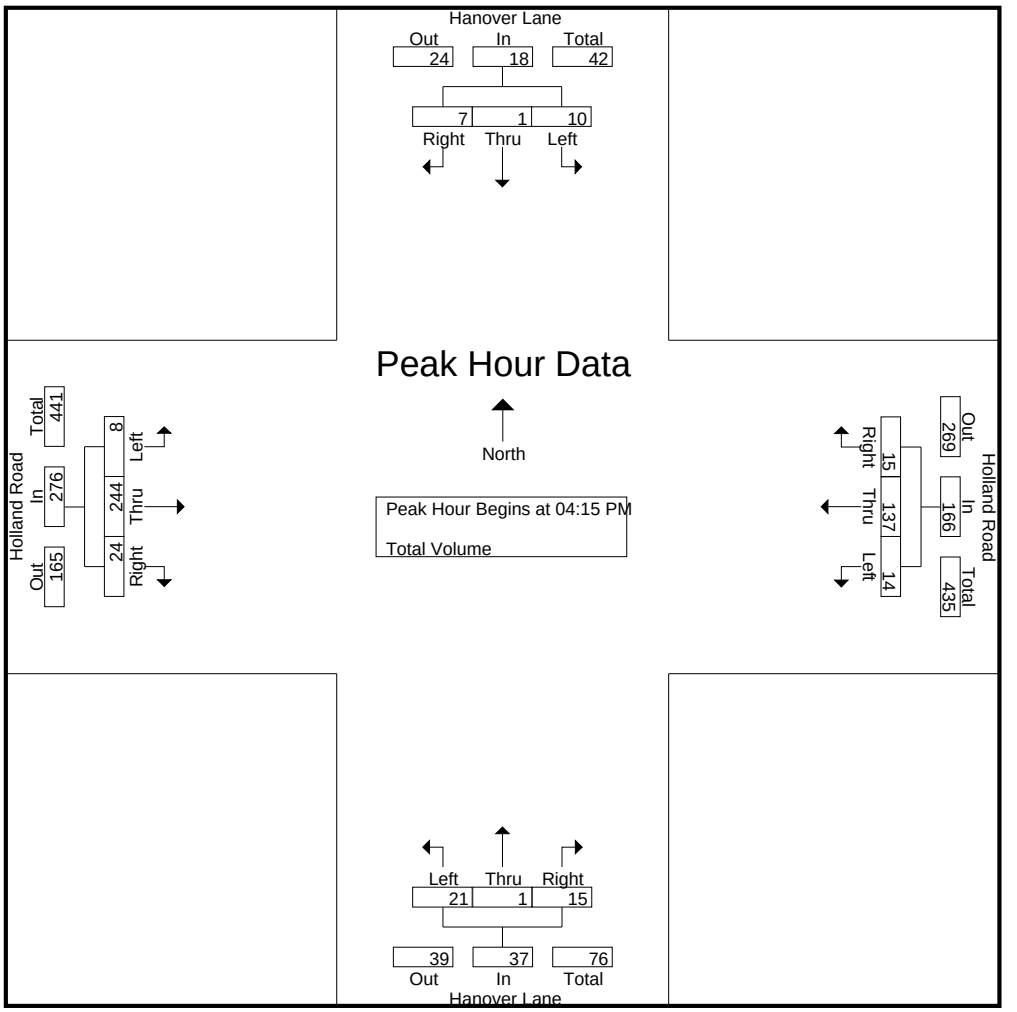
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				04:15 PM				04:15 PM			
+0 mins.	2	**1**	1	4	4	39	**5**	**48**	**7**	0	3	10	1	60	5	66
+15 mins.	**4**	0	**3**	**7**	1	37	1	39	3	0	3	6	1	**65**	4	70
+30 mins.	1	1	0	2	0	**46**	2	48	4	0	**6**	10	**3**	63	**10**	**76**
+45 mins.	4	0	3	7	**5**	36	1	42	7	**1**	3	**11**	3	56	5	64
Total Volume	11	2	7	20	10	158	9	177	21	1	15	37	8	244	24	276
% App. Total	55	10	35		5.6	89.3	5.1		56.8	2.7	40.5		2.9	88.4	8.7	
PHF	.688	.500	.583	.714	.500	.859	.450	.922	.750	.250	.625	.841	.667	.938	.600	.908

APPENDIX D

EXPLANATION AND CALCULATION OF INTERSECTION DELAY

EXPLANATION AND CALCULATION OF INTERSECTION LEVEL OF SERVICE USING DELAY METHODOLOGY

The Levels of Service at the unsignalized and signalized intersections are calculated using the delay methodology in the Highway Capacity Manual. This methodology views an intersection as consisting of several lane groups. A lane group is a set of lanes serving a movement. If there are two northbound left turn lanes, then the lane group serving the northbound left turn movement has two lanes. Similarly, there may be three lanes in the lane group serving the northbound through movement, one lane in the lane group serving the northbound right turn movement, and so forth. It is also possible for one lane to serve two lane groups. A shared lane might result in there being 1.5 lanes in the northbound left turn lane group and 2.5 lanes in the northbound through lane group.

For each lane group, there is a capacity. That capacity is calculated by multiplying the number of lanes in the lane group times a theoretical maximum lane capacity per lane time's 12 adjustment factors.

Each of the 12 adjustment factors has a value of approximately 1.00. A value less than 1.00 is generally assigned when a less than desirable condition occurs.

The 12 adjustment factors are as follows:

1. Peak hour factor (to account for peaking within the peak hour)
2. Lane utilization factor (to account for not all lanes loading equally)
3. Lane width
4. Percent of heavy trucks
5. Approach grade
6. Parking
7. Bus stops at intersections
8. Area type (CBD or other)
9. Right turns
10. Left turns
11. Pedestrian activity
12. Signal progression

The maximum theoretical lane capacity and the 12 adjustment factors for it are all unknowns for which approximate estimates have been recommended in the Highway Capacity Manual. For the most part, the recommended values are not based on statistical analysis but rather on educated estimates. However, it is possible to use the delay methodology and get reasonable results as will be discussed below.

Once the lane group volume is known and the lane group capacity is known, a volume to capacity ratio can be calculated for the lane group.

With a volume to capacity ratio calculated, average delay per vehicle in a lane group can be estimated. The average delay per vehicle in a lane group is calculated using a complex formula provided by the Highway Capacity Manual, which can be simplified and described as follows:

Delay per vehicle in a lane group is a function of the following:

1. Cycle length
2. Amount of red time faced by a lane group
3. Amount of yellow time for that lane group
4. The volume to capacity ratio of the lane group

The average delay per vehicle for each lane group is calculated, and eventually an overall average delay for all vehicles entering the intersection is calculated. This average delay per vehicle is then used to judge Level of Service. The Level of Services are defined in the table that follows this discussion.

Experience has shown that when a maximum lane capacity of 1,900 vehicles per hour is used (as recommended in the Highway Capacity Manual), little or no yellow time penalty is used, and none of the 12 penalty factors are applied, calculated delay is realistic. The delay calculation for instance assumes that yellow time is totally unused. Yet experience shows that most of the yellow time is used.

An idiosyncrasy of the delay methodology is that it is possible to add traffic to an intersection and reduce the average total delay per vehicle. If the average total delay is 30 seconds per vehicle for all vehicles traveling through an intersection, and traffic volumes are added to a movement that has an average total delay of 15 seconds per vehicle, then the overall average total delay is reduced.

The delay calculation for a lane group is based on a concept that the delay is a function of the amount of unused capacity available. As the volume approaches capacity and there is no more unused capacity available, then the delay rapidly increases. Delay is not proportional to volume, but rather increases rapidly as the unused capacity approaches zero.

Because delay is not linearly related to volumes, the delay does not reflect how close an intersection is to overloading. If an intersection is operating at Level of Service C and has an average total delay of 18 seconds per vehicle, you know very little as to what percent the traffic can increase before Level of Service E is reached.

LEVEL OF SERVICE DESCRIPTION[1]

Level of Service	Description	Average Total Delay per Vehicle (Seconds)	
		Signalized	Unsignalized
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 20.00	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.01 to 35.00	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 to 55.00	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 to 80.00	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up

[1] Source: Highway Capacity Manual Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2010.

EXISTING

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME.vistro
Report File: C:\...\AME.pdf

Scenario 1 Existing Morning Peak Hour
1/15/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.818	28.9	C
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.892	36.6	D
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	NB Thru	0.854	21.7	C
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	WB Right	0.677	16.3	C
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Left	0.823	23.5	C
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	SB Right	0.801	24.7	C
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	WB Left	0.063	240.6	F
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.863	32.0	C
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.608	9.0	A
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.863	22.5	C
18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.710	9.5	A
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.881	21.1	C
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.846	30.1	C
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.462	9.1	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.854	33.3	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.794	26.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For

all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.818

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	109	200	378	166	239	58	73	1097	67	337	764	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	200	378	166	239	58	73	1097	67	337	764	109
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	58	109	48	69	17	21	316	19	97	220	31
Total Analysis Volume [veh/h]	125	230	435	191	275	67	84	1262	77	388	879	125
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	21	21	23	31	0	11	40	0	16	45	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	91	91	91	91	91	91	91	91	91	91	91	91
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	15	40	12	18	18	6	27	27	21	43	43
g / C, Green / Cycle	0.09	0.16	0.44	0.13	0.20	0.20	0.07	0.30	0.30	0.23	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.27	0.11	0.09	0.10	0.05	0.25	0.25	0.11	0.17	0.08
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1739	1774	3547	1808	3445	5074	1583
c, Capacity [veh/h]	160	300	693	233	375	350	120	1064	542	804	2364	738
d1, Uniform Delay [s]	40.75	36.78	19.94	38.74	32.23	32.28	41.78	29.91	29.91	30.32	15.80	14.18
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.94	4.13	0.94	7.07	0.91	1.00	7.23	1.79	3.43	0.45	0.10	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

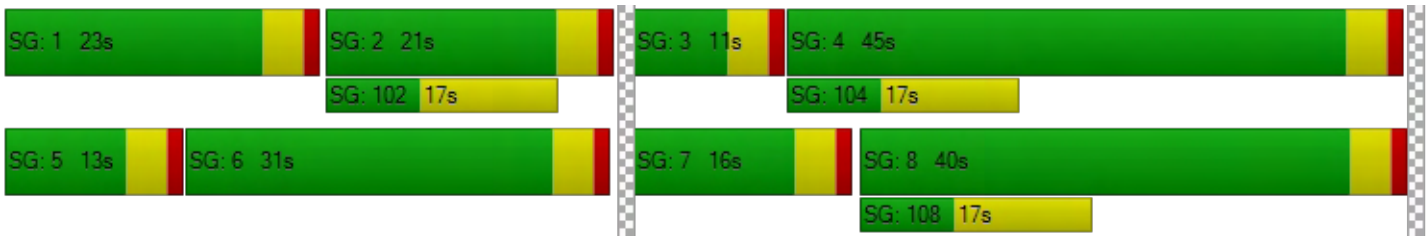
X, volume / capacity	0.78	0.77	0.63	0.82	0.47	0.47	0.70	0.83	0.83	0.48	0.37	0.17
d, Delay for Lane Group [s/veh]	48.68	40.91	20.88	45.81	33.14	33.28	49.02	31.70	33.35	30.77	15.90	14.29
Lane Group LOS	D	D	C	D	C	C	D	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.07	5.18	7.01	4.56	3.47	3.30	2.07	9.07	9.50	3.68	3.81	1.47
50th-Percentile Queue Length [ft/ln]	76.80	129.47	175.32	114.07	86.73	82.39	51.85	226.75	237.43	91.90	95.20	36.80
95th-Percentile Queue Length [veh/ln]	5.53	8.91	11.36	8.07	6.24	5.93	3.73	14.01	14.55	6.62	6.85	2.65
95th-Percentile Queue Length [ft/ln]	138.23	222.77	283.90	201.64	156.11	148.30	93.33	350.22	363.79	165.42	171.36	66.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.68	40.91	20.88	45.81	33.19	33.28	49.02	32.19	33.35	30.77	15.90	14.29
Movement LOS	D	D	C	D	C	C	D	C	C	C	B	B
d_A, Approach Delay [s/veh]	31.11			37.72			33.25			19.90		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	28.92											
Intersection LOS	C											
Intersection V/C	0.818											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	36.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.892

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	48	318	164	66	426	204	106	228	182	174	174	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	318	164	66	426	204	106	228	182	174	174	110
Peak Hour Factor	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	92	48	19	123	59	31	66	53	50	50	32
Total Analysis Volume [veh/h]	56	368	190	76	494	236	123	264	211	202	202	127
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	40	0	11	39	0	13	33	0	16	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	34	6	35	35	9	30	14	35	35
g / C, Green / Cycle	0.06	0.34	0.06	0.35	0.35	0.09	0.30	0.14	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.03	0.32	0.04	0.27	0.15	0.07	0.27	0.11	0.11	0.08
s, saturation flow rate [veh/h]	1774	1757	1774	1863	1583	1774	1727	1774	1863	1583
c, Capacity [veh/h]	98	602	109	650	553	156	518	241	647	550
d1, Uniform Delay [s]	46.10	31.67	46.03	28.86	24.92	44.69	33.83	42.16	23.89	23.16
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.12	6.76	7.69	1.86	0.52	8.39	7.00	7.55	0.27	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

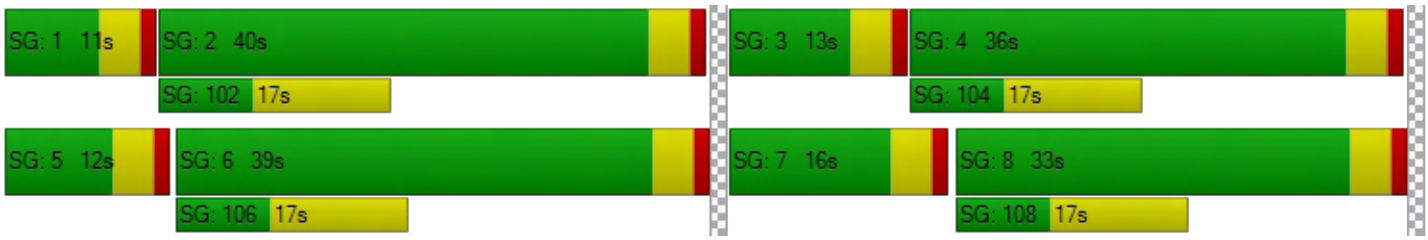
X, volume / capacity	0.57	0.93	0.70	0.76	0.43	0.79	0.92	0.84	0.31	0.23
d, Delay for Lane Group [s/veh]	51.22	38.43	53.72	30.72	25.44	53.09	40.83	49.70	24.16	23.37
Lane Group LOS	D	D	D	C	C	D	D	D	C	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.49	13.68	2.07	10.54	4.29	3.33	11.85	5.31	3.50	2.13
50th-Percentile Queue Length [ft/ln]	37.21	342.12	51.78	263.52	107.25	83.17	296.13	132.81	87.43	53.35
95th-Percentile Queue Length [veh/ln]	2.68	19.75	3.73	15.87	7.69	5.99	17.49	9.09	6.30	3.84
95th-Percentile Queue Length [ft/ln]	66.97	493.79	93.21	396.63	192.17	149.71	437.24	227.32	157.38	96.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.22	38.43	38.43	53.72	30.72	25.44	53.09	40.83	40.83	49.70	24.16	23.37
Movement LOS	D	D	D	D	C	C	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	39.60			31.34			43.35			33.69		
Approach LOS	D			C			D			C		
d_I, Intersection Delay [s/veh]	36.64											
Intersection LOS	D											
Intersection V/C	0.892											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	21.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.854

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	105	296	0	2	252	175	103	2	51	1	6	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	296	0	2	252	175	103	2	51	1	6	23
Peak Hour Factor	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	99	0	1	84	59	34	1	17	0	2	8
Total Analysis Volume [veh/h]	141	396	0	3	337	234	138	3	68	1	8	31
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	629	584	660	542	522
Degree of Utilization, x	0.85	0.58	0.35	0.39	0.08

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	9.58	3.73	1.60	1.81	0.25
95th-Percentile Queue Length [ft]	239.52	93.27	39.98	45.13	6.20
Approach Delay [s/veh]	33.20	14.67		13.75	10.47
Approach LOS	D	B		B	B
Intersection Delay [s/veh]	21.72				
Intersection LOS	C				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	16.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	0	278	1	1	2	2	0	0	6	364
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	0	278	1	1	2	2	0	0	6	364
Peak Hour Factor	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	0	94	0	0	1	1	0	0	2	123
Total Analysis Volume [veh/h]	0	4	0	376	1	1	3	3	0	0	8	492
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	611	663	600	637	727
Degree of Utilization, x	0.01	0.57	0.01	0.01	0.68

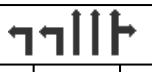
Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.02	3.61	0.03	0.04	5.32
95th-Percentile Queue Length [ft]	0.49	90.27	0.76	0.95	132.97
Approach Delay [s/veh]	8.93	15.37	9.06	17.23	
Approach LOS	A	C	A	C	
Intersection Delay [s/veh]	16.35				
Intersection LOS	C				

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.823

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	77	569	110	38	30	121	1432	206	709	1057	322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	77	569	110	38	30	121	1432	206	709	1057	322
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	20	150	29	10	8	32	378	54	187	279	85
Total Analysis Volume [veh/h]	142	81	600	116	40	32	128	1511	217	748	1115	340
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	22	22	11	21	0	53	62	0	45	54	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	94	94	94	94	94	94	94	94	94	94	94	94
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	9	38	7	8	8	7	37	37	26	56	56
g / C, Green / Cycle	0.07	0.09	0.41	0.07	0.09	0.09	0.07	0.39	0.39	0.27	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.04	0.04	0.21	0.03	0.02	0.02	0.04	0.30	0.14	0.22	0.28	0.29
s, saturation flow rate [veh/h]	3445	1863	2802	3445	1863	1604	3445	5074	1583	3445	3547	1653
c, Capacity [veh/h]	250	171	1143	244	167	144	247	1997	623	943	2112	984
d1, Uniform Delay [s]	42.19	40.57	20.98	42.02	39.75	39.83	42.08	24.63	20.04	31.69	10.64	10.77
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.02	2.04	0.38	1.43	0.66	0.86	1.67	0.60	0.33	1.56	0.16	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

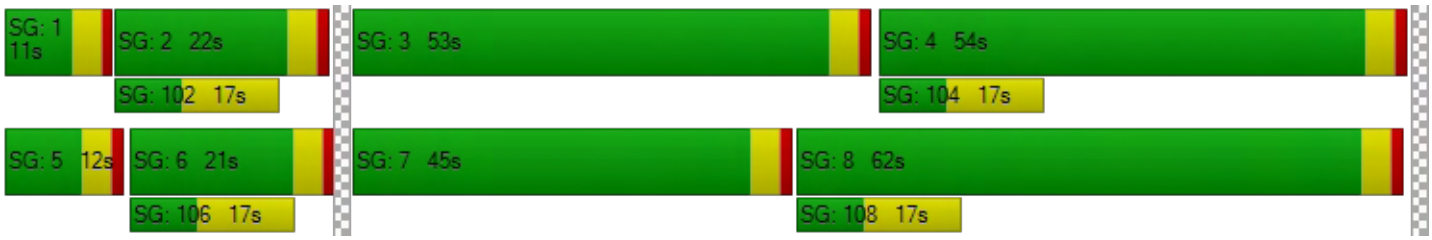
X, volume / capacity	0.57	0.47	0.52	0.48	0.22	0.24	0.52	0.76	0.35	0.79	0.47	0.48
d, Delay for Lane Group [s/veh]	44.21	42.61	21.36	43.45	40.40	40.69	43.75	25.23	20.37	33.24	10.80	11.13
Lane Group LOS	D	D	C	D	D	D	D	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.65	1.86	4.86	1.33	0.82	0.78	1.48	9.40	3.31	7.88	5.27	5.17
50th-Percentile Queue Length [ft/ln]	41.22	46.50	121.46	33.27	20.45	19.54	36.90	234.89	82.82	197.07	131.74	129.30
95th-Percentile Queue Length [veh/ln]	2.97	3.35	8.47	2.40	1.47	1.41	2.66	14.42	5.96	12.49	9.03	8.90
95th-Percentile Queue Length [ft/ln]	74.20	83.70	211.83	59.89	36.81	35.17	66.41	360.57	149.07	312.19	225.86	222.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.21	42.61	21.36	43.45	40.42	40.69	43.75	25.23	20.37	33.24	10.84	11.13
Movement LOS	D	D	C	D	D	D	D	C	C	C	B	B
d_A, Approach Delay [s/veh]	27.39			42.34			25.94			18.49		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	23.55											
Intersection LOS	C											
Intersection V/C	0.823											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	24.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.801

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	249	182	0	4	167	324	238	4	192	3	5	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	249	182	0	4	167	324	238	4	192	3	5	3
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	55	0	1	51	99	73	1	59	1	2	1
Total Analysis Volume [veh/h]	304	222	0	5	204	395	290	5	234	4	6	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	418	444	423	450	493	443	472	520	373
Degree of Utilization, x	0.73	0.50	0.01	0.45	0.80	0.65	0.01	0.45	0.04

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	5.72	2.73	0.04	2.32	7.49	4.58	0.03	2.30	0.12
95th-Percentile Queue Length [ft]	143.10	68.30	0.90	57.95	187.37	114.60	0.80	57.61	2.92
Approach Delay [s/veh]	25.89		27.69			20.47			13.02
Approach LOS	D		D			C			B
Intersection Delay [s/veh]	24.72								
Intersection LOS	C								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	240.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.063

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	347	320	0	0	330	26	15	0	264	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	347	320	0	0	330	26	15	0	264	1	0	1
Peak Hour Factor	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	112	103	0	0	107	8	5	0	85	0	0	0
Total Analysis Volume [veh/h]	448	413	0	0	426	34	19	0	341	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.41	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.54	0.06	0.00	0.00
d_M, Delay for Movement [s/veh]	10.49	0.00	0.00	8.14	0.00	0.00	126.95	80.91	17.31	240.63	85.70	18.57
Movement LOS	B	A	A	A	A	A	F	F	C	F	F	C
95th-Percentile Queue Length [veh/ln]	2.01	0.00	0.00	0.00	0.00	0.00	1.45	3.26	3.26	0.20	0.20	0.20
95th-Percentile Queue Length [ft/ln]	50.22	0.00	0.00	0.00	0.00	0.00	36.19	81.58	81.58	4.93	4.93	4.93
d_A, Approach Delay [s/veh]	5.46			0.00			23.10			129.60		
Approach LOS	A			A			C			F		
d_I, Intersection Delay [s/veh]	7.89											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	32.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	23	112	24	528	45	39	66	423	9	53	341	485
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	112	24	528	45	39	66	423	9	53	341	485
Peak Hour Factor	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	35	7	163	14	12	20	131	3	16	105	150
Total Analysis Volume [veh/h]	28	138	30	653	56	48	82	523	11	66	422	600
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	33	0	17	55	0	11	55	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	93	93	93	93	93	93	93	93	93	93
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	9	9	23	23	6	39	6	38	38
g / C, Green / Cycle	0.10	0.10	0.10	0.25	0.25	0.07	0.42	0.06	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.02	0.07	0.02	0.21	0.21	0.05	0.29	0.04	0.23	0.38
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1760	1774	1856	1774	1863	1583
c, Capacity [veh/h]	174	183	156	441	438	118	777	110	771	656
d1, Uniform Delay [s]	38.32	40.73	38.44	33.30	33.32	42.38	22.00	42.40	20.58	25.63
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.43	6.18	0.60	5.02	5.14	7.16	1.09	5.21	0.61	5.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

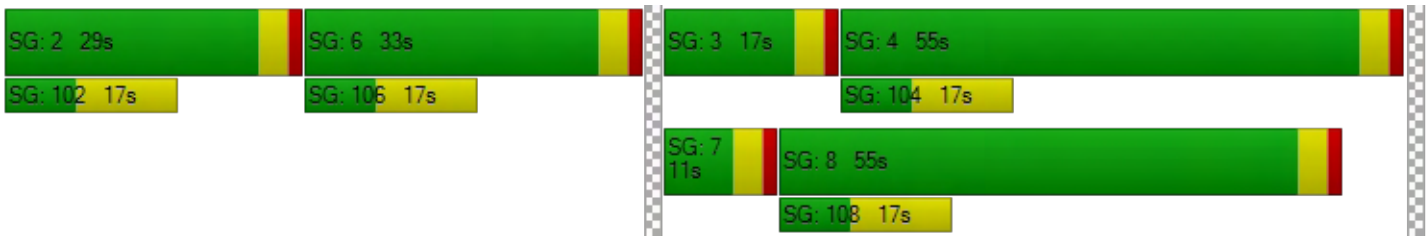
X, volume / capacity	0.16	0.75	0.19	0.86	0.86	0.70	0.69	0.60	0.55	0.92
d, Delay for Lane Group [s/veh]	38.75	46.91	39.04	38.33	38.47	49.54	23.09	47.60	21.19	31.21
Lane Group LOS	D	D	D	D	D	D	C	D	C	C
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.60	3.34	0.65	8.56	8.53	2.05	9.29	1.62	6.78	12.79
50th-Percentile Queue Length [ft/ln]	14.96	83.54	16.17	213.92	213.14	51.27	232.13	40.38	169.54	319.85
95th-Percentile Queue Length [veh/ln]	1.08	6.01	1.16	13.35	13.31	3.69	14.28	2.91	11.05	18.66
95th-Percentile Queue Length [ft/ln]	26.93	150.36	29.11	333.85	332.85	92.29	357.06	72.68	276.31	466.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.75	46.91	39.04	38.38	38.47	38.47	49.54	23.09	23.09	47.60	21.19	31.21
Movement LOS	D	D	D	D	D	D	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	44.54			38.40			26.61			28.32		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	31.99											
Intersection LOS	C											
Intersection V/C	0.863											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.608

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	333	0	439	0	1489	630	0	1666	1057
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	333	0	439	0	1489	630	0	1666	1057
Peak Hour Factor	1.0000	1.0000	1.0000	0.9340	1.0000	0.9340	1.0000	0.9340	0.9340	1.0000	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	89	0	118	0	399	0	0	446	0
Total Analysis Volume [veh/h]	0	0	0	357	0	470	0	1594	0	0	1784	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	51	0	0	0	89	0	0	89	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		56	56	56	56	56	56	56
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		13	13	13	35	35	35	35
g / C, Green / Cycle		0.23	0.23	0.23	0.62	0.62	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate		0.16	0.17	0.17	0.24	0.00	0.35	0.00
s, saturation flow rate [veh/h]		1774	1629	1583	6765	1583	5074	1583
c, Capacity [veh/h]		415	381	370	4223	988	3167	988
d1, Uniform Delay [s]		19.73	19.88	19.93	5.21	0.00	6.14	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.04	2.52	2.71	0.06	0.00	0.16	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.69	0.72	0.73	0.38	0.00	0.56	0.00
d, Delay for Lane Group [s/veh]		21.76	22.40	22.64	5.27	0.00	6.30	0.00
Lane Group LOS		C	C	C	A	A	A	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		3.33	3.25	3.22	1.58	0.00	2.79	0.00
50th-Percentile Queue Length [ft/ln]		83.26	81.21	80.55	39.39	0.00	69.73	0.00
95th-Percentile Queue Length [veh/ln]		5.99	5.85	5.80	2.84	0.00	5.02	0.00
95th-Percentile Queue Length [ft/ln]		149.87	146.18	144.99	70.90	0.00	125.51	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	21.90	0.00	22.54	0.00	5.27	0.00	0.00	6.30	0.00
Movement LOS				C		C		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			22.26			5.27			6.30		
Approach LOS	A			C			A			A		
d_I, Intersection Delay [s/veh]	9.05											
Intersection LOS	A											
Intersection V/C	0.608											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	322	0	134	0	501	379	385	592	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	322	0	134	0	501	379	385	592	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9250	1.0000	0.9250	1.0000	0.9250	0.9250	0.9250	0.9250	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	87	0	36	0	135	102	104	160	0
Total Analysis Volume [veh/h]	0	0	0	348	0	145	0	542	410	416	640	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	120	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	25	0	0	0	41	0	34	75	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		73	73	73	73	73	73
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		17	17	25	25	20	48
g / C, Green / Cycle		0.23	0.23	0.34	0.34	0.27	0.66
(v / s)_i Volume / Saturation Flow Rate		0.20	0.09	0.29	0.26	0.23	0.34
s, saturation flow rate [veh/h]		1774	1583	1863	1583	1774	1863
c, Capacity [veh/h]		413	368	628	534	474	1227
d1, Uniform Delay [s]		26.91	23.81	22.77	21.79	25.78	6.52
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		4.76	0.68	3.69	2.36	5.38	0.35
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.84	0.39	0.86	0.77	0.88	0.52
d, Delay for Lane Group [s/veh]		31.67	24.50	26.46	24.15	31.16	6.87
Lane Group LOS		C	C	C	C	C	A
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		6.07	2.11	8.77	6.23	7.26	4.09
50th-Percentile Queue Length [ft/ln]		151.64	52.63	219.13	155.71	181.41	102.26
95th-Percentile Queue Length [veh/ln]		10.10	3.79	13.62	10.32	11.67	7.36
95th-Percentile Queue Length [ft/ln]		252.62	94.74	340.52	258.03	291.86	184.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	31.67	0.00	24.50	0.00	26.46	24.15	31.16	6.87	0.00
Movement LOS				C		C		C	C	C	A	
d_A, Approach Delay [s/veh]	0.00			29.56			25.47			16.44		
Approach LOS	A			C			C			B		
d_I, Intersection Delay [s/veh]	22.46											
Intersection LOS	C											
Intersection V/C	0.863											

Sequence

Ring 1	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.710

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	402	0	541	0	0	0	0	1456	345	0	2313	491
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	402	0	541	0	0	0	0	1456	345	0	2313	491
Peak Hour Factor	0.9350	1.0000	0.9350	1.0000	1.0000	1.0000	1.0000	0.9350	0.9350	1.0000	0.9350	0.9350
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	107	0	145	0	0	0	0	389	0	0	618	0
Total Analysis Volume [veh/h]	430	0	579	0	0	0	0	1557	0	0	2474	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	79	0	0	0	0	0	0	61	0	0	61	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	43	43	43		43	43	43	43
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	13		22	22	22	22
g / C, Green / Cycle	0.30	0.30	0.30		0.51	0.51	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.19	0.21	0.21		0.31	0.00	0.37	0.00
s, saturation flow rate [veh/h]	1774	1632	1583		5074	1583	6765	1583
c, Capacity [veh/h]	539	496	481		2595	810	3460	810
d1, Uniform Delay [s]	12.94	13.21	13.32		7.46	0.00	8.15	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.19	1.63	1.85		0.22	0.00	0.28	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

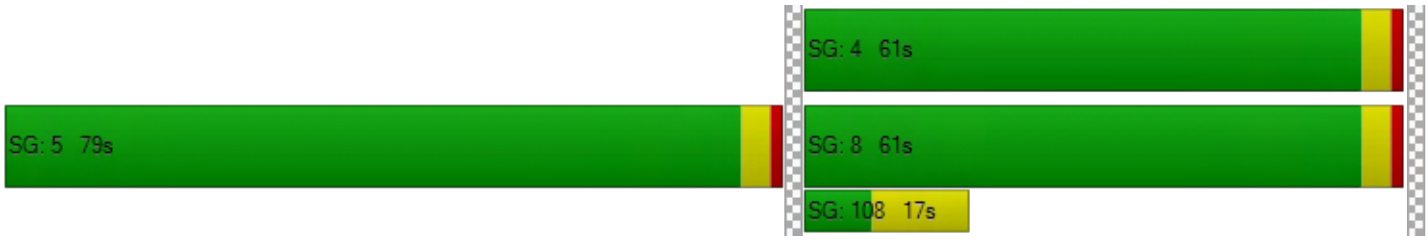
X, volume / capacity	0.62	0.68	0.70		0.60	0.00	0.72	0.00
d, Delay for Lane Group [s/veh]	14.13	14.85	15.17		7.68	0.00	8.43	0.00
Lane Group LOS	B	B	B		A	A	A	A
Critical Lane Group	No	No	Yes		No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.45	2.54	2.58		2.28	0.00	2.97	0.00
50th-Percentile Queue Length [ft/ln]	61.13	63.48	64.51		56.99	0.00	74.15	0.00
95th-Percentile Queue Length [veh/ln]	4.40	4.57	4.65		4.10	0.00	5.34	0.00
95th-Percentile Queue Length [ft/ln]	110.03	114.27	116.13		102.59	0.00	133.48	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.29	0.00	15.04	0.00	0.00	0.00	0.00	7.68	0.00	0.00	8.43	0.00
Movement LOS	B		B					A	A		A	A
d_A, Approach Delay [s/veh]	14.72			0.00			7.68			8.43		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	9.46											
Intersection LOS	A											
Intersection V/C	0.710											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.881

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	235	0	372	0	0	0	83	722	0	0	794	465
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	235	0	372	0	0	0	83	722	0	0	794	465
Peak Hour Factor	0.9380	1.0000	0.9380	1.0000	1.0000	1.0000	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	0	99	0	0	0	22	192	0	0	212	124
Total Analysis Volume [veh/h]	251	0	397	0	0	0	88	770	0	0	846	496
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	35	0	0	0	0	0	11	65	0	0	54	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	R
C, Cycle Length [s]	83	83		83	83	83	83
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	24		6	51	41	41
g / C, Green / Cycle	0.29	0.29		0.07	0.62	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.14	0.25		0.05	0.41	0.45	0.31
s, saturation flow rate [veh/h]	1774	1583		1774	1863	1863	1583
c, Capacity [veh/h]	507	453		130	1152	926	787
d1, Uniform Delay [s]	24.78	28.40		37.72	10.37	19.32	15.36
k, delay calibration	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	5.57		6.07	0.68	4.02	0.84
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

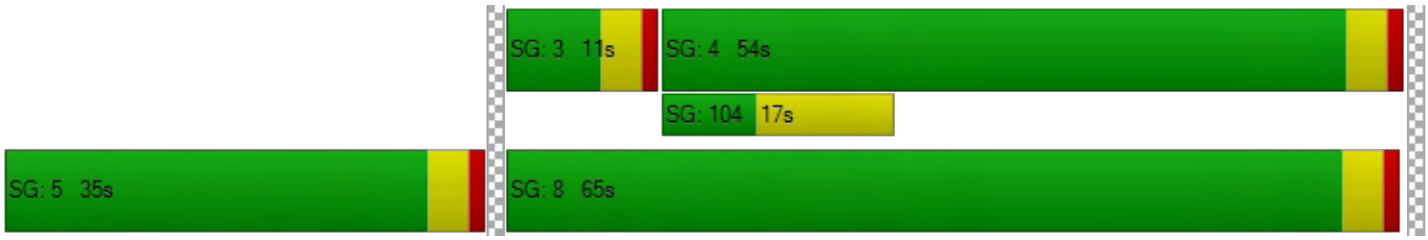
X, volume / capacity	0.49	0.88		0.68	0.67	0.91	0.63
d, Delay for Lane Group [s/veh]	25.53	33.97		43.79	11.04	23.34	16.20
Lane Group LOS	C	C		D	B	C	B
Critical Lane Group	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.09	7.93		1.94	8.03	14.60	6.51
50th-Percentile Queue Length [ft/ln]	102.35	198.22		48.43	200.66	365.04	162.64
95th-Percentile Queue Length [veh/ln]	7.37	12.55		3.49	12.67	20.87	10.69
95th-Percentile Queue Length [ft/ln]	184.23	313.67		87.18	316.81	521.71	267.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.53	0.00	33.97	0.00	0.00	0.00	43.79	11.04	0.00	0.00	23.34	16.20
Movement LOS	C		C				D	B			C	B
d_A, Approach Delay [s/veh]	30.70			0.00			14.40			20.70		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	21.08											
Intersection LOS	C											
Intersection V/C	0.881											

Sequence

Ring 1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.846

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	580	31	97	77	64	175	75	1252	658	137	2049	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	580	31	97	77	64	175	75	1252	658	137	2049	41
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	152	8	25	20	17	46	20	327	172	36	535	11
Total Analysis Volume [veh/h]	606	32	101	80	67	183	78	1308	688	143	2141	43
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	40	41	0	20	21	0	11	68	0	11	68	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	114	114	114	114	114	114	114	114	114	114	114	114
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	28	28	6	11	11	6	57	57	7	57	57
g / C, Green / Cycle	0.20	0.25	0.25	0.06	0.10	0.10	0.06	0.50	0.50	0.06	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.18	0.02	0.06	0.02	0.08	0.08	0.02	0.26	0.43	0.04	0.40	0.41
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1716	1583	3445	5074	1583	3445	3547	1844
c, Capacity [veh/h]	704	458	389	194	168	155	193	2522	787	211	1781	926
d1, Uniform Delay [s]	44.00	33.17	34.82	52.23	50.46	50.50	52.23	19.52	25.62	52.68	23.84	23.90
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.23	0.06	0.35	1.40	7.39	8.21	1.36	0.17	3.25	3.79	0.90	1.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

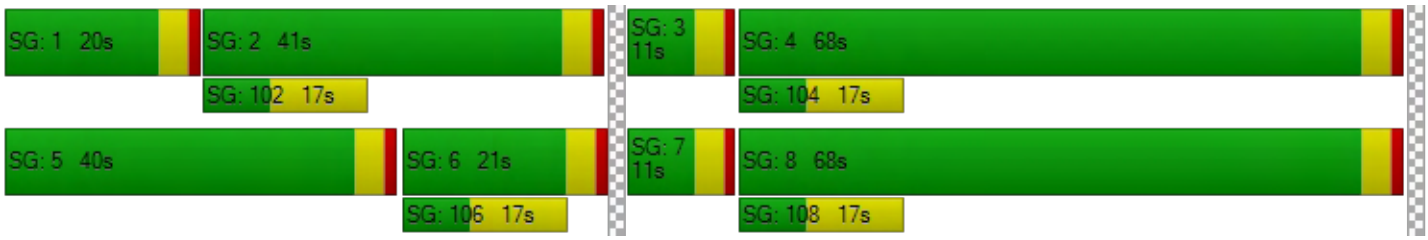
X, volume / capacity	0.86	0.07	0.26	0.41	0.77	0.78	0.40	0.52	0.87	0.68	0.81	0.81
d, Delay for Lane Group [s/veh]	47.23	33.23	35.17	53.63	57.86	58.71	53.59	19.69	28.87	56.47	24.74	25.64
Lane Group LOS	D	C	D	D	E	E	D	B	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.55	0.70	2.31	1.15	3.96	3.72	1.12	7.74	16.65	2.12	15.82	16.77
50th-Percentile Queue Length [ft/ln]	213.85	17.38	57.85	28.70	99.01	92.88	27.97	193.41	416.33	53.05	395.51	419.13
95th-Percentile Queue Length [veh/ln]	13.35	1.25	4.16	2.07	7.13	6.69	2.01	12.30	23.35	3.82	22.34	23.48
95th-Percentile Queue Length [ft/ln]	333.77	31.28	104.12	51.65	178.21	167.19	50.34	307.45	583.65	95.48	558.59	587.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.23	33.23	35.17	53.63	57.86	58.42	53.59	19.69	28.87	56.47	25.03	25.64
Movement LOS	D	C	D	D	E	E	D	B	C	E	C	C
d_A, Approach Delay [s/veh]	44.97			57.14			24.01			26.98		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	30.10											
Intersection LOS	C											
Intersection V/C	0.846											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.462

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			Yes			Yes	

Volumes

Name												
Base Volume Input [veh/h]	0	509	39	92	302	0	0	0	0	119	0	178
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	509	39	92	302	0	0	0	0	119	0	178
Peak Hour Factor	1.0000	0.9190	0.9190	0.9190	0.9190	1.0000	1.0000	1.0000	1.0000	0.9190	1.0000	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	138	11	25	82	0	0	0	0	32	0	48
Total Analysis Volume [veh/h]	0	554	42	100	329	0	0	0	0	129	0	194
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	55	0	20	75	0	0	0	0	25	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	30	30	30	30		30	30	30
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	4	16		7	7	7
g / C, Green / Cycle	0.25	0.25	0.13	0.52		0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.16	0.03	0.06	0.09		0.06	0.07	0.07
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1607	1583
c, Capacity [veh/h]	895	399	237	1838		385	349	344
d1, Uniform Delay [s]	10.02	8.68	12.02	3.87		9.90	9.91	9.91
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.70	0.11	1.19	0.05		0.43	0.48	0.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.62	0.11	0.42	0.18		0.30	0.30	0.30
d, Delay for Lane Group [s/veh]	10.72	8.80	13.22	3.91		10.33	10.39	10.40
Lane Group LOS	B	A	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.20	0.16	0.54	0.22		0.50	0.46	0.45
50th-Percentile Queue Length [ft/ln]	29.95	3.97	13.55	5.54		12.38	11.45	11.32
95th-Percentile Queue Length [veh/ln]	2.16	0.29	0.98	0.40		0.89	0.82	0.81
95th-Percentile Queue Length [ft/ln]	53.91	7.14	24.40	9.98		22.29	20.62	20.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.72	8.80	13.22	3.91	0.00	0.00	0.00	0.00	10.34	0.00	10.39
Movement LOS		B	A	B	A					B		B
d_A, Approach Delay [s/veh]	10.59			6.08			0.00			10.37		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	9.10											
Intersection LOS	A											
Intersection V/C	0.462											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	33.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.854

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	310	152	88	40	180	369	249	624	277	24	640	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	310	152	88	40	180	369	249	624	277	24	640	46
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	84	41	24	11	49	100	67	169	75	7	173	12
Total Analysis Volume [veh/h]	336	165	95	43	195	400	270	676	300	26	693	50
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	36	0	15	36	0	21	38	0	11	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	91	91	91	91	91	91	91	91	91	91	91	91
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	33	33	5	26	26	16	34	34	3	21	21
g / C, Green / Cycle	0.13	0.36	0.36	0.05	0.28	0.28	0.18	0.38	0.38	0.04	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.10	0.09	0.06	0.02	0.10	0.25	0.15	0.28	0.28	0.01	0.20	0.20
s, saturation flow rate [veh/h]	3445	1863	1583	1774	1863	1583	1774	1863	1672	1774	1863	1819
c, Capacity [veh/h]	440	671	570	91	528	449	315	701	629	66	440	429
d1, Uniform Delay [s]	38.48	20.50	19.88	42.11	26.16	31.34	36.42	24.49	24.56	42.93	33.36	33.37
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.79	0.19	0.14	3.81	0.43	6.28	6.74	1.49	1.71	3.78	4.84	4.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

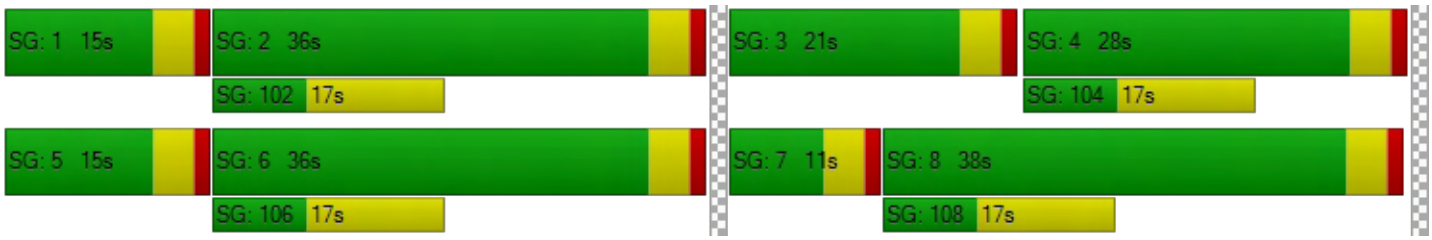
X, volume / capacity	0.76	0.25	0.17	0.47	0.37	0.89	0.86	0.73	0.74	0.39	0.85	0.86
d, Delay for Lane Group [s/veh]	41.26	20.69	20.02	45.92	26.59	37.62	43.15	25.98	26.27	46.71	38.20	38.35
Lane Group LOS	D	C	C	D	C	D	D	C	C	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.74	2.44	1.37	1.03	3.38	8.94	6.30	9.41	8.57	0.64	8.33	8.16
50th-Percentile Queue Length [ft/ln]	93.53	61.11	34.16	25.66	84.58	223.54	157.44	235.17	214.32	15.89	208.25	204.03
95th-Percentile Queue Length [veh/ln]	6.73	4.40	2.46	1.85	6.09	13.85	10.41	14.44	13.37	1.14	13.06	12.85
95th-Percentile Queue Length [ft/ln]	168.36	110.00	61.49	46.19	152.24	346.14	260.34	360.92	334.36	28.61	326.59	321.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.26	20.69	20.02	45.92	26.59	37.62	43.15	26.05	26.27	46.71	38.27	38.35
Movement LOS	D	C	C	D	C	D	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	32.18			34.81			29.81			38.56		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	33.30											
Intersection LOS	C											
Intersection V/C	0.854											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.794

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	214	176	128	79	240	408	236	1002	169	191	1415	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	214	176	128	79	240	408	236	1002	169	191	1415	50
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	47	34	21	64	110	63	269	45	51	380	13
Total Analysis Volume [veh/h]	230	189	137	85	258	438	253	1076	182	205	1520	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	22	22	23	21	21	18	44	0	11	37	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	89	89	89	89	89	89	89	89	89	89	89	89
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	14	27	6	12	33	18	44	44	9	35	35
g / C, Green / Cycle	0.09	0.16	0.30	0.07	0.13	0.37	0.20	0.49	0.49	0.10	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.07	0.05	0.09	0.05	0.07	0.28	0.07	0.34	0.35	0.06	0.30	0.03
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1771	3445	5074	1583
c, Capacity [veh/h]	327	553	476	123	462	594	688	922	877	343	2004	625
d1, Uniform Delay [s]	38.95	33.40	23.78	40.37	36.20	23.96	30.68	17.24	17.37	38.26	23.19	16.82
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.77	0.37	0.33	6.76	1.06	1.81	0.33	0.95	1.05	1.67	0.61	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.70	0.34	0.29	0.69	0.56	0.74	0.37	0.69	0.70	0.60	0.76	0.09
d, Delay for Lane Group [s/veh]	41.72	33.77	24.11	47.13	37.26	25.78	31.01	18.19	18.43	39.93	23.80	16.88
Lane Group LOS	D	C	C	D	D	C	C	B	B	D	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.52	1.81	2.19	2.02	2.64	7.87	2.33	9.56	9.32	2.18	8.80	0.68
50th-Percentile Queue Length [ft/ln]	62.89	45.36	54.85	50.46	66.12	196.71	58.19	238.88	232.90	54.52	220.00	17.04
95th-Percentile Queue Length [veh/ln]	4.53	3.27	3.95	3.63	4.76	12.47	4.19	14.62	14.32	3.93	13.67	1.23
95th-Percentile Queue Length [ft/ln]	113.20	81.64	98.72	90.82	119.01	311.72	104.73	365.62	358.04	98.14	341.63	30.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.72	33.77	24.11	47.13	37.26	25.78	31.01	18.28	18.43	39.93	23.80	16.88
Movement LOS	D	C	C	D	D	C	C	B	B	D	C	B
d_A, Approach Delay [s/veh]	34.68			31.89			20.43			25.45		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	26.01											
Intersection LOS	C											
Intersection V/C	0.794											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME.vistro
Report File: C:\...\PME.pdf

Scenario 1 Existing Evening Peak Hour
1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.723	20.3	C
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	NB Left	0.607	15.9	B
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	EB Left	0.214	8.4	A
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	SB Left	0.146	7.8	A
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.879	32.8	C
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	NB Left	0.591	19.4	C
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	WB Left	0.024	27.0	D
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.667	18.8	B
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.649	12.6	B
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.888	25.5	C
18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.703	18.7	B
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.897	26.0	C
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.823	41.2	D
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.466	8.9	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.808	28.9	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.811	21.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For

all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	20.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.723

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	85	113	160	225	157	104	120	1108	48	284	1227	282
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	113	160	225	157	104	120	1108	48	284	1227	282
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	29	41	58	40	27	31	285	12	73	315	72
Total Analysis Volume [veh/h]	87	116	164	231	161	107	123	1139	49	292	1261	290
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	21	21	24	33	0	15	38	0	14	40	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	61	61	61	61	61	61	61	61	61	61	61	61
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	7	19	10	12	12	6	20	20	8	22	22
g / C, Green / Cycle	0.09	0.11	0.31	0.16	0.19	0.19	0.10	0.33	0.33	0.13	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.05	0.06	0.10	0.13	0.08	0.08	0.07	0.22	0.22	0.08	0.25	0.18
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1621	1774	3547	1824	3445	5074	1583
c, Capacity [veh/h]	158	211	496	293	353	307	178	1157	595	464	1828	571
d1, Uniform Delay [s]	26.80	25.74	16.16	24.59	21.81	21.87	26.68	17.88	17.89	25.11	16.71	15.38
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.00	2.23	0.39	4.71	0.73	0.89	4.67	0.70	1.36	1.41	0.47	0.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

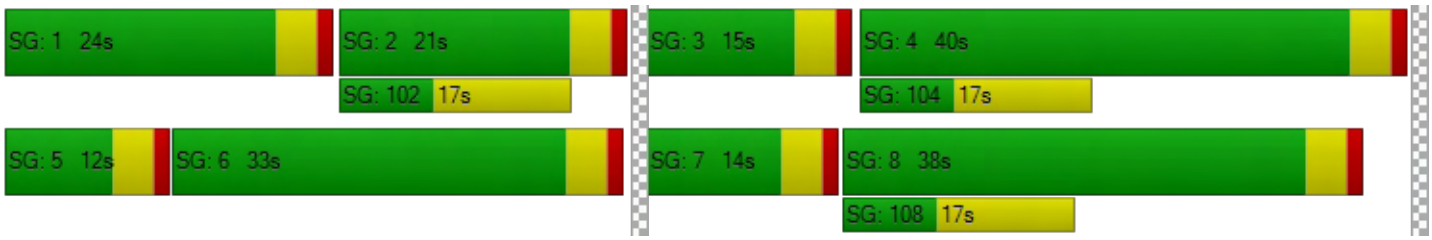
X, volume / capacity	0.55	0.55	0.33	0.79	0.40	0.41	0.69	0.68	0.68	0.63	0.69	0.51
d, Delay for Lane Group [s/veh]	29.80	27.97	16.55	29.30	22.54	22.75	31.35	18.59	19.25	26.53	17.18	16.08
Lane Group LOS	C	C	B	C	C	C	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.28	1.64	1.66	3.39	1.74	1.57	1.87	4.43	4.67	1.98	4.55	2.95
50th-Percentile Queue Length [ft/ln]	32.12	40.96	41.56	84.74	43.42	39.37	46.79	110.78	116.68	49.48	113.86	73.79
95th-Percentile Queue Length [veh/ln]	2.31	2.95	2.99	6.10	3.13	2.83	3.37	7.88	8.21	3.56	8.05	5.31
95th-Percentile Queue Length [ft/ln]	57.82	73.73	74.80	152.53	78.16	70.86	84.22	197.08	205.25	89.06	201.36	132.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.80	27.97	16.55	29.30	22.57	22.75	31.35	18.79	19.25	26.53	17.18	16.08
Movement LOS	C	C	B	C	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	23.30			25.73			19.99			18.49		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.32											
Intersection LOS	C											
Intersection V/C	0.723											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	15.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.607

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	124	68	87	175	67	61	180	48	64	268	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	124	68	87	175	67	61	180	48	64	268	133
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	33	18	23	46	18	16	48	13	17	71	35
Total Analysis Volume [veh/h]	23	131	72	92	185	71	65	190	51	68	284	141
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	33	0	16	38	0	13	38	0	13	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	39	39	39	39	39	39	39	39	39	39
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	6	4	9	9	4	8	4	8	8
g / C, Green / Cycle	0.04	0.16	0.11	0.24	0.24	0.09	0.22	0.10	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.01	0.12	0.05	0.10	0.04	0.04	0.13	0.04	0.15	0.09
s, saturation flow rate [veh/h]	1774	1753	1774	1863	1583	1774	1796	1774	1863	1583
c, Capacity [veh/h]	72	284	205	440	374	165	390	170	410	348
d1, Uniform Delay [s]	18.18	15.50	16.10	12.63	11.91	16.67	13.81	16.59	14.01	13.03
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.48	3.36	1.54	0.64	0.24	1.53	1.60	1.52	2.11	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

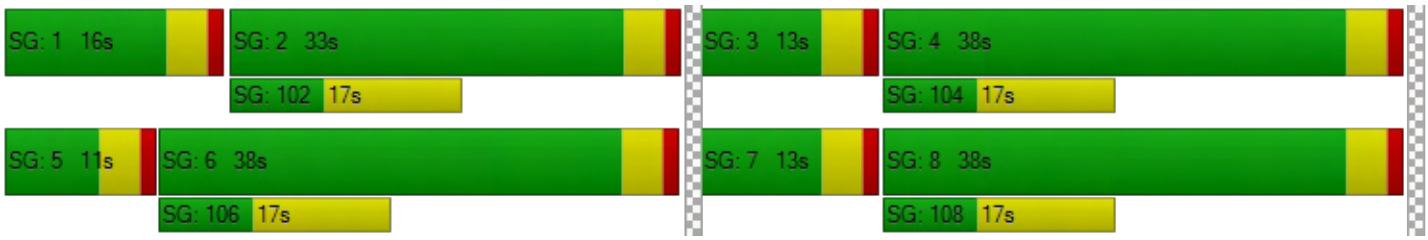
X, volume / capacity	0.32	0.72	0.45	0.42	0.19	0.39	0.62	0.40	0.69	0.40
d, Delay for Lane Group [s/veh]	20.66	18.86	17.64	13.27	12.15	18.20	15.41	18.12	16.12	13.79
Lane Group LOS	C	B	B	B	B	B	B	B	B	B
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.22	1.68	0.73	1.18	0.42	0.54	1.72	0.56	2.10	0.93
50th-Percentile Queue Length [ft/ln]	5.59	41.94	18.34	29.43	10.58	13.39	43.07	13.94	52.38	23.25
95th-Percentile Queue Length [veh/ln]	0.40	3.02	1.32	2.12	0.76	0.96	3.10	1.00	3.77	1.67
95th-Percentile Queue Length [ft/ln]	10.07	75.49	33.01	52.97	19.04	24.11	77.52	25.09	94.28	41.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.66	18.86	18.86	17.64	13.27	12.15	18.20	15.41	15.41	18.12	16.12	13.79
Movement LOS	C	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	19.04			14.20			16.01			15.73		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	15.95											
Intersection LOS	B											
Intersection V/C	0.607											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	8.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.214

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	39	55	2	3	80	98	115	1	48	0	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	55	2	3	80	98	115	1	48	0	1	4
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	14	1	1	21	25	30	0	12	0	0	1
Total Analysis Volume [veh/h]	40	57	2	3	82	101	119	1	49	0	1	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	760	711	829	790	834
Degree of Utilization, x	0.13	0.12	0.12	0.21	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.45	0.41	0.41	0.81	0.02
95th-Percentile Queue Length [ft]	11.17	10.14	10.37	20.20	0.45
Approach Delay [s/veh]	8.44	8.02		8.79	7.35
Approach LOS	A	A		A	A
Intersection Delay [s/veh]	8.39				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.146

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	2	87	2	0	0	2	0	0	2	96
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	2	87	2	0	0	2	0	0	2	96
Peak Hour Factor	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	1	29	1	0	0	1	0	0	1	32
Total Analysis Volume [veh/h]	0	4	3	115	3	0	0	3	0	0	3	127
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	879	814	807	745	872
Degree of Utilization, x	0.01	0.14	0.00	0.00	0.15

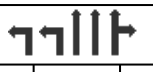
Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.02	0.51	0.01	0.01	0.51
95th-Percentile Queue Length [ft]	0.60	12.65	0.28	0.30	12.73
Approach Delay [s/veh]	7.13	8.17	7.48	7.53	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	7.81				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	32.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.879

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	344	91	813	337	126	109	132	1152	260	889	1249	218
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	344	91	813	337	126	109	132	1152	260	889	1249	218
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	88	23	208	86	32	28	34	295	67	227	320	56
Total Analysis Volume [veh/h]	352	93	832	345	129	112	135	1179	266	910	1278	223
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	22	22	22	21	0	40	45	0	51	56	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	114	114	114	114	114	114	114	114	114	114	114	114
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	55	14	14	14	7	33	33	37	63	63
g / C, Green / Cycle	0.13	0.12	0.48	0.12	0.12	0.12	0.06	0.29	0.29	0.32	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.10	0.05	0.30	0.10	0.07	0.07	0.04	0.23	0.17	0.26	0.28	0.29
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1584	3445	5074	1583	3445	3547	1727
c, Capacity [veh/h]	436	230	1355	428	226	192	209	1454	454	1119	1954	952
d1, Uniform Delay [s]	48.38	46.02	21.59	48.51	47.20	47.29	52.29	37.74	34.82	35.26	15.98	16.19
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.60	1.14	0.45	3.61	2.25	2.79	3.33	1.13	1.21	1.48	0.21	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.40	0.61	0.81	0.57	0.58	0.65	0.81	0.59	0.81	0.51	0.53
d, Delay for Lane Group [s/veh]	51.99	47.16	22.04	52.13	49.45	50.08	55.62	38.87	36.03	36.74	16.19	16.64
Lane Group LOS	D	D	C	D	D	D	E	D	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.06	2.50	8.03	4.97	3.58	3.15	1.98	10.22	6.44	11.64	7.92	8.12
50th-Percentile Queue Length [ft/ln]	126.57	62.52	200.78	124.14	89.58	78.80	49.47	255.38	160.91	290.91	198.01	203.12
95th-Percentile Queue Length [veh/ln]	8.75	4.50	12.68	8.62	6.45	5.67	3.56	15.46	10.60	17.23	12.54	12.80
95th-Percentile Queue Length [ft/ln]	218.83	112.54	316.97	215.51	161.25	141.83	89.05	386.42	264.92	430.77	313.40	319.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.99	47.16	22.04	52.13	49.45	50.08	55.62	38.87	36.03	36.74	16.29	16.64
Movement LOS	D	D	C	D	D	D	E	D	D	D	B	B
d_A, Approach Delay [s/veh]	32.12			51.15			39.82			24.04		
Approach LOS	C			D			D			C		
d_I, Intersection Delay [s/veh]	32.78											
Intersection LOS	C											
Intersection V/C	0.879											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	19.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.591

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	241	255	2	4	258	293	245	2	118	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	241	255	2	4	258	293	245	2	118	0	0	4
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	68	1	1	69	78	65	1	31	0	0	1
Total Analysis Volume [veh/h]	256	271	2	4	274	312	261	2	126	0	0	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	444	474	448	478	528	453	484	534	417
Degree of Utilization, x	0.58	0.58	0.01	0.57	0.59	0.58	0.00	0.24	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.55	3.56	0.03	3.54	3.81	3.56	0.01	0.91	0.03
95th-Percentile Queue Length [ft]	88.66	89.05	0.68	88.55	95.14	88.91	0.31	22.78	0.73
Approach Delay [s/veh]	20.65		19.32			17.82			11.71
Approach LOS	C		C			C			B
Intersection Delay [s/veh]	19.38								
Intersection LOS	C								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	27.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	82	472	0	0	349	13	7	0	82	4	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	472	0	0	349	13	7	0	82	4	0	0
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	121	0	0	90	3	2	0	21	1	0	0
Total Analysis Volume [veh/h]	84	485	0	0	358	13	7	0	84	4	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.12	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	8.26	0.00	0.00	8.34	0.00	0.00	23.06	21.91	10.98	26.98	21.99	11.71
Movement LOS	A	A	A	A	A	A	C	C	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.23	0.00	0.00	0.00	0.00	0.00	0.10	0.42	0.42	0.07	0.07	0.07
95th-Percentile Queue Length [ft/ln]	5.70	0.00	0.00	0.00	0.00	0.00	2.62	10.40	10.40	1.83	1.83	1.83
d_A, Approach Delay [s/veh]	1.22			0.00			11.91			26.98		
Approach LOS	A			A			B			D		
d_I, Intersection Delay [s/veh]	1.82											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	18.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.667

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	51	32	319	19	43	39	435	20	55	441	467
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	51	32	319	19	43	39	435	20	55	441	467
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	13	8	82	5	11	10	112	5	14	113	120
Total Analysis Volume [veh/h]	34	52	33	327	19	44	40	446	21	56	452	479
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	47	0	11	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	53	53	53	53	53	53	53	53	53	53
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	8	8	3	18	4	19	19
g / C, Green / Cycle	0.11	0.11	0.11	0.16	0.16	0.06	0.35	0.07	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.02	0.11	0.11	0.02	0.25	0.03	0.24	0.30
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1735	1774	1848	1774	1863	1583
c, Capacity [veh/h]	195	205	174	286	280	106	648	133	682	580
d1, Uniform Delay [s]	21.34	21.54	21.38	20.91	20.91	23.91	14.90	23.35	14.01	15.22
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	0.64	0.52	2.93	3.01	2.23	1.53	2.11	1.11	3.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

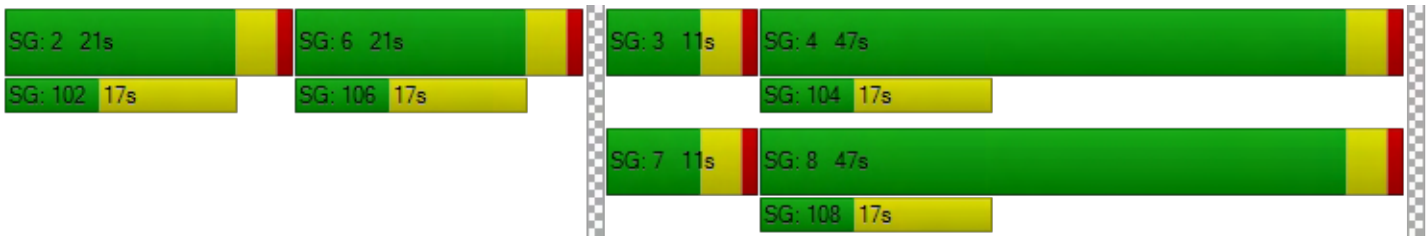
X, volume / capacity	0.17	0.25	0.19	0.69	0.69	0.38	0.72	0.42	0.66	0.83
d, Delay for Lane Group [s/veh]	21.76	22.18	21.90	23.84	23.91	26.14	16.43	25.45	15.12	18.28
Lane Group LOS	C	C	C	C	C	C	B	C	B	B
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.37	0.58	0.37	2.32	2.27	0.51	4.42	0.69	4.03	4.89
50th-Percentile Queue Length [ft/ln]	9.36	14.48	9.17	57.91	56.81	12.77	110.38	17.35	100.73	122.19
95th-Percentile Queue Length [veh/ln]	0.67	1.04	0.66	4.17	4.09	0.92	7.86	1.25	7.25	8.51
95th-Percentile Queue Length [ft/ln]	16.84	26.06	16.51	104.23	102.25	22.98	196.53	31.23	181.32	212.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.76	22.18	21.90	23.87	23.91	23.91	26.14	16.43	16.43	25.45	15.12	18.28
Movement LOS	C	C	C	C	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	21.98			23.88			17.20			17.24		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.80											
Intersection LOS	B											
Intersection V/C	0.667											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	12.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.649

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	419	0	582	0	1721	464	0	1844	466
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	419	0	582	0	1721	464	0	1844	466
Peak Hour Factor	1.0000	1.0000	1.0000	0.9870	1.0000	0.9870	1.0000	0.9870	0.9870	1.0000	0.9870	0.9870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	106	0	147	0	436	0	0	467	0
Total Analysis Volume [veh/h]	0	0	0	425	0	590	0	1744	0	0	1868	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	84	0	0	0	56	0	0	56	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		78	78	78	78	78	78	78
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		20	20	20	49	49	49	49
g / C, Green / Cycle		0.26	0.26	0.26	0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate		0.19	0.21	0.21	0.26	0.00	0.37	0.00
s, saturation flow rate [veh/h]		1774	1628	1583	6765	1583	5074	1583
c, Capacity [veh/h]		469	431	419	4279	1001	3209	1001
d1, Uniform Delay [s]		25.95	26.51	26.71	7.07	0.00	8.30	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.11	3.20	3.74	0.06	0.00	0.17	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

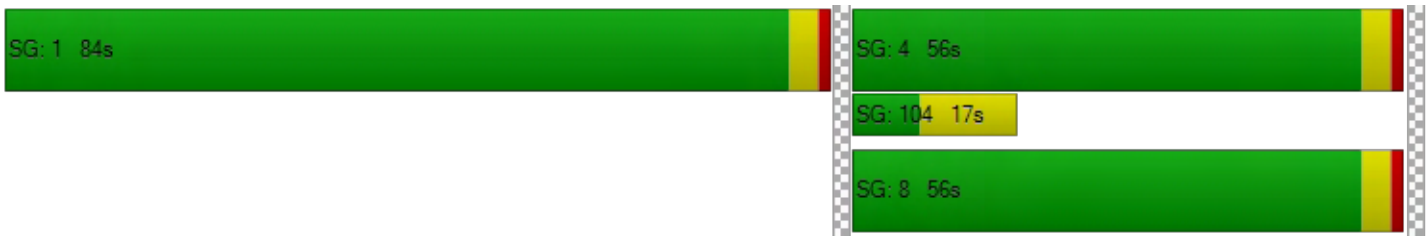
X, volume / capacity		0.72	0.79	0.81	0.41	0.00	0.58	0.00
d, Delay for Lane Group [s/veh]		28.05	29.71	30.45	7.13	0.00	8.47	0.00
Lane Group LOS		C	C	C	A	A	A	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		5.69	5.92	6.01	2.97	0.00	5.01	0.00
50th-Percentile Queue Length [ft/ln]		142.29	147.92	150.26	74.32	0.00	125.14	0.00
95th-Percentile Queue Length [veh/ln]		9.60	9.91	10.03	5.35	0.00	8.68	0.00
95th-Percentile Queue Length [ft/ln]		240.10	247.65	250.78	133.77	0.00	216.88	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	28.39	0.00	30.13	0.00	7.13	0.00	0.00	8.47	0.00
Movement LOS				C		C		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			29.40			7.13			8.47		
Approach LOS	A			C			A			A		
d_I, Intersection Delay [s/veh]	12.56											
Intersection LOS	B											
Intersection V/C	0.649											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.888

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	392	0	155	0	497	238	413	680	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	392	0	155	0	497	238	413	680	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9470	1.0000	0.9470	1.0000	0.9470	0.9470	0.9470	0.9470	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	103	0	41	0	131	63	109	180	0
Total Analysis Volume [veh/h]	0	0	0	414	0	164	0	525	251	436	718	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	120	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	31	0	0	0	36	0	33	69	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		84	84	84	84	84	84
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		22	22	27	27	23	54
g / C, Green / Cycle		0.27	0.27	0.32	0.32	0.27	0.64
(v / s)_i Volume / Saturation Flow Rate		0.23	0.10	0.28	0.16	0.25	0.39
s, saturation flow rate [veh/h]		1774	1583	1863	1583	1774	1863
c, Capacity [veh/h]		472	421	591	502	487	1190
d1, Uniform Delay [s]		29.59	25.31	27.34	23.34	29.40	8.93
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		5.36	0.59	4.80	0.77	6.08	0.50
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

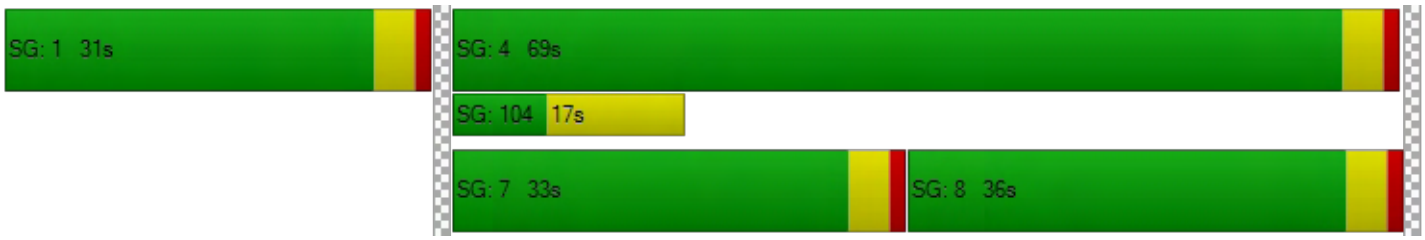
X, volume / capacity		0.88	0.39	0.89	0.50	0.90	0.60
d, Delay for Lane Group [s/veh]		34.96	25.90	32.14	24.11	35.49	9.43
Lane Group LOS		C	C	C	C	D	A
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		8.41	2.68	10.34	4.01	8.96	6.65
50th-Percentile Queue Length [ft/ln]		210.15	66.96	258.55	100.16	223.90	166.25
95th-Percentile Queue Length [veh/ln]		13.16	4.82	15.62	7.21	13.86	10.88
95th-Percentile Queue Length [ft/ln]		329.02	120.52	390.40	180.28	346.59	271.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	34.96	0.00	25.90	0.00	32.14	24.11	35.49	9.43	0.00
Movement LOS				C		C		C	C	D	A	
d_A, Approach Delay [s/veh]	0.00			32.39			29.54			19.27		
Approach LOS	A			C			C			B		
d_I, Intersection Delay [s/veh]	25.47											
Intersection LOS	C											
Intersection V/C	0.888											

Sequence

Ring 1	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	18.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.703

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	517	0	746	0	0	0	0	1885	382	0	1690	480
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	517	0	746	0	0	0	0	1885	382	0	1690	480
Peak Hour Factor	0.9810	1.0000	0.9810	1.0000	1.0000	1.0000	1.0000	0.9810	0.9810	1.0000	0.9810	0.9810
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	132	0	190	0	0	0	0	480	0	0	431	0
Total Analysis Volume [veh/h]	527	0	760	0	0	0	0	1922	0	0	1723	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	83	0	0	0	0	0	0	57	0	0	57	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	106	106	106		106	106	106	106
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	33		65	65	65	65
g / C, Green / Cycle	0.31	0.31	0.31		0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.24	0.26	0.27		0.38	0.00	0.25	0.00
s, saturation flow rate [veh/h]	1774	1623	1583		5074	1583	6765	1583
c, Capacity [veh/h]	555	508	496		3104	969	4139	969
d1, Uniform Delay [s]	33.10	34.11	34.42		12.90	0.00	10.75	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.33	3.93	4.69		0.20	0.00	0.07	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.84	0.87		0.62	0.00	0.42	0.00
d, Delay for Lane Group [s/veh]	35.42	38.04	39.11		13.10	0.00	10.82	0.00
Lane Group LOS	D	D	D		B	A	B	A
Critical Lane Group	No	No	Yes		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	10.19	10.69	10.87		8.89	0.00	4.97	0.00
50th-Percentile Queue Length [ft/ln]	254.85	267.26	271.85		222.22	0.00	124.19	0.00
95th-Percentile Queue Length [veh/ln]	15.43	16.05	16.28		13.78	0.00	8.62	0.00
95th-Percentile Queue Length [ft/ln]	385.75	401.32	407.05		344.46	0.00	215.57	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.91	0.00	38.64	0.00	0.00	0.00	0.00	13.10	0.00	0.00	10.82	0.00
Movement LOS	D		D					B	A		B	A
d_A, Approach Delay [s/veh]	37.52			0.00			13.10			10.82		
Approach LOS	D			A			B			B		
d_I, Intersection Delay [s/veh]	18.68											
Intersection LOS	B											
Intersection V/C	0.703											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.897

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	345	0	490	0	0	0	70	831	0	0	759	395
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	345	0	490	0	0	0	70	831	0	0	759	395
Peak Hour Factor	0.9650	1.0000	0.9650	1.0000	1.0000	1.0000	0.9650	0.9650	1.0000	1.0000	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	0	127	0	0	0	18	215	0	0	197	102
Total Analysis Volume [veh/h]	358	0	508	0	0	0	73	861	0	0	787	409
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	39	0	0	0	0	0	11	61	0	0	47	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	R
C, Cycle Length [s]	96	96		96	96	96	96
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34		6	54	44	44
g / C, Green / Cycle	0.35	0.35		0.06	0.56	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.20	0.32		0.04	0.46	0.42	0.26
s, saturation flow rate [veh/h]	1774	1583		1774	1863	1863	1583
c, Capacity [veh/h]	628	561		111	1047	853	725
d1, Uniform Delay [s]	25.03	29.41		43.88	17.06	24.37	18.98
k, delay calibration	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.82	5.87		6.40	1.68	4.79	0.69
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.91		0.66	0.82	0.92	0.56
d, Delay for Lane Group [s/veh]	25.84	35.28		50.28	18.74	29.16	19.67
Lane Group LOS	C	D		D	B	C	B
Critical Lane Group	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.54	11.59		1.87	14.48	16.83	6.49
50th-Percentile Queue Length [ft/ln]	163.60	289.75		46.84	362.03	420.77	162.27
95th-Percentile Queue Length [veh/ln]	10.74	17.17		3.37	20.72	23.56	10.67
95th-Percentile Queue Length [ft/ln]	268.48	429.33		84.30	518.06	588.97	266.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.84	0.00	35.28	0.00	0.00	0.00	50.28	18.74	0.00	0.00	29.16	19.67
Movement LOS	C		D				D	B			C	B
d_A, Approach Delay [s/veh]	31.38			0.00			21.20			25.91		
Approach LOS	C			A			C			C		
d_I, Intersection Delay [s/veh]	26.03											
Intersection LOS	C											
Intersection V/C	0.897											

Sequence

Ring 1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	41.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.823

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	693	108	189	28	78	147	145	1761	633	174	1352	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	693	108	189	28	78	147	145	1761	633	174	1352	27
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	179	28	49	7	20	38	38	456	164	45	350	7
Total Analysis Volume [veh/h]	717	112	196	29	81	152	150	1823	655	180	1400	28
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	38	24	0	35	21	0	35	68	0	13	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	168	168	168	168	168	168	168	168	168	168	168	168
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	48	48	5	14	14	10	88	88	11	90	90
g / C, Green / Cycle	0.23	0.28	0.28	0.03	0.08	0.08	0.06	0.52	0.52	0.07	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.21	0.06	0.12	0.01	0.07	0.07	0.04	0.36	0.41	0.05	0.26	0.26
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1759	1583	3445	5074	1583	3445	3547	1844
c, Capacity [veh/h]	789	527	448	106	149	134	198	2662	831	229	1893	984
d1, Uniform Delay [s]	63.28	46.11	49.46	79.82	75.80	75.91	78.28	29.71	32.47	77.47	24.91	24.91
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.16	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.46	0.20	0.67	1.36	10.09	12.15	5.85	0.32	2.58	5.84	0.20	0.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

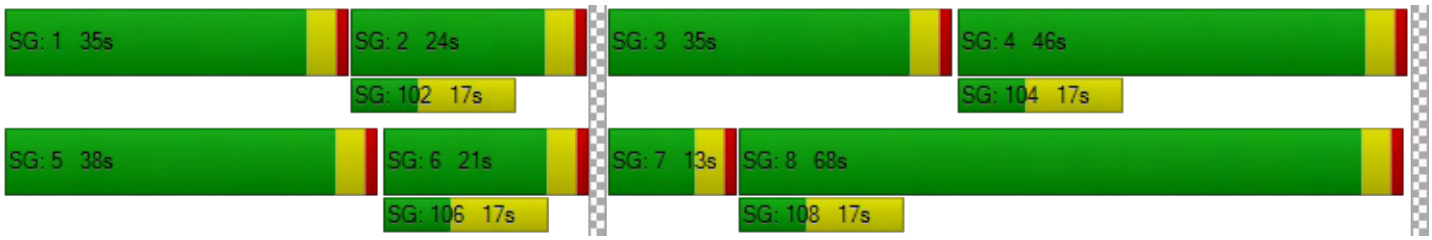
X, volume / capacity	0.91	0.21	0.44	0.27	0.81	0.83	0.76	0.68	0.79	0.78	0.50	0.50
d, Delay for Lane Group [s/veh]	67.74	46.30	50.13	81.18	85.88	88.07	84.13	30.03	35.05	83.31	25.11	25.30
Lane Group LOS	E	D	D	F	F	F	F	C	D	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	15.51	3.68	6.94	0.64	5.62	5.24	3.39	18.42	22.20	4.06	12.14	12.68
50th-Percentile Queue Length [ft/ln]	387.77	92.06	173.54	16.02	140.62	131.10	84.78	460.57	555.10	101.44	303.50	316.93
95th-Percentile Queue Length [veh/ln]	21.97	6.63	11.26	1.15	9.51	9.00	6.10	25.46	29.93	7.30	17.85	18.52
95th-Percentile Queue Length [ft/ln]	549.24	165.71	281.57	28.83	237.86	225.00	152.61	636.55	748.30	182.59	446.36	462.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.74	46.30	50.13	81.18	85.88	87.52	84.13	30.03	35.05	83.31	25.18	25.30
Movement LOS	E	D	D	F	F	F	F	C	D	F	C	C
d_A, Approach Delay [s/veh]	62.03			86.29			34.37			31.69		
Approach LOS	E			F			C			C		
d_I, Intersection Delay [s/veh]	41.18											
Intersection LOS	D											
Intersection V/C	0.823											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.466

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			Yes			Yes	

Volumes

Name												
Base Volume Input [veh/h]	0	410	88	191	431	0	0	0	0	71	0	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	410	88	191	431	0	0	0	0	71	0	125
Peak Hour Factor	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	111	24	52	116	0	0	0	0	19	0	34
Total Analysis Volume [veh/h]	0	442	95	206	465	0	0	0	0	77	0	135
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	41	0	38	79	0	0	0	0	21	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	31	31	31	31		31	31	31
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	6	17		6	6	6
g / C, Green / Cycle	0.23	0.23	0.19	0.55		0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.12	0.06	0.12	0.13		0.04	0.04	0.04
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1590	1583
c, Capacity [veh/h]	804	359	339	1943		342	306	305
d1, Uniform Delay [s]	10.52	9.80	11.40	3.63		10.48	10.50	10.50
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.59	0.39	1.76	0.06		0.32	0.37	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

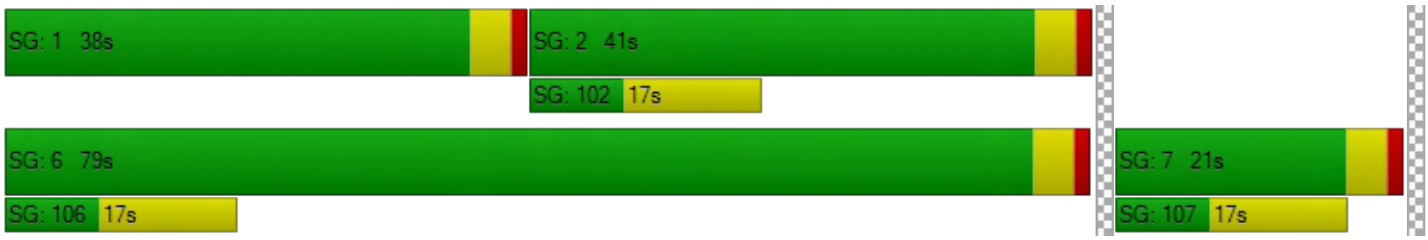
X, volume / capacity	0.55	0.26	0.61	0.24		0.22	0.23	0.23
d, Delay for Lane Group [s/veh]	11.11	10.19	13.16	3.69		10.80	10.87	10.87
Lane Group LOS	B	B	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.00	0.41	1.10	0.28		0.34	0.32	0.32
50th-Percentile Queue Length [ft/ln]	25.06	10.34	27.56	6.95		8.53	7.99	7.97
95th-Percentile Queue Length [veh/ln]	1.80	0.74	1.98	0.50		0.61	0.58	0.57
95th-Percentile Queue Length [ft/ln]	45.11	18.62	49.60	12.51		15.35	14.39	14.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	11.11	10.19	13.16	3.69	0.00	0.00	0.00	0.00	10.80	0.00	10.87
Movement LOS		B	B	B	A					B		B
d_A, Approach Delay [s/veh]	10.95			6.60			0.00			10.84		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	8.87											
Intersection LOS	A											
Intersection V/C	0.466											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.808

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	392	287	189	59	167	279	271	777	283	60	508	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	392	287	189	59	167	279	271	777	283	60	508	54
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	100	74	48	15	43	71	69	199	72	15	130	14
Total Analysis Volume [veh/h]	402	294	194	60	171	286	278	796	290	61	520	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	24	0	22	27	0	23	43	0	11	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	77	77	77	77	77	77	77	77	77	77	77	77
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	23	23	5	17	17	14	27	27	5	18	18
g / C, Green / Cycle	0.15	0.30	0.30	0.07	0.22	0.22	0.19	0.35	0.35	0.07	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.12	0.16	0.12	0.03	0.09	0.18	0.16	0.30	0.31	0.03	0.16	0.16
s, saturation flow rate [veh/h]	3445	1863	1583	1774	1863	1583	1774	1863	1696	1774	1863	1801
c, Capacity [veh/h]	532	567	482	117	402	342	331	661	602	118	437	422
d1, Uniform Delay [s]	31.08	22.07	21.18	34.66	25.99	28.81	30.12	22.94	23.09	34.64	26.67	26.69
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.22	0.74	0.54	3.42	0.71	5.42	5.68	3.29	3.95	3.45	1.77	1.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

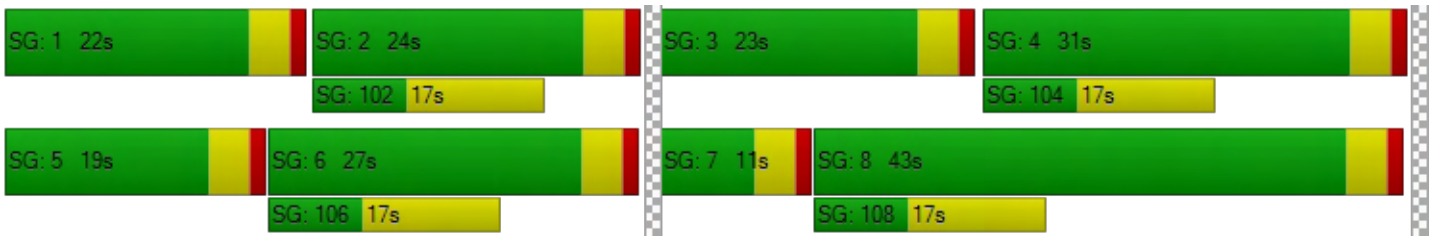
X, volume / capacity	0.76	0.52	0.40	0.51	0.43	0.84	0.84	0.85	0.87	0.52	0.67	0.67
d, Delay for Lane Group [s/veh]	33.30	22.81	21.73	38.08	26.71	34.23	35.80	26.23	27.04	38.09	28.44	28.54
Lane Group LOS	C	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.60	4.28	2.71	1.17	2.68	5.33	5.28	9.39	8.83	1.19	4.85	4.72
50th-Percentile Queue Length [ft/ln]	90.05	106.99	67.74	29.15	66.96	133.31	131.94	234.80	220.81	29.64	121.28	118.03
95th-Percentile Queue Length [veh/ln]	6.48	7.67	4.88	2.10	4.82	9.12	9.05	14.42	13.71	2.13	8.46	8.28
95th-Percentile Queue Length [ft/ln]	162.08	191.80	121.93	52.48	120.53	227.99	226.13	360.45	342.66	53.35	211.58	207.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.30	22.81	21.73	38.08	26.71	34.23	35.80	26.47	27.04	38.09	28.49	28.54
Movement LOS	C	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	27.31			32.19			28.49			29.41		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.92											
Intersection LOS	C											
Intersection V/C	0.808											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.811

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	105	177	226	200	219	114	121	958	60	312	1197	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	177	226	200	219	114	121	958	60	312	1197	165
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	46	59	52	57	30	31	249	16	81	311	43
Total Analysis Volume [veh/h]	109	184	235	208	228	119	126	997	62	325	1246	172
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	21	20	30	30	21	42	0	16	38	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	67	67	67	67	67	67	67	67	67	67	67	67
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	7	22	10	11	21	6	23	23	11	28	28
g / C, Green / Cycle	0.09	0.10	0.33	0.15	0.16	0.32	0.09	0.34	0.34	0.17	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.03	0.05	0.15	0.12	0.06	0.08	0.04	0.29	0.29	0.09	0.25	0.11
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1825	3445	5074	1583
c, Capacity [veh/h]	313	369	529	262	572	499	325	632	619	588	2109	658
d1, Uniform Delay [s]	28.71	28.47	17.50	27.65	25.28	17.05	28.62	20.59	20.60	25.53	15.22	12.88
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.66	1.04	0.59	5.35	0.45	0.24	0.75	3.23	3.32	0.81	0.27	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

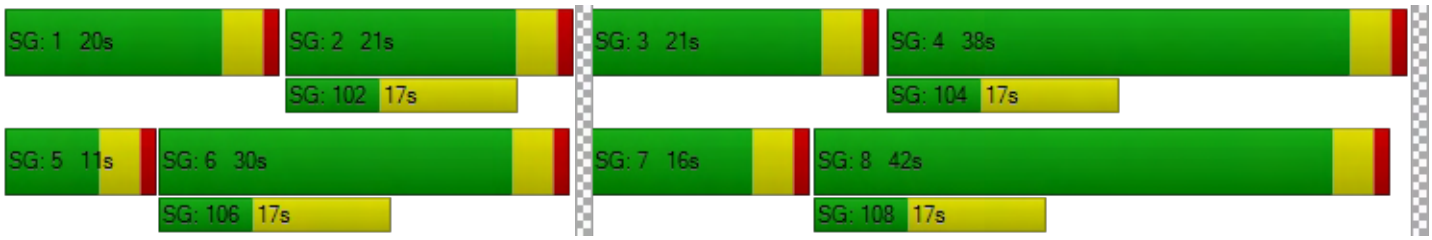
X, volume / capacity	0.35	0.50	0.44	0.79	0.40	0.24	0.39	0.85	0.85	0.55	0.59	0.26
d, Delay for Lane Group [s/veh]	29.37	29.51	18.08	33.00	25.73	17.30	29.38	23.82	23.91	26.34	15.48	13.09
Lane Group LOS	C	C	B	C	C	B	C	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.82	1.39	2.72	3.45	1.59	1.31	0.95	7.65	7.52	2.32	4.47	1.59
50th-Percentile Queue Length [ft/ln]	20.52	34.86	67.88	86.37	39.75	32.64	23.74	191.20	187.89	58.10	111.69	39.65
95th-Percentile Queue Length [veh/ln]	1.48	2.51	4.89	6.22	2.86	2.35	1.71	12.18	12.01	4.18	7.93	2.85
95th-Percentile Queue Length [ft/ln]	36.93	62.75	122.18	155.46	71.54	58.75	42.73	304.59	300.29	104.57	198.36	71.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.37	29.51	18.08	33.00	25.73	17.30	29.38	23.86	23.91	26.34	15.48	13.09
Movement LOS	C	C	B	C	C	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	24.40			26.65			24.45			17.27		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	21.63											
Intersection LOS	C											
Intersection V/C	0.811											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



EXISTING PLUS PROJECT

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME.vistro
Report File: C:\...\AMEP.pdf

Scenario 2 Existing Plus Project Morning Peak Hour
1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.819	31.2	C
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.912	41.6	D
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	NB Thru	1.036	39.4	E
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	WB Right	0.825	25.5	D
5	Sherman Rd (NS) at MFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	8.9	A
6	Sherman Rd (NS) at SFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	8.9	A
7	MFR Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Left	0.018	16.4	C
8	Commercial Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Right	0.011	10.7	B
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Left	0.839	25.9	C
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	SB Right	0.858	33.7	D
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	EB Left	3.169	1,289.7	F
12	Haun Rd (NS) at North Project Access (EW)	Signalized	HCM 2010	EB Left	0.473	3.0	A
13	Haun Rd (NS) at Central Project Access (EW)	Signalized	HCM 2010	EB Left	0.463	6.9	A
14	Haun Rd (NS) at South Project Access (EW)	Two-way stop	HCM 2010	EB Right	0.028	13.7	B
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.912	45.2	D
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.615	9.7	A
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.868	23.6	C
	I-215 Fwy NB Ramps (NS) at						

18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.708	9.6	A
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.889	22.1	C
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.849	30.9	C
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.462	9.1	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.860	34.4	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.802	26.4	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	31.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.819

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	109	200	378	166	239	58	73	1097	67	337	764	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	19	13	0	9	11	0	0	7	14	0	4	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	213	378	175	250	58	73	1104	81	337	768	115
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	61	109	50	72	17	21	318	23	97	221	33
Total Analysis Volume [veh/h]	147	245	435	201	288	67	84	1270	93	388	884	132
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	23	23	19	29	0	35	39	0	19	23	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	98	98	98	98	98	98	98	98	98	98	98	98
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	16	43	13	20	20	6	30	30	23	46	46
g / C, Green / Cycle	0.10	0.17	0.44	0.14	0.20	0.20	0.06	0.30	0.30	0.23	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.08	0.13	0.27	0.11	0.10	0.10	0.05	0.26	0.26	0.11	0.17	0.08
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1743	1774	3547	1798	3445	5074	1583
c, Capacity [veh/h]	183	310	698	240	370	346	113	1072	543	805	2395	747
d1, Uniform Delay [s]	43.23	39.46	21.27	41.55	35.11	35.15	45.34	32.22	32.22	32.62	16.64	15.00
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.91	4.53	0.92	7.49	1.02	1.11	9.07	1.91	3.67	0.45	0.09	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

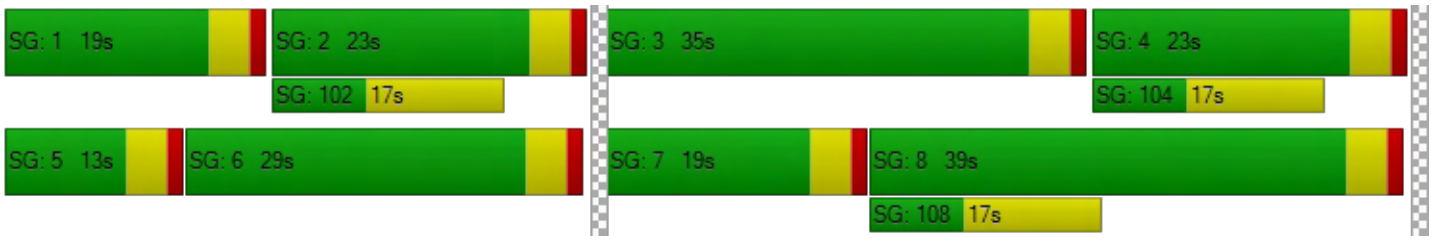
X, volume / capacity	0.80	0.79	0.62	0.84	0.49	0.50	0.74	0.84	0.84	0.48	0.37	0.18
d, Delay for Lane Group [s/veh]	51.13	43.99	22.19	49.05	36.13	36.27	54.41	34.13	35.90	33.07	16.74	15.11
Lane Group LOS	D	D	C	D	D	D	D	C	D	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.87	6.01	7.62	5.21	3.95	3.76	2.29	10.12	10.53	4.00	4.15	1.69
50th-Percentile Queue Length [ft/ln]	96.77	150.21	190.61	130.14	98.79	93.88	57.21	252.93	263.17	100.03	103.66	42.20
95th-Percentile Queue Length [veh/ln]	6.97	10.03	12.15	8.95	7.11	6.76	4.12	15.33	15.85	7.20	7.46	3.04
95th-Percentile Queue Length [ft/ln]	174.18	250.71	303.82	223.69	177.83	168.99	102.97	383.35	396.20	180.05	186.59	75.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.13	43.99	22.19	49.05	36.18	36.27	54.41	34.64	35.90	33.07	16.74	15.11
Movement LOS	D	D	C	D	D	D	D	C	D	C	B	B
d_A, Approach Delay [s/veh]	33.79			40.84			35.87			21.10		
Approach LOS	C			D			D			C		
d_I, Intersection Delay [s/veh]	31.22											
Intersection LOS	C											
Intersection V/C	0.819											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	41.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.912

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	48	318	164	66	426	204	106	228	182	174	174	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	42	3	0	40	0	0	0	7	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	360	167	66	466	204	106	228	189	178	174	110
Peak Hour Factor	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	104	48	19	135	59	31	66	55	52	50	32
Total Analysis Volume [veh/h]	68	417	194	76	540	236	123	264	219	206	202	127
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	40	0	11	39	0	12	33	0	16	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	42	6	43	43	10	35	16	40	40
g / C, Green / Cycle	0.05	0.37	0.06	0.37	0.37	0.09	0.30	0.14	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.04	0.35	0.04	0.29	0.15	0.07	0.28	0.12	0.11	0.08
s, saturation flow rate [veh/h]	1774	1764	1774	1863	1583	1774	1725	1774	1863	1583
c, Capacity [veh/h]	96	650	99	690	586	153	520	240	653	555
d1, Uniform Delay [s]	53.69	35.21	53.71	32.20	26.87	51.72	39.08	48.78	27.29	26.45
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.35	7.41	11.52	1.99	0.45	9.29	7.82	8.58	0.27	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

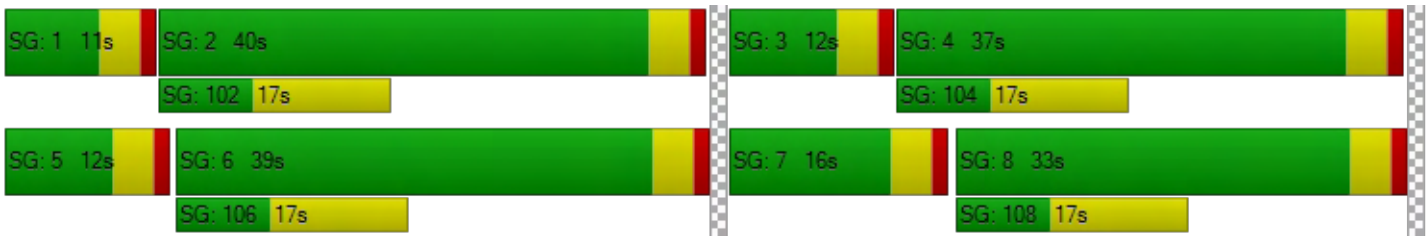
X, volume / capacity	0.71	0.94	0.77	0.78	0.40	0.80	0.93	0.86	0.31	0.23
d, Delay for Lane Group [s/veh]	63.05	42.62	65.23	34.19	27.31	61.01	46.91	57.36	27.56	26.66
Lane Group LOS	E	D	E	C	C	E	D	E	C	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.18	17.53	2.49	13.51	4.86	3.88	14.19	6.35	4.10	2.50
50th-Percentile Queue Length [ft/ln]	54.61	438.33	62.17	337.71	121.50	96.93	354.67	158.67	102.57	62.57
95th-Percentile Queue Length [veh/ln]	3.93	24.40	4.48	19.54	8.48	6.98	20.36	10.48	7.39	4.51
95th-Percentile Queue Length [ft/ln]	98.30	610.01	111.91	488.40	211.89	174.48	509.10	261.96	184.63	112.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.05	42.62	42.62	65.23	34.19	27.31	61.01	46.91	46.91	57.36	27.56	26.66
Movement LOS	E	D	D	E	C	C	E	D	D	E	C	C
d_A, Approach Delay [s/veh]	44.66			35.05			49.77			38.82		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	41.59											
Intersection LOS	D											
Intersection V/C	0.912											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	39.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.036

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	105	296	0	2	252	175	103	2	51	1	6	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	64	0	0	54	0	0	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	360	0	2	306	175	103	2	56	1	6	23
Peak Hour Factor	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	120	0	1	102	59	34	1	19	0	2	8
Total Analysis Volume [veh/h]	149	482	0	3	410	234	138	3	75	1	8	31
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	631	571	642	523	494
Degree of Utilization, x	1.04	0.72	0.36	0.41	0.08

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	16.83	6.02	1.67	2.01	0.26
95th-Percentile Queue Length [ft]	420.79	150.49	41.63	50.17	6.58
Approach Delay [s/veh]	70.26	19.33		14.65	10.93
Approach LOS	F	C		B	B
Intersection Delay [s/veh]	39.40				
Intersection LOS	E				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.825

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	0	278	1	1	2	2	0	0	6	364
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	35	15	53	13	0	0	0	0	5	0	37
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	38	15	331	14	1	2	2	0	5	6	401
Peak Hour Factor	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	5	112	5	0	1	1	0	2	2	135
Total Analysis Volume [veh/h]	0	51	20	447	19	1	3	3	0	7	8	542
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	575	616	524	561	657
Degree of Utilization, x	0.12	0.76	0.01	0.03	0.82

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.42	6.87	0.03	0.08	8.77
95th-Percentile Queue Length [ft]	10.50	171.85	0.87	2.06	219.28
Approach Delay [s/veh]	10.15	24.84	9.95	28.12	
Approach LOS	B	C	A	D	
Intersection Delay [s/veh]	25.47				
Intersection LOS	D				

Intersection Level Of Service Report
Intersection 5: Sherman Rd (NS) at MFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	3	0	0	1	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	40	0	4	14	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	4	15	0	10
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	1	4	0	3
Total Analysis Volume [veh/h]	45	0	4	16	0	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.31	0.00	8.90	8.55
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.19	0.19	0.81	0.81
d_A, Approach Delay [s/veh]	0.00		1.46		8.55	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.62					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Sherman Rd (NS) at SFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	3	0	0	1	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	40	0	9	5	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	9	6	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	2	2	0	0
Total Analysis Volume [veh/h]	45	0	9	6	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.32	0.00	8.87	8.51
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.43	0.43	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		4.39		8.69	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.10					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: MFR Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	16.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	280	0	0	373
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	51	66	2	15	36
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	51	346	2	15	409
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	13	91	1	4	108
Total Analysis Volume [veh/h]	6	54	364	2	16	431
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.08	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	16.35	10.92	0.00	0.00	8.06	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.32	0.32	0.00	0.00	0.04	0.02
95th-Percentile Queue Length [ft/ln]	8.04	8.04	0.00	0.00	0.96	0.48
d_A, Approach Delay [s/veh]	11.46		0.00		0.29	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.94					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Commercial Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	280	0	0	373
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	109	8	0	51
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	7	389	8	0	424
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	102	2	0	112
Total Analysis Volume [veh/h]	0	7	409	8	0	446
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	10.70	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.83	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.70		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.09					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	77	569	110	38	30	121	1432	206	709	1057	322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	0	86	0	0	0	0	0	16	59	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	145	77	655	110	38	30	121	1432	222	768	1057	322
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	20	173	29	10	8	32	378	59	203	279	85
Total Analysis Volume [veh/h]	153	81	691	116	40	32	128	1511	234	810	1115	340
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	22	22	11	21	0	53	62	0	45	54	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	104	104	104	104	104	104	104	104	104	104	104	104
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	11	45	7	11	11	7	40	40	30	64	64
g / C, Green / Cycle	0.07	0.10	0.43	0.07	0.10	0.10	0.07	0.39	0.39	0.29	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.04	0.04	0.25	0.03	0.02	0.02	0.04	0.30	0.15	0.24	0.28	0.29
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1604	3445	5074	1583	3445	3547	1653
c, Capacity [veh/h]	229	195	1218	224	192	165	226	1954	610	1005	2167	1010
d1, Uniform Delay [s]	47.45	43.62	22.08	47.08	42.72	42.80	47.18	28.01	23.08	34.14	10.88	11.03
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.34	1.42	0.42	1.85	0.48	0.63	2.22	0.67	0.40	1.58	0.15	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

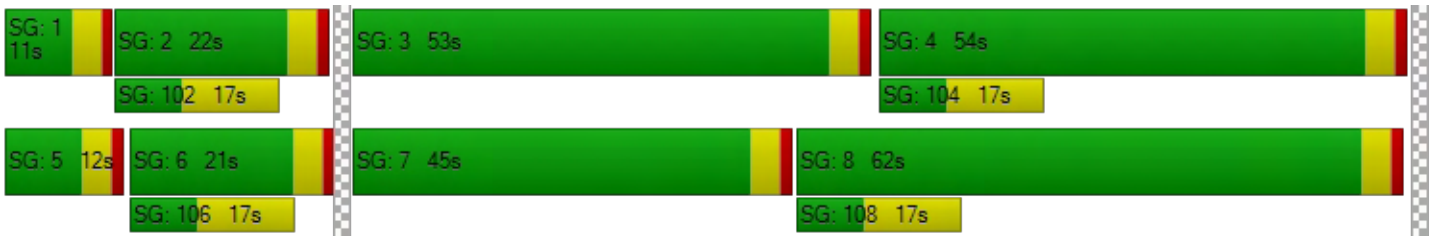
X, volume / capacity	0.67	0.42	0.57	0.52	0.19	0.21	0.57	0.77	0.38	0.81	0.45	0.47
d, Delay for Lane Group [s/veh]	50.78	45.03	22.50	48.93	43.20	43.43	49.39	28.68	23.47	35.72	11.03	11.37
Lane Group LOS	D	D	C	D	D	D	D	C	C	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.03	2.02	6.24	1.51	0.89	0.85	1.67	10.79	4.15	9.53	5.71	5.64
50th-Percentile Queue Length [ft/ln]	50.83	50.55	155.91	37.63	22.36	21.32	41.78	269.72	103.77	238.16	142.75	141.00
95th-Percentile Queue Length [veh/ln]	3.66	3.64	10.33	2.71	1.61	1.54	3.01	16.18	7.47	14.59	9.63	9.53
95th-Percentile Queue Length [ft/ln]	91.49	90.99	258.30	67.73	40.25	38.38	75.21	404.39	186.78	364.71	240.73	238.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.78	45.03	22.50	48.93	43.22	43.43	49.39	28.68	23.47	35.72	11.07	11.37
Movement LOS	D	D	C	D	D	D	D	C	C	D	B	B
d_A, Approach Delay [s/veh]	29.15			46.78			29.45			19.93		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	25.91											
Intersection LOS	C											
Intersection V/C	0.839											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	33.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.858

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	249	182	0	4	167	324	238	4	192	3	5	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	104	0	0	78	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	249	286	0	4	245	324	238	4	192	3	5	3
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	87	0	1	75	99	73	1	59	1	2	1
Total Analysis Volume [veh/h]	304	349	0	5	299	395	290	5	234	4	6	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	397	420	398	422	460	411	436	478	343
Degree of Utilization, x	0.77	0.83	0.01	0.71	0.86	0.71	0.01	0.49	0.04

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	6.37	7.84	0.04	5.40	8.75	5.32	0.03	2.65	0.13
95th-Percentile Queue Length [ft]	159.36	195.89	0.95	135.08	218.84	133.04	0.87	66.32	3.18
Approach Delay [s/veh]	38.98		36.51			24.14			13.94
Approach LOS	E		E			C			B
Intersection Delay [s/veh]	33.74								
Intersection LOS	D								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	1,289.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.169

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	347	320	0	0	330	26	15	0	264	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	38	65	0	0	79	13	49	0	67	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	385	385	0	0	409	39	64	0	331	1	0	1
Peak Hour Factor	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	124	124	0	0	132	13	21	0	107	0	0	0
Total Analysis Volume [veh/h]	497	497	0	0	528	50	83	0	428	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.50	0.00	0.00	0.00	0.01	0.00	3.17	0.00	0.78	0.18	0.00	0.00
d_M, Delay for Movement [s/veh]	12.16	0.00	0.00	8.37	0.00	0.00	1289.65	147.61	30.74	708.86	198.88	72.48
Movement LOS	B	A	A	A	A	A	F	F	D	F	F	F
95th-Percentile Queue Length [veh/ln]	2.86	0.00	0.00	0.00	0.00	0.00	10.16	7.15	7.15	0.47	0.47	0.47
95th-Percentile Queue Length [ft/ln]	71.48	0.00	0.00	0.00	0.00	0.00	254.10	178.78	178.78	11.69	11.69	11.69
d_A, Approach Delay [s/veh]	6.08			0.00			235.22			390.67		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	60.92											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: Haun Rd (NS) at North Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	3.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.473

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	78	101	44	24	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	745	696	44	24	10
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	196	183	12	6	3
Total Analysis Volume [veh/h]	17	784	733	46	25	11
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	109	109	0	11	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	24	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	107	107	107	107	5
g / C, Green / Cycle	0.89	0.89	0.89	0.89	0.04
(v / s)_i Volume / Saturation Flow Rate	0.02	0.42	0.21	0.21	0.02
s, saturation flow rate [veh/h]	690	1863	1863	1825	1711
c, Capacity [veh/h]	642	1661	1661	1627	72
d1, Uniform Delay [s]	1.51	1.22	0.89	0.90	56.33
k, delay calibration	0.50	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	0.97	0.33	0.35	5.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.47	0.23	0.24	0.50
d, Delay for Lane Group [s/veh]	1.59	2.18	1.22	1.25	61.69
Lane Group LOS	A	A	A	A	E
Critical Lane Group	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.05	1.41	0.51	0.51	1.18
50th-Percentile Queue Length [ft/ln]	1.35	35.36	12.64	12.79	29.41
95th-Percentile Queue Length [veh/ln]	0.10	2.55	0.91	0.92	2.12
95th-Percentile Queue Length [ft/ln]	2.43	63.65	22.75	23.03	52.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	1.59	2.18	1.23	1.25	61.69	61.69
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	2.17		1.24		61.69	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	3.05					
Intersection LOS	A					
Intersection V/C	0.473					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Haun Rd (NS) at Central Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	6.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.463

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	62	23	34	77	71	57
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	62	690	629	77	71	57
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	182	166	20	19	15
Total Analysis Volume [veh/h]	65	726	662	81	75	60
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	35	35	0	85	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	24	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	105	105	105	105	7	7
g / C, Green / Cycle	0.87	0.87	0.87	0.87	0.06	0.06
(v / s)_i Volume / Saturation Flow Rate	0.09	0.39	0.20	0.21	0.04	0.04
s, saturation flow rate [veh/h]	714	1863	1863	1794	1774	1583
c, Capacity [veh/h]	645	1625	1625	1565	108	97
d1, Uniform Delay [s]	2.15	1.61	1.22	1.24	55.28	55.03
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.89	0.33	0.36	7.63	6.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

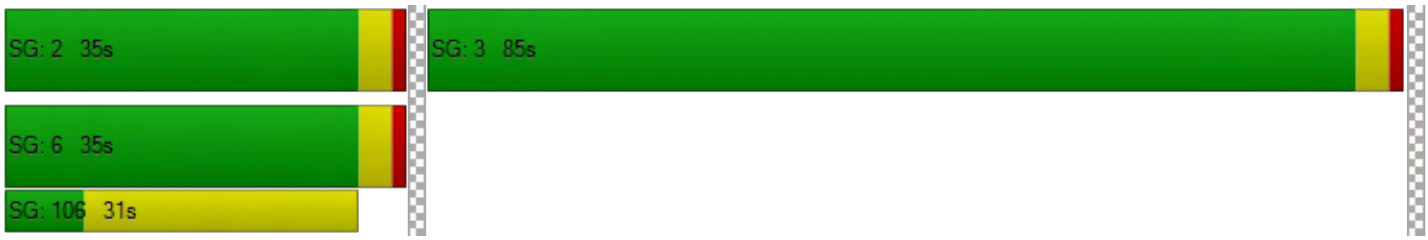
X, volume / capacity	0.10	0.45	0.23	0.24	0.69	0.62
d, Delay for Lane Group [s/veh]	2.46	2.50	1.55	1.59	62.91	61.35
Lane Group LOS	A	A	A	A	E	E
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.28	2.02	0.78	0.79	2.46	1.94
50th-Percentile Queue Length [ft/ln]	6.96	50.55	19.50	19.83	61.43	48.59
95th-Percentile Queue Length [veh/ln]	0.50	3.64	1.40	1.43	4.42	3.50
95th-Percentile Queue Length [ft/ln]	12.53	90.99	35.09	35.70	110.57	87.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.46	2.50	1.57	1.59	62.91	61.35
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	2.49		1.57		62.22	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	6.91					
Intersection LOS	A					
Intersection V/C	0.463					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Haun Rd (NS) at South Project Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	13.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	85	92	0	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	752	687	0	0	11
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	198	181	0	0	3
Total Analysis Volume [veh/h]	0	792	723	0	0	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	13.69
Movement LOS		A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.09
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	2.17
d_A, Approach Delay [s/veh]	0.00		0.00		13.69	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.11					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	45.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.912

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	23	112	24	528	45	39	66	423	9	53	341	485
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	82	0	13	12	0	0	0	0	64
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	112	24	610	45	52	78	423	9	53	341	549
Peak Hour Factor	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	35	7	189	14	16	24	131	3	16	105	170
Total Analysis Volume [veh/h]	28	138	30	754	56	64	96	523	11	66	422	679
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	23	0	17	45	0	11	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	138	138	138	138	138	138	138	138	138	138
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	38	38	9	65	7	62	62
g / C, Green / Cycle	0.09	0.09	0.09	0.27	0.27	0.07	0.47	0.05	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.02	0.07	0.02	0.25	0.25	0.05	0.29	0.04	0.23	0.43
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1754	1774	1856	1774	1863	1583
c, Capacity [veh/h]	161	169	144	484	479	120	876	86	843	716
d1, Uniform Delay [s]	57.85	61.49	58.04	48.34	48.46	63.25	26.96	64.77	26.70	36.15
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.51	9.24	0.71	6.61	7.09	11.29	0.69	13.41	0.46	7.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

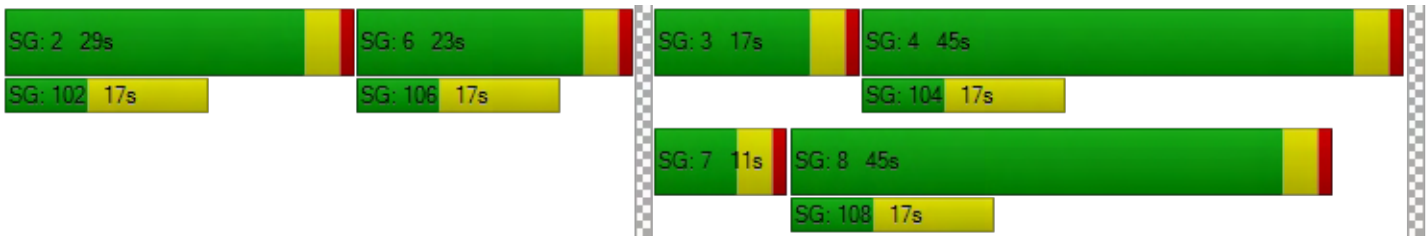
X, volume / capacity	0.17	0.82	0.21	0.90	0.91	0.80	0.61	0.77	0.50	0.95
d, Delay for Lane Group [s/veh]	58.36	70.74	58.75	54.95	55.54	74.55	27.65	78.18	27.16	43.64
Lane Group LOS	E	E	E	D	E	E	C	E	C	D
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.93	5.18	1.00	15.37	15.39	3.70	13.13	2.61	9.95	22.94
50th-Percentile Queue Length [ft/ln]	23.22	129.54	25.07	384.17	384.77	92.48	328.31	65.35	248.76	573.38
95th-Percentile Queue Length [veh/ln]	1.67	8.91	1.80	21.80	21.82	6.66	19.08	4.71	15.12	30.79
95th-Percentile Queue Length [ft/ln]	41.80	222.86	45.12	544.89	545.62	166.47	476.89	117.63	378.09	769.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.36	70.74	58.75	55.20	55.54	55.54	74.55	27.65	27.65	78.18	27.16	43.64
Movement LOS	E	E	E	E	E	E	E	C	C	E	C	D
d_A, Approach Delay [s/veh]	67.13			55.25			34.79			39.64		
Approach LOS	E			E			C			D		
d_I, Intersection Delay [s/veh]	45.21											
Intersection LOS	D											
Intersection V/C	0.912											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	333	0	439	0	1489	630	0	1666	1057
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	33	0	86	0	0	26	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	333	0	472	0	1575	630	0	1692	1057
Peak Hour Factor	1.0000	1.0000	1.0000	0.9340	1.0000	0.9340	1.0000	0.9340	0.9340	1.0000	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	89	0	126	0	422	0	0	453	0
Total Analysis Volume [veh/h]	0	0	0	357	0	505	0	1686	0	0	1812	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	51	0	0	0	89	0	0	89	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		61	61	61	61	61	61	61
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		15	15	15	39	39	39	39
g / C, Green / Cycle		0.24	0.24	0.24	0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate		0.17	0.18	0.18	0.25	0.00	0.36	0.00
s, saturation flow rate [veh/h]		1774	1621	1583	6765	1583	5074	1583
c, Capacity [veh/h]		422	386	377	4273	1000	3205	1000
d1, Uniform Delay [s]		21.40	21.63	21.69	5.55	0.00	6.48	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.12	2.76	2.97	0.06	0.00	0.16	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.70	0.74	0.75	0.39	0.00	0.57	0.00
d, Delay for Lane Group [s/veh]		23.51	24.39	24.66	5.61	0.00	6.64	0.00
Lane Group LOS		C	C	C	A	A	A	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		3.83	3.78	3.77	1.92	0.00	3.23	0.00
50th-Percentile Queue Length [ft/ln]		95.76	94.50	94.21	47.96	0.00	80.70	0.00
95th-Percentile Queue Length [veh/ln]		6.89	6.80	6.78	3.45	0.00	5.81	0.00
95th-Percentile Queue Length [ft/ln]		172.37	170.10	169.58	86.33	0.00	145.26	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	23.68	0.00	24.54	0.00	5.61	0.00	0.00	6.64	0.00
Movement LOS				C		C		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			24.18			5.61			6.64		
Approach LOS	A			C			A			A		
d_I, Intersection Delay [s/veh]	9.71											
Intersection LOS	A											
Intersection V/C	0.615											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.868

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	322	0	134	0	501	379	385	592	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	21	61	0	64	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	322	0	134	0	522	440	385	656	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9250	1.0000	0.9250	1.0000	0.9250	0.9250	0.9250	0.9250	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	87	0	36	0	141	119	104	177	0
Total Analysis Volume [veh/h]	0	0	0	348	0	145	0	564	476	416	709	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	120	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	28	0	0	0	40	0	32	72	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		77	77	77	77	77	77
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		18	18	27	27	21	51
g / C, Green / Cycle		0.23	0.23	0.35	0.35	0.27	0.67
(v / s)_i Volume / Saturation Flow Rate		0.20	0.09	0.30	0.30	0.23	0.38
s, saturation flow rate [veh/h]		1774	1583	1863	1583	1774	1863
c, Capacity [veh/h]		409	365	650	552	471	1240
d1, Uniform Delay [s]		28.49	25.21	23.53	23.46	27.28	6.97
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		5.02	0.70	3.70	4.11	5.66	0.42
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

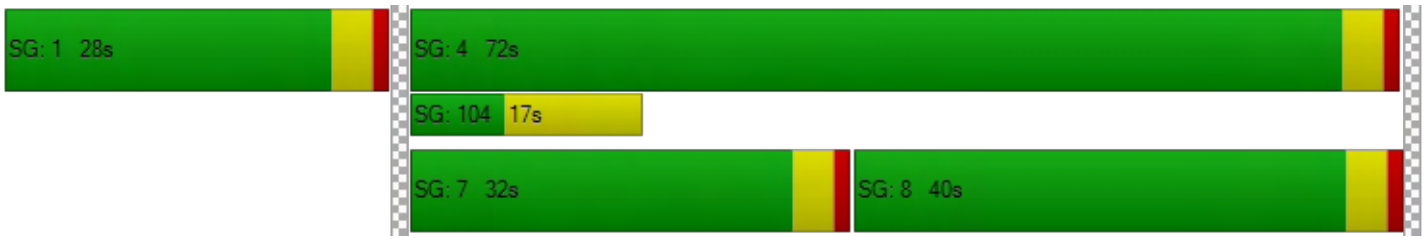
X, volume / capacity		0.85	0.40	0.87	0.86	0.88	0.57
d, Delay for Lane Group [s/veh]		33.52	25.91	27.23	27.57	32.94	7.39
Lane Group LOS		C	C	C	C	C	A
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		6.47	2.25	9.64	8.18	7.74	5.05
50th-Percentile Queue Length [ft/ln]		161.82	56.17	241.07	204.57	193.60	126.33
95th-Percentile Queue Length [veh/ln]		10.65	4.04	14.74	12.87	12.31	8.74
95th-Percentile Queue Length [ft/ln]		266.13	101.11	368.39	321.85	307.69	218.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	33.52	0.00	25.91	0.00	27.23	27.57	32.94	7.39	0.00
Movement LOS				C		C		C	C	C	A	
d_A, Approach Delay [s/veh]	0.00			31.28			27.39			16.84		
Approach LOS	A			C			C			B		
d_I, Intersection Delay [s/veh]	23.64											
Intersection LOS	C											
Intersection V/C	0.868											

Sequence

Ring 1	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.708

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			No			No			No	

Volumes

Name												
Base Volume Input [veh/h]	402	0	541	0	0	0	0	1456	345	0	2313	491
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	32	54	0	26	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	402	0	541	0	0	0	0	1488	399	0	2339	491
Peak Hour Factor	0.9350	1.0000	0.9350	1.0000	1.0000	1.0000	1.0000	0.9350	0.9350	1.0000	0.9350	0.9350
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	107	0	145	0	0	0	0	398	0	0	625	0
Total Analysis Volume [veh/h]	430	0	579	0	0	0	0	1591	0	0	2502	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	78	0	0	0	0	0	0	42	0	0	42	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	45	45	45		45	45	45	45
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	13		24	24	24	24
g / C, Green / Cycle	0.30	0.30	0.30		0.52	0.52	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.19	0.21	0.21		0.31	0.00	0.37	0.00
s, saturation flow rate [veh/h]	1774	1632	1583		5074	1583	6765	1583
c, Capacity [veh/h]	532	490	475		2653	828	3537	828
d1, Uniform Delay [s]	13.65	13.94	14.05		7.49	0.00	8.16	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.24	1.72	1.95		0.22	0.00	0.27	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.69	0.71		0.60	0.00	0.71	0.00
d, Delay for Lane Group [s/veh]	14.90	15.65	16.00		7.71	0.00	8.43	0.00
Lane Group LOS	B	B	B		A	A	A	A
Critical Lane Group	No	No	Yes		No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.62	2.72	2.77		2.44	0.00	3.13	0.00
50th-Percentile Queue Length [ft/ln]	65.53	68.04	69.14		60.92	0.00	78.16	0.00
95th-Percentile Queue Length [veh/ln]	4.72	4.90	4.98		4.39	0.00	5.63	0.00
95th-Percentile Queue Length [ft/ln]	117.95	122.47	124.46		109.65	0.00	140.69	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.06	0.00	15.86	0.00	0.00	0.00	0.00	7.71	0.00	0.00	8.43	0.00
Movement LOS	B		B					A	A		A	A
d_A, Approach Delay [s/veh]	15.52			0.00			7.71			8.43		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	9.61											
Intersection LOS	A											
Intersection V/C	0.708											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.889

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	235	0	372	0	0	0	83	722	0	0	794	465
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	41	0	0	0	0	0	0	21	0	0	23	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	276	0	372	0	0	0	83	743	0	0	817	465
Peak Hour Factor	0.9380	1.0000	0.9380	1.0000	1.0000	1.0000	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	0	99	0	0	0	22	198	0	0	218	124
Total Analysis Volume [veh/h]	294	0	397	0	0	0	88	792	0	0	871	496
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	32	0	0	0	0	0	11	68	0	0	57	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	R
C, Cycle Length [s]	88	88		88	88	88	88
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25		6	55	45	45
g / C, Green / Cycle	0.28	0.28		0.07	0.62	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.17	0.25		0.05	0.43	0.47	0.31
s, saturation flow rate [veh/h]	1774	1583		1774	1863	1863	1583
c, Capacity [veh/h]	506	451		125	1162	947	805
d1, Uniform Delay [s]	26.96	30.02		40.01	10.82	19.99	15.50
k, delay calibration	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.06	5.70		7.06	0.71	4.23	0.77
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

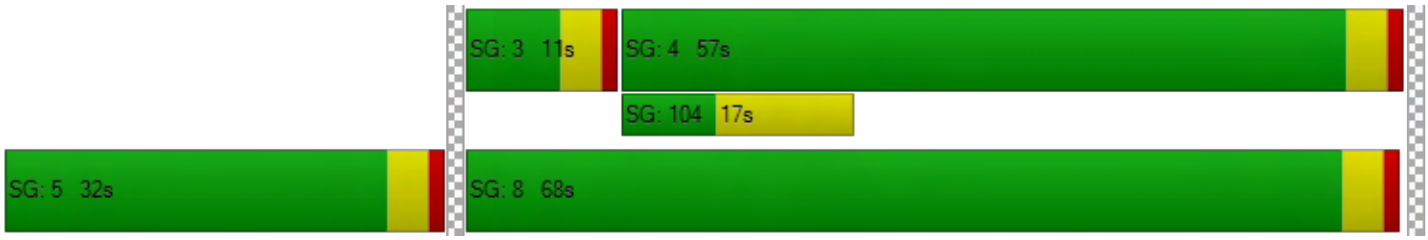
X, volume / capacity	0.58	0.88		0.70	0.68	0.92	0.62
d, Delay for Lane Group [s/veh]	28.03	35.72		47.07	11.53	24.22	16.27
Lane Group LOS	C	D		D	B	C	B
Critical Lane Group	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.28	8.43		2.08	8.90	16.04	6.76
50th-Percentile Queue Length [ft/ln]	132.10	210.86		51.97	222.49	400.94	169.05
95th-Percentile Queue Length [veh/ln]	9.05	13.20		3.74	13.79	22.61	11.03
95th-Percentile Queue Length [ft/ln]	226.34	329.94		93.54	344.81	565.13	275.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.03	0.00	35.72	0.00	0.00	0.00	47.07	11.53	0.00	0.00	24.22	16.27
Movement LOS	C		D				D	B			C	B
d_A, Approach Delay [s/veh]	32.45			0.00			15.09			21.34		
Approach LOS	C			A			B			C		
d_I, Intersection Delay [s/veh]	22.08											
Intersection LOS	C											
Intersection V/C	0.889											

Sequence

Ring 1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	580	31	97	77	64	175	75	1252	658	137	2049	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	0	3	2	25	5	0	15	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	588	31	97	77	64	178	77	1277	663	137	2064	41
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	154	8	25	20	17	46	20	334	173	36	539	11
Total Analysis Volume [veh/h]	614	32	101	80	67	186	80	1334	693	143	2157	43
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	33	32	0	22	21	0	14	75	0	11	72	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	118	118	118	118	118	118	118	118	118	118	118	118
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	29	29	6	12	12	6	59	59	7	60	60
g / C, Green / Cycle	0.21	0.25	0.25	0.05	0.10	0.10	0.05	0.50	0.50	0.06	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.18	0.02	0.06	0.02	0.08	0.08	0.02	0.26	0.44	0.04	0.41	0.41
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1715	1583	3445	5074	1583	3445	3547	1844
c, Capacity [veh/h]	710	464	394	189	168	155	189	2538	792	209	1795	933
d1, Uniform Delay [s]	45.41	33.97	35.66	54.13	52.16	52.19	54.13	20.06	26.29	54.49	24.38	24.45
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.33	0.06	0.34	1.50	7.66	8.49	1.50	0.17	3.25	3.93	0.89	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

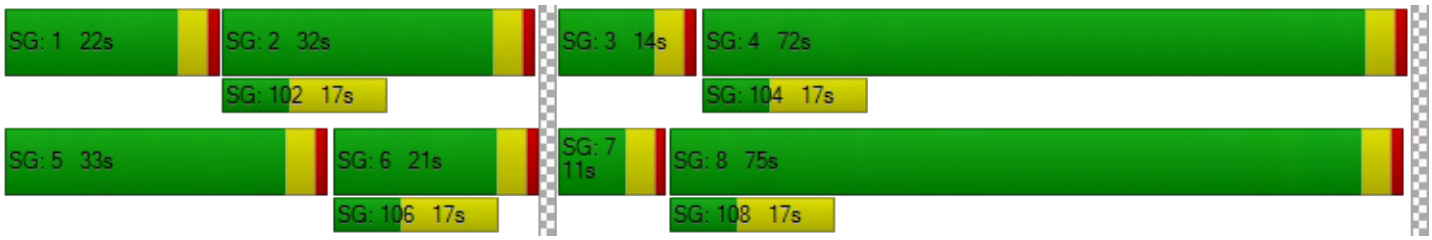
X, volume / capacity	0.87	0.07	0.26	0.42	0.78	0.79	0.42	0.53	0.87	0.68	0.81	0.81
d, Delay for Lane Group [s/veh]	48.73	34.03	36.00	55.62	59.82	60.68	55.62	20.23	29.54	58.42	25.27	26.17
Lane Group LOS	D	C	D	E	E	E	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.99	0.72	2.39	1.19	4.15	3.90	1.19	8.20	17.39	2.20	16.50	17.48
50th-Percentile Queue Length [ft/ln]	224.81	17.93	59.68	29.80	103.83	97.44	29.80	205.05	434.73	55.00	412.55	437.07
95th-Percentile Queue Length [veh/ln]	13.91	1.29	4.30	2.15	7.48	7.02	2.15	12.90	24.23	3.96	23.16	24.34
95th-Percentile Queue Length [ft/ln]	347.76	32.28	107.42	53.65	186.89	175.39	53.65	322.48	605.70	99.00	579.10	608.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.73	34.03	36.00	55.62	59.82	60.39	55.62	20.23	29.54	58.42	25.57	26.17
Movement LOS	D	C	D	E	E	E	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	46.38			59.12			24.63			27.58		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	30.90											
Intersection LOS	C											
Intersection V/C	0.849											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.462

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	509	39	92	302	0	0	0	0	119	0	178
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	509	39	92	302	0	0	0	0	119	0	178
Peak Hour Factor	1.0000	0.9190	0.9190	0.9190	0.9190	1.0000	1.0000	1.0000	1.0000	0.9190	1.0000	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	138	11	25	82	0	0	0	0	32	0	48
Total Analysis Volume [veh/h]	0	554	42	100	329	0	0	0	0	129	0	194
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	55	0	20	75	0	0	0	0	25	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	30	30	30	30		30	30	30
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	4	16		7	7	7
g / C, Green / Cycle	0.25	0.25	0.13	0.52		0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.16	0.03	0.06	0.09		0.06	0.07	0.07
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1607	1583
c, Capacity [veh/h]	895	399	237	1838		385	349	344
d1, Uniform Delay [s]	10.02	8.68	12.02	3.87		9.90	9.91	9.91
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.70	0.11	1.19	0.05		0.43	0.48	0.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.62	0.11	0.42	0.18		0.30	0.30	0.30
d, Delay for Lane Group [s/veh]	10.72	8.80	13.22	3.91		10.33	10.39	10.40
Lane Group LOS	B	A	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.20	0.16	0.54	0.22		0.50	0.46	0.45
50th-Percentile Queue Length [ft/ln]	29.95	3.97	13.55	5.54		12.38	11.45	11.32
95th-Percentile Queue Length [veh/ln]	2.16	0.29	0.98	0.40		0.89	0.82	0.81
95th-Percentile Queue Length [ft/ln]	53.91	7.14	24.40	9.98		22.29	20.62	20.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.72	8.80	13.22	3.91	0.00	0.00	0.00	0.00	10.34	0.00	10.39
Movement LOS		B	A	B	A					B		B
d_A, Approach Delay [s/veh]	10.59			6.08			0.00			10.37		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	9.10											
Intersection LOS	A											
Intersection V/C	0.462											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	34.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.860

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	310	152	88	40	180	369	249	624	277	24	640	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	4	3	13	5	0	15	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	314	152	88	40	180	373	252	637	282	24	655	46
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	41	24	11	49	101	68	173	76	7	177	12
Total Analysis Volume [veh/h]	340	165	95	43	195	404	273	690	306	26	710	50
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	37	0	13	34	0	22	39	0	11	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	94	94	94	94	94	94	94	94	94	94	94	94
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	34	34	5	27	27	17	36	36	3	23	23
g / C, Green / Cycle	0.13	0.36	0.36	0.05	0.28	0.28	0.18	0.38	0.38	0.04	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.10	0.09	0.06	0.02	0.10	0.26	0.15	0.28	0.28	0.01	0.21	0.21
s, saturation flow rate [veh/h]	3445	1863	1583	1774	1863	1583	1774	1863	1672	1774	1863	1820
c, Capacity [veh/h]	441	675	574	89	531	451	316	710	637	65	446	436
d1, Uniform Delay [s]	39.87	21.07	20.42	43.67	26.98	32.43	37.70	25.15	25.25	44.48	34.42	34.43
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.90	0.19	0.13	3.99	0.42	6.49	6.97	1.51	1.74	3.89	5.00	5.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.24	0.17	0.48	0.37	0.90	0.86	0.74	0.74	0.40	0.86	0.86
d, Delay for Lane Group [s/veh]	42.77	21.25	20.56	47.66	27.41	38.92	44.67	26.66	26.99	48.37	39.42	39.56
Lane Group LOS	D	C	C	D	C	D	D	C	C	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.94	2.54	1.42	1.07	3.51	9.41	6.63	9.98	9.12	0.66	8.87	8.69
50th-Percentile Queue Length [ft/ln]	98.57	63.42	35.45	26.70	87.87	235.25	165.68	249.50	227.88	16.50	221.68	217.23
95th-Percentile Queue Length [veh/ln]	7.10	4.57	2.55	1.92	6.33	14.44	10.85	15.16	14.07	1.19	13.75	13.52
95th-Percentile Queue Length [ft/ln]	177.42	114.15	63.81	48.06	158.16	361.02	271.22	379.02	351.66	29.71	343.77	338.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.77	21.25	20.56	47.66	27.41	38.92	44.67	26.74	26.99	48.37	39.48	39.56
Movement LOS	D	C	C	D	C	D	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	33.34			36.01			30.66			39.78		
Approach LOS	C			D			C			D		
d_I, Intersection Delay [s/veh]	34.36											
Intersection LOS	C											
Intersection V/C	0.860											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	26.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.802

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	214	176	128	79	240	408	236	1002	169	191	1415	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	0	0	0	3	2	18	4	0	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	219	176	128	79	240	411	238	1020	173	191	1421	50
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	47	34	21	64	110	64	274	46	51	382	13
Total Analysis Volume [veh/h]	235	189	137	85	258	441	256	1096	186	205	1526	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	29	29	28	43	43	13	51	0	12	50	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	14	27	6	12	34	18	45	45	9	36	36
g / C, Green / Cycle	0.10	0.16	0.30	0.07	0.13	0.38	0.20	0.50	0.50	0.10	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.07	0.05	0.09	0.05	0.07	0.28	0.07	0.35	0.36	0.06	0.30	0.03
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1771	3445	5074	1583
c, Capacity [veh/h]	331	563	478	121	465	594	688	925	879	341	2007	626
d1, Uniform Delay [s]	39.57	33.73	24.07	41.12	36.73	24.40	31.21	17.59	17.76	38.96	23.57	17.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.82	0.35	0.33	7.08	1.03	1.85	0.33	1.00	1.11	1.71	0.61	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

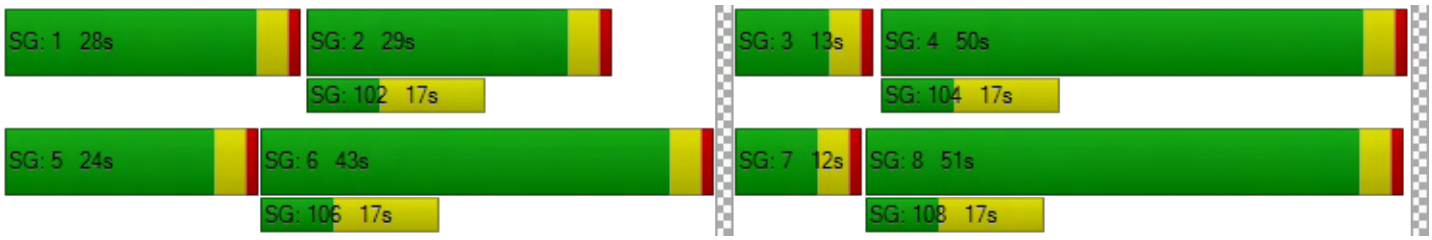
X, volume / capacity	0.71	0.34	0.29	0.70	0.55	0.74	0.37	0.70	0.72	0.60	0.76	0.09
d, Delay for Lane Group [s/veh]	42.39	34.07	24.39	48.21	37.76	26.25	31.54	18.59	18.87	40.67	24.18	17.12
Lane Group LOS	D	C	C	D	D	C	C	B	B	D	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.62	1.84	2.23	2.06	2.69	8.10	2.40	10.00	9.78	2.22	9.02	0.69
50th-Percentile Queue Length [ft/ln]	65.46	46.02	55.77	51.56	67.25	202.46	60.06	250.06	244.48	55.61	225.50	17.37
95th-Percentile Queue Length [veh/ln]	4.71	3.31	4.02	3.71	4.84	12.77	4.32	15.19	14.91	4.00	13.95	1.25
95th-Percentile Queue Length [ft/ln]	117.83	82.84	100.39	92.82	121.06	319.13	108.11	379.73	372.69	100.09	348.63	31.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.39	34.07	24.39	48.21	37.76	26.25	31.54	18.70	18.87	40.67	24.18	17.12
Movement LOS	D	C	C	D	D	C	C	B	B	D	C	B
d_A, Approach Delay [s/veh]	35.19			32.42			20.86			25.86		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	26.44											
Intersection LOS	C											
Intersection V/C	0.802											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME.vistro
Report File: C:\...\PMEP.pdf

Scenario 2 Existing Plus Project Evening Peak Hour
1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.732	21.5	C
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	NB Left	0.651	17.7	B
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	SB Thru	0.311	9.8	A
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	SB Left	0.429	10.5	B
5	Sherman Rd (NS) at MFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	9.1	A
6	Sherman Rd (NS) at SFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	9.2	A
7	MFR Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Left	0.008	12.8	B
8	Commercial Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Right	0.036	9.7	A
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.899	41.5	D
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	SB Thru	1.054	48.6	E
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	EB Left	0.807	144.2	F
12	Haun Rd (NS) at North Project Access (EW)	Signalized	HCM 2010	EB Left	0.515	8.1	A
13	Haun Rd (NS) at Central Project Access (EW)	Signalized	HCM 2010	EB Left	0.454	10.1	B
14	Haun Rd (NS) at South Project Access (EW)	Two-way stop	HCM 2010	EB Right	0.090	12.7	B
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.778	24.1	C
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.665	15.5	B
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.900	28.0	C
	I-215 Fwy NB Ramps (NS) at						

18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.706	21.3	C
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.911	29.3	C
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.834	44.5	D
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.466	8.9	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.821	30.4	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.816	21.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.732

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	85	113	160	225	157	104	120	1108	48	284	1227	282
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	24	0	18	26	0	0	12	32	0	14	19
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	137	160	243	183	104	120	1120	80	284	1241	301
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	35	41	62	47	27	31	288	21	73	319	77
Total Analysis Volume [veh/h]	114	141	164	250	188	107	123	1151	82	292	1275	309
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	23	23	26	37	0	17	47	0	20	50	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	64	64	64	64	64	64	64	64	64	64	64	64
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	7	20	11	12	12	6	21	21	8	23	23
g / C, Green / Cycle	0.10	0.12	0.31	0.18	0.20	0.20	0.10	0.33	0.33	0.13	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.06	0.08	0.10	0.14	0.08	0.09	0.07	0.23	0.23	0.08	0.25	0.20
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1641	1774	3547	1800	3445	5074	1583
c, Capacity [veh/h]	169	216	492	311	365	321	173	1157	587	456	1832	572
d1, Uniform Delay [s]	27.97	27.05	16.94	25.32	22.56	22.61	27.99	18.88	18.88	26.30	17.44	16.22
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.60	3.33	0.39	4.84	0.79	0.93	5.31	0.81	1.58	1.50	0.48	0.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

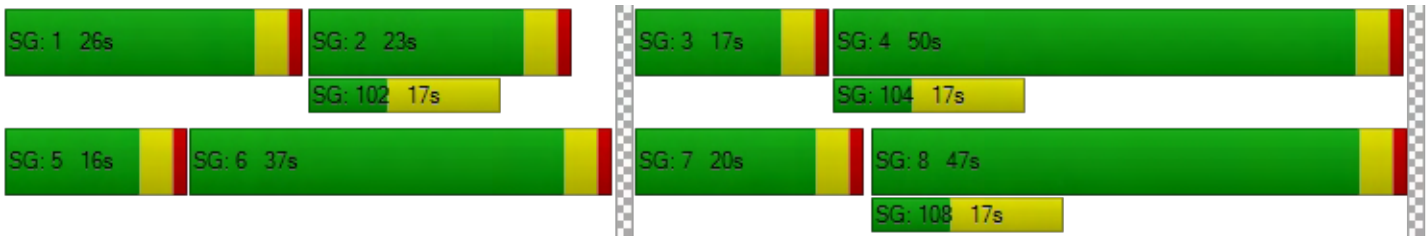
X, volume / capacity	0.67	0.65	0.33	0.80	0.43	0.44	0.71	0.71	0.71	0.64	0.70	0.54
d, Delay for Lane Group [s/veh]	32.57	30.37	17.34	30.16	23.35	23.54	33.30	19.68	20.46	27.80	17.92	17.02
Lane Group LOS	C	C	B	C	C	C	C	B	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.82	2.15	1.76	3.83	2.00	1.82	1.99	4.94	5.15	2.09	4.87	3.37
50th-Percentile Queue Length [ft/ln]	45.44	53.74	44.02	95.84	50.11	45.56	49.69	123.59	128.63	52.19	121.85	84.19
95th-Percentile Queue Length [veh/ln]	3.27	3.87	3.17	6.90	3.61	3.28	3.58	8.59	8.87	3.76	8.49	6.06
95th-Percentile Queue Length [ft/ln]	81.79	96.74	79.23	172.50	90.20	82.01	89.44	214.75	221.63	93.94	212.37	151.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.57	30.37	17.34	30.16	23.38	23.54	33.30	19.91	20.46	27.80	17.92	17.02
Movement LOS	C	C	B	C	C	C	C	B	C	C	B	B
d_A, Approach Delay [s/veh]	25.87			26.52			21.16			19.31		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	21.50											
Intersection LOS	C											
Intersection V/C	0.732											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	124	68	87	175	67	61	180	48	64	268	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	82	9	0	88	0	0	0	18	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	206	77	87	263	67	61	180	66	73	268	133
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	54	20	23	70	18	16	48	17	19	71	35
Total Analysis Volume [veh/h]	38	218	81	92	278	71	65	190	70	77	284	141
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	46	0	17	52	0	14	41	0	16	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	43	43	43	43	43	43	43	43	43	43
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	9	5	12	12	4	9	4	9	9
g / C, Green / Cycle	0.06	0.22	0.11	0.27	0.27	0.09	0.20	0.10	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.17	0.05	0.15	0.04	0.04	0.15	0.04	0.15	0.09
s, saturation flow rate [veh/h]	1774	1778	1774	1863	1583	1774	1778	1774	1863	1583
c, Capacity [veh/h]	107	389	195	499	424	158	362	176	398	338
d1, Uniform Delay [s]	19.54	15.91	18.12	13.66	12.17	18.66	16.10	18.39	15.82	14.72
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.97	3.24	1.78	0.98	0.18	1.70	2.69	1.71	2.40	0.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

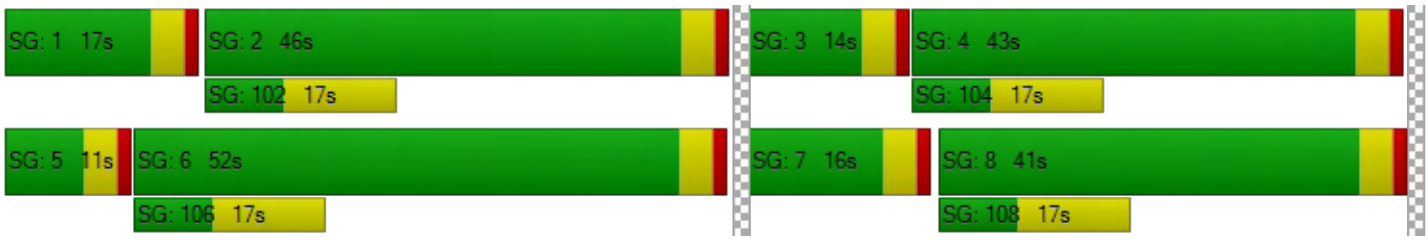
X, volume / capacity	0.35	0.77	0.47	0.56	0.17	0.41	0.72	0.44	0.71	0.42
d, Delay for Lane Group [s/veh]	21.51	19.15	19.90	14.64	12.35	20.37	18.79	20.10	18.22	15.54
Lane Group LOS	C	B	B	B	B	C	B	C	B	B
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.38	2.68	0.85	2.06	0.46	0.62	2.30	0.72	2.46	1.09
50th-Percentile Queue Length [ft/ln]	9.60	67.01	21.28	51.54	11.50	15.42	57.49	18.01	61.46	27.25
95th-Percentile Queue Length [veh/ln]	0.69	4.83	1.53	3.71	0.83	1.11	4.14	1.30	4.42	1.96
95th-Percentile Queue Length [ft/ln]	17.27	120.63	38.31	92.77	20.70	27.75	103.48	32.41	110.62	49.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.51	19.15	19.15	19.90	14.64	12.35	20.37	18.79	18.79	20.10	18.22	15.54
Movement LOS	C	B	B	B	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	19.41			15.37			19.11			17.76		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	17.72											
Intersection LOS	B											
Intersection V/C	0.651											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.311

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	39	55	2	3	80	98	115	1	48	0	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	110	0	0	124	0	0	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	165	2	3	204	98	115	1	59	0	1	4
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	43	1	1	53	25	30	0	15	0	0	1
Total Analysis Volume [veh/h]	44	170	2	3	210	101	119	1	61	0	1	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	728	685	792	706	721
Degree of Utilization, x	0.30	0.31	0.13	0.26	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.24	1.33	0.44	1.02	0.02
95th-Percentile Queue Length [ft]	31.02	33.14	10.91	25.46	0.52
Approach Delay [s/veh]	10.01	9.54		9.85	8.03
Approach LOS	B	A		A	A
Intersection Delay [s/veh]	9.75				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.429

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	2	87	2	0	0	2	0	0	2	96
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	22	10	113	39	0	0	0	0	17	0	99
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	25	12	200	41	0	0	2	0	17	2	195
Peak Hour Factor	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	8	4	66	14	0	0	1	0	6	1	64
Total Analysis Volume [veh/h]	0	33	16	264	54	0	0	3	0	22	3	257
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	741	741	671	608	755
Degree of Utilization, x	0.07	0.43	0.00	0.04	0.34

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.21	2.17	0.01	0.13	1.51
95th-Percentile Queue Length [ft]	5.30	54.15	0.34	3.21	37.79
Approach Delay [s/veh]	8.20	11.46	8.39	9.82	
Approach LOS	A	B	A	A	
Intersection Delay [s/veh]	10.49				
Intersection LOS	B				

Intersection Level Of Service Report
Intersection 5: Sherman Rd (NS) at MFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	5	0	0	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	0	10	46	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	0	10	48	0	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	0	3	13	0	2
Total Analysis Volume [veh/h]	33	0	11	51	0	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.30	0.00	9.09	8.48
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.48	0.48	0.43	0.43
d_A, Approach Delay [s/veh]	0.00		1.29		8.48	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.30					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Sherman Rd (NS) at SFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	5	0	0	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	0	31	15	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	0	31	17	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	0	8	4	0	0
Total Analysis Volume [veh/h]	33	0	33	18	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.33	0.00	9.18	8.46
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.06	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.50	1.50	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		4.74		8.82	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.88					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: MFR Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	90	0	0	97
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	30	117	6	50	112
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	30	207	6	50	209
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	8	54	2	13	55
Total Analysis Volume [veh/h]	4	32	218	6	53	220
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	12.78	9.63	0.00	0.00	7.79	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.12	0.06
95th-Percentile Queue Length [ft/ln]	3.73	3.73	0.00	0.00	2.89	1.45
d_A, Approach Delay [s/veh]	9.98		0.00		1.51	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.45					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Commercial Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.036

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	90	0	0	97
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	28	132	16	0	162
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	28	222	16	0	259
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	58	4	0	68
Total Analysis Volume [veh/h]	0	29	234	17	0	273
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.69	0.00	0.00	0.00	0.00
Movement LOS		A	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.11	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	2.83	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.69		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.51					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	41.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.899

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	344	91	813	337	126	109	132	1152	260	889	1249	218
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	32	0	120	0	0	0	0	0	30	140	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	376	91	933	337	126	109	132	1152	290	1029	1249	218
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	96	23	239	86	32	28	34	295	74	263	320	56
Total Analysis Volume [veh/h]	385	93	955	345	129	112	135	1179	297	1053	1278	223
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	21	21	24	21	0	44	42	0	53	51	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	148	148	148	148	148	148	148	148	148	148	148	148
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	20	78	18	18	18	8	41	41	53	86	86
g / C, Green / Cycle	0.13	0.14	0.53	0.12	0.12	0.12	0.05	0.27	0.27	0.36	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.11	0.05	0.34	0.10	0.07	0.07	0.04	0.23	0.19	0.31	0.28	0.29
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1584	3445	5074	1583	3445	3547	1728
c, Capacity [veh/h]	451	255	1472	409	233	198	188	1395	435	1244	2063	1005
d1, Uniform Delay [s]	62.92	58.01	25.30	63.86	60.89	61.00	68.84	50.68	47.88	43.48	18.01	18.31
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.69	0.87	0.49	4.79	2.06	2.55	5.06	1.49	1.89	1.68	0.18	0.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.36	0.65	0.84	0.55	0.57	0.72	0.85	0.68	0.85	0.48	0.50
d, Delay for Lane Group [s/veh]	67.62	58.88	25.79	68.65	62.94	63.54	73.90	52.17	49.78	45.16	18.19	18.70
Lane Group LOS	E	E	C	E	E	E	E	D	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.40	3.25	12.13	6.66	4.71	4.13	2.66	13.96	10.06	18.00	9.95	10.33
50th-Percentile Queue Length [ft/ln]	185.12	81.23	303.36	166.44	117.70	103.28	66.44	349.06	251.54	449.93	248.68	258.28
95th-Percentile Queue Length [veh/ln]	11.87	5.85	17.85	10.89	8.27	7.44	4.78	20.09	15.26	24.95	15.12	15.60
95th-Percentile Queue Length [ft/ln]	296.69	146.21	446.18	272.23	206.66	185.91	119.59	502.26	381.60	623.86	377.99	390.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.62	58.88	25.79	68.65	62.94	63.54	73.90	52.17	49.78	45.16	18.30	18.70
Movement LOS	E	E	C	E	E	E	E	D	D	D	B	B
d_A, Approach Delay [s/veh]	39.17			66.42			53.55			29.41		
Approach LOS	D			E			D			C		
d_I, Intersection Delay [s/veh]	41.47											
Intersection LOS	D											
Intersection V/C	0.899											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	48.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.054

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	241	255	2	4	258	293	245	2	118	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	157	0	0	179	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	241	412	2	4	437	293	245	2	118	0	0	4
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	110	1	1	116	78	65	1	31	0	0	1
Total Analysis Volume [veh/h]	256	438	2	4	465	312	261	2	126	0	0	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	421	447	415	465	484	416	442	482	377
Degree of Utilization, x	0.61	0.98	0.01	1.05	0.64	0.63	0.00	0.26	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.91	12.38	0.03	14.77	4.50	4.15	0.01	1.04	0.03
95th-Percentile Queue Length [ft]	97.66	309.57	0.73	369.25	112.58	103.82	0.34	25.92	0.81
Approach Delay [s/veh]	50.87		60.50			20.84			12.67
Approach LOS	F		F			C			B
Intersection Delay [s/veh]	48.56								
Intersection LOS	E								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	144.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.807

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	82	472	0	0	349	13	7	0	82	4	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	118	130	0	0	158	44	54	0	106	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	602	0	0	507	57	61	0	188	4	0	0
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	155	0	0	130	15	16	0	48	1	0	0
Total Analysis Volume [veh/h]	205	618	0	0	521	59	63	0	193	4	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.01	0.00	0.00	0.01	0.00	0.81	0.00	0.35	0.08	0.00	0.00
d_M, Delay for Movement [s/veh]	9.56	0.00	0.00	8.74	0.00	0.00	144.20	48.23	14.89	85.66	54.82	18.91
Movement LOS	A	A	A	A	A	A	F	E	B	F	F	C
95th-Percentile Queue Length [veh/ln]	0.77	0.00	0.00	0.00	0.00	0.00	4.01	1.55	1.55	0.26	0.26	0.26
95th-Percentile Queue Length [ft/ln]	19.34	0.00	0.00	0.00	0.00	0.00	100.24	38.63	38.63	6.43	6.43	6.43
d_A, Approach Delay [s/veh]	2.38			0.00			46.72			85.66		
Approach LOS	A			A			E			F		
d_I, Intersection Delay [s/veh]	8.58											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: Haun Rd (NS) at North Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	8.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.515

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	155	159	104	93	38
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	709	590	104	93	38
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	187	155	27	24	10
Total Analysis Volume [veh/h]	36	746	621	109	98	40
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	35	35	0	85	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	24	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	100	100	100	100	12
g / C, Green / Cycle	0.84	0.84	0.84	0.84	0.10
(v / s)_i Volume / Saturation Flow Rate	0.05	0.40	0.20	0.21	0.08
s, saturation flow rate [veh/h]	723	1863	1863	1769	1714
c, Capacity [veh/h]	619	1556	1556	1478	169
d1, Uniform Delay [s]	3.25	2.73	2.03	2.06	53.10
k, delay calibration	0.50	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	1.06	0.35	0.40	9.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

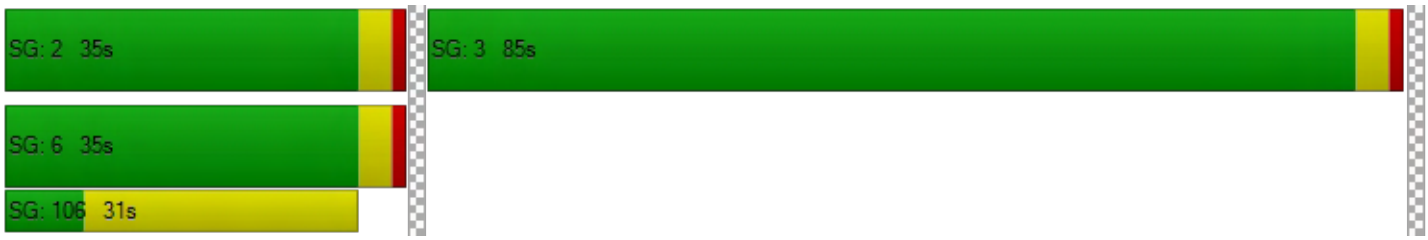
X, volume / capacity	0.06	0.48	0.23	0.25	0.82
d, Delay for Lane Group [s/veh]	3.43	3.79	2.39	2.46	62.45
Lane Group LOS	A	A	A	A	E
Critical Lane Group	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.21	3.70	1.33	1.36	4.52
50th-Percentile Queue Length [ft/ln]	5.19	92.46	33.37	34.03	113.00
95th-Percentile Queue Length [veh/ln]	0.37	6.66	2.40	2.45	8.01
95th-Percentile Queue Length [ft/ln]	9.34	166.42	60.07	61.25	200.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.43	3.79	2.42	2.46	62.45	62.45
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	3.77		2.42		62.45	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	8.08					
Intersection LOS	A					
Intersection V/C	0.515					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Haun Rd (NS) at Central Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	10.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.454

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	125	57	52	145	132	71
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	611	483	145	132	71
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	161	127	38	35	19
Total Analysis Volume [veh/h]	132	643	508	153	139	75
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	35	35	0	85	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	24	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	100	100	100	100	12	12
g / C, Green / Cycle	0.84	0.84	0.84	0.84	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.17	0.35	0.18	0.19	0.08	0.05
s, saturation flow rate [veh/h]	771	1863	1863	1722	1774	1583
c, Capacity [veh/h]	659	1555	1555	1438	175	156
d1, Uniform Delay [s]	3.60	2.50	1.99	2.03	52.96	51.24
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.68	0.81	0.31	0.37	7.97	2.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

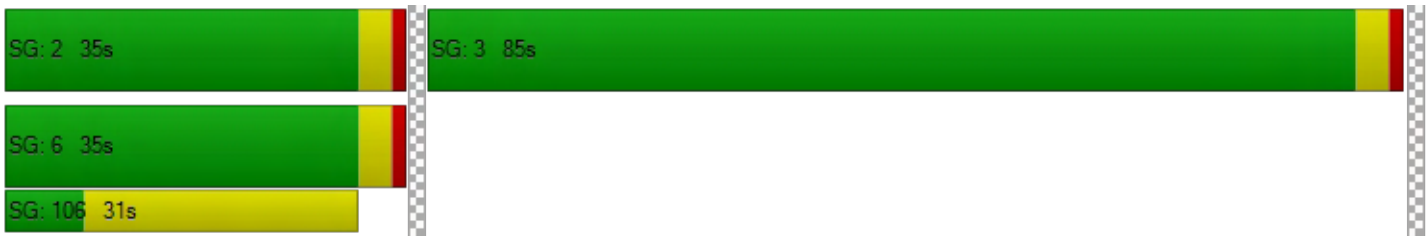
X, volume / capacity	0.20	0.41	0.21	0.23	0.80	0.48
d, Delay for Lane Group [s/veh]	4.28	3.31	2.30	2.40	60.94	53.53
Lane Group LOS	A	A	A	A	E	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.85	2.91	1.18	1.22	4.49	2.24
50th-Percentile Queue Length [ft/ln]	21.19	72.82	29.57	30.40	112.21	56.01
95th-Percentile Queue Length [veh/ln]	1.53	5.24	2.13	2.19	7.96	4.03
95th-Percentile Queue Length [ft/ln]	38.14	131.08	53.23	54.72	199.08	100.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.28	3.31	2.34	2.40	60.94	53.53
Movement LOS	A	A	A	A	E	D
d_A, Approach Delay [s/veh]	3.48		2.35		58.34	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	10.14					
Intersection LOS	B					
Intersection V/C	0.454					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Haun Rd (NS) at South Project Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	182	124	0	0	44
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	736	555	0	0	44
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	194	146	0	0	12
Total Analysis Volume [veh/h]	0	775	584	0	0	46
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.09
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	12.73
Movement LOS		A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.29
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	7.37
d_A, Approach Delay [s/veh]	0.00		0.00		12.73	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.778

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	51	32	319	19	43	39	435	20	55	441	467
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	120	0	21	24	0	0	0	0	139
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	51	32	439	19	64	63	435	20	55	441	606
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	13	8	113	5	16	16	112	5	14	113	155
Total Analysis Volume [veh/h]	34	52	33	450	19	66	65	446	21	56	452	622
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	27	0	11	27	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	74	74	74	74	74	74	74	74	74	74
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	14	14	5	33	5	33	33
g / C, Green / Cycle	0.09	0.09	0.09	0.19	0.19	0.07	0.44	0.06	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.02	0.15	0.15	0.04	0.25	0.03	0.24	0.39
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1728	1774	1848	1774	1863	1583
c, Capacity [veh/h]	153	160	136	340	331	124	818	115	815	693
d1, Uniform Delay [s]	31.72	32.00	31.77	28.73	28.73	33.46	15.49	33.64	15.55	19.40
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.73	1.16	0.91	4.29	4.41	3.41	0.63	3.17	0.59	4.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

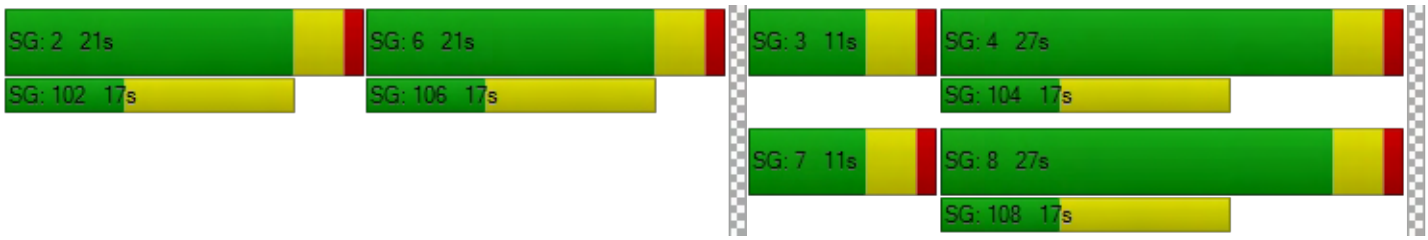
X, volume / capacity	0.22	0.32	0.24	0.80	0.80	0.52	0.57	0.49	0.55	0.90
d, Delay for Lane Group [s/veh]	32.44	33.16	32.68	33.02	33.14	36.87	16.12	36.81	16.15	23.89
Lane Group LOS	C	C	C	C	C	D	B	D	B	C
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.58	0.91	0.57	4.82	4.71	1.22	5.54	1.05	5.35	9.81
50th-Percentile Queue Length [ft/ln]	14.62	22.67	14.33	120.57	117.73	30.47	138.43	26.28	133.68	245.29
95th-Percentile Queue Length [veh/ln]	1.05	1.63	1.03	8.42	8.27	2.19	9.40	1.89	9.14	14.95
95th-Percentile Queue Length [ft/ln]	26.32	40.80	25.79	210.61	206.71	54.85	234.90	47.30	228.49	373.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.44	33.16	32.68	33.07	33.14	33.14	36.87	16.12	16.12	36.81	16.15	23.89
Movement LOS	C	C	C	C	C	C	D	B	B	D	B	C
d_A, Approach Delay [s/veh]	32.82			33.08			18.65			21.43		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	24.07											
Intersection LOS	C											
Intersection V/C	0.778											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.665

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	419	0	582	0	1721	464	0	1844	466
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	77	0	120	0	0	63	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	419	0	659	0	1841	464	0	1907	466
Peak Hour Factor	1.0000	1.0000	1.0000	0.9870	1.0000	0.9870	1.0000	0.9870	0.9870	1.0000	0.9870	0.9870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	106	0	167	0	466	0	0	483	0
Total Analysis Volume [veh/h]	0	0	0	425	0	668	0	1865	0	0	1932	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	61	0	0	0	79	0	0	79	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		98	98	98	98	98	98	98
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		27	27	27	63	63	63	63
g / C, Green / Cycle		0.27	0.27	0.27	0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate		0.21	0.23	0.23	0.28	0.00	0.38	0.00
s, saturation flow rate [veh/h]		1774	1612	1583	6765	1583	5074	1583
c, Capacity [veh/h]		483	439	431	4373	1023	3280	1023
d1, Uniform Delay [s]		32.73	33.60	33.78	8.48	0.00	9.92	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.42	4.11	4.63	0.07	0.00	0.17	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

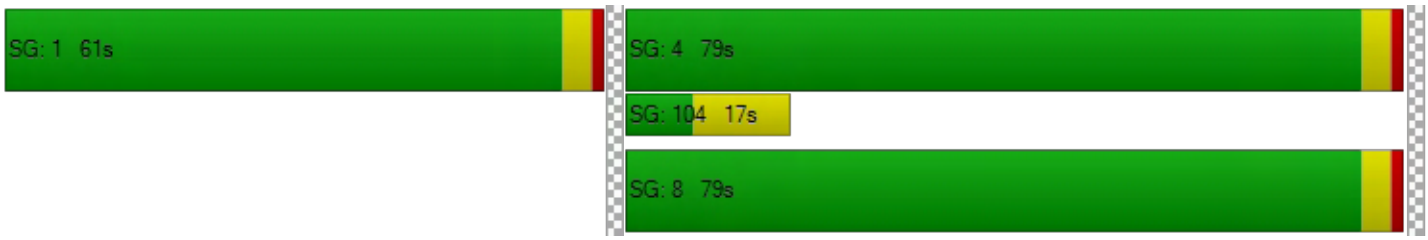
X, volume / capacity		0.75	0.83	0.85	0.43	0.00	0.59	0.00
d, Delay for Lane Group [s/veh]		35.15	37.72	38.41	8.54	0.00	10.09	0.00
Lane Group LOS		D	D	D	A	A	B	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		8.09	8.48	8.57	4.36	0.00	7.06	0.00
50th-Percentile Queue Length [ft/ln]		202.30	211.89	214.27	108.99	0.00	176.56	0.00
95th-Percentile Queue Length [veh/ln]		12.76	13.25	13.37	7.78	0.00	11.42	0.00
95th-Percentile Queue Length [ft/ln]		318.94	331.25	334.30	194.59	0.00	285.52	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	35.52	0.00	38.09	0.00	8.54	0.00	0.00	10.09	0.00
Movement LOS				D		D		A	A		B	A
d_A, Approach Delay [s/veh]	0.00			37.09			8.54			10.09		
Approach LOS	A			D			A			B		
d_I, Intersection Delay [s/veh]	15.53											
Intersection LOS	B											
Intersection V/C	0.665											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.900

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	392	0	155	0	497	238	413	680	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	46	74	0	139	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	392	0	155	0	543	312	413	819	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9470	1.0000	0.9470	1.0000	0.9470	0.9470	0.9470	0.9470	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	103	0	41	0	143	82	109	216	0
Total Analysis Volume [veh/h]	0	0	0	414	0	164	0	573	329	436	865	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	7	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	120	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	30	0	0	0	37	0	33	70	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		95	95	95	95	95	95
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		25	25	32	32	26	62
g / C, Green / Cycle		0.26	0.26	0.34	0.34	0.27	0.65
(v / s)_i Volume / Saturation Flow Rate		0.23	0.10	0.31	0.21	0.25	0.46
s, saturation flow rate [veh/h]		1774	1583	1863	1583	1774	1863
c, Capacity [veh/h]		465	415	635	540	481	1218
d1, Uniform Delay [s]		33.86	28.95	29.92	26.15	33.60	10.67
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		6.02	0.61	5.07	1.12	6.77	0.78
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.89	0.39	0.90	0.61	0.91	0.71
d, Delay for Lane Group [s/veh]		39.88	29.56	34.99	27.27	40.37	11.44
Lane Group LOS		D	C	C	C	D	B
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		9.76	3.11	12.94	6.21	10.39	10.40
50th-Percentile Queue Length [ft/ln]		244.03	77.84	323.49	155.29	259.66	259.89
95th-Percentile Queue Length [veh/ln]		14.88	5.60	18.84	10.30	15.67	15.68
95th-Percentile Queue Length [ft/ln]		372.12	140.11	470.97	257.48	391.79	392.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	39.88	0.00	29.56	0.00	34.99	27.27	40.37	11.44	0.00
Movement LOS				D		C		C	C	D	B	
d_A, Approach Delay [s/veh]	0.00			36.95			32.18			21.14		
Approach LOS	A			D			C			C		
d_I, Intersection Delay [s/veh]	28.00											
Intersection LOS	C											
Intersection V/C	0.900											

Sequence

Ring 1	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	517	0	746	0	0	0	0	1885	382	0	1690	480
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	58	62	0	63	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	517	0	746	0	0	0	0	1943	444	0	1753	480
Peak Hour Factor	0.9810	1.0000	0.9810	1.0000	1.0000	1.0000	1.0000	0.9810	0.9810	1.0000	0.9810	0.9810
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	132	0	190	0	0	0	0	495	0	0	447	0
Total Analysis Volume [veh/h]	527	0	760	0	0	0	0	1981	0	0	1787	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	81	0	0	0	0	0	0	59	0	0	59	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	126	126	126		126	126	126	126
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	39		80	80	80	80
g / C, Green / Cycle	0.31	0.31	0.31		0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.24	0.26	0.27		0.39	0.00	0.26	0.00
s, saturation flow rate [veh/h]	1774	1623	1583		5074	1583	6765	1583
c, Capacity [veh/h]	543	497	485		3199	998	4265	998
d1, Uniform Delay [s]	40.13	41.35	41.73		14.16	0.00	11.73	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.61	4.59	5.56		0.20	0.00	0.07	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

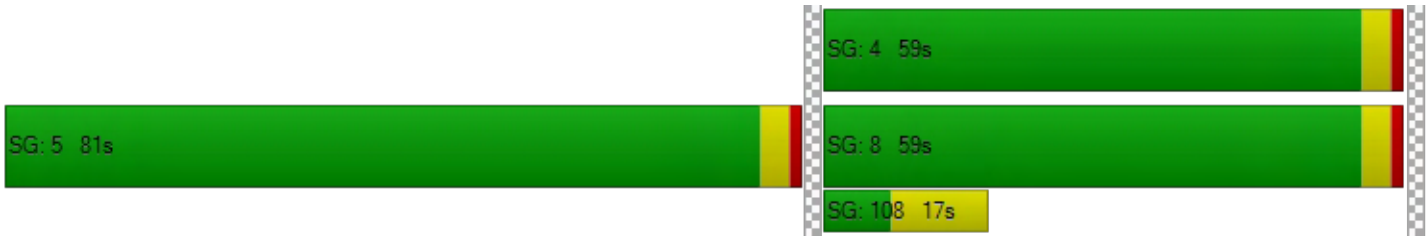
X, volume / capacity	0.79	0.86	0.88		0.62	0.00	0.42	0.00
d, Delay for Lane Group [s/veh]	42.74	45.94	47.29		14.36	0.00	11.80	0.00
Lane Group LOS	D	D	D		B	A	B	A
Critical Lane Group	No	No	Yes		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	12.54	13.15	13.37		10.97	0.00	6.14	0.00
50th-Percentile Queue Length [ft/ln]	313.39	328.63	334.37		274.28	0.00	153.39	0.00
95th-Percentile Queue Length [veh/ln]	18.34	19.09	19.37		16.40	0.00	10.20	0.00
95th-Percentile Queue Length [ft/ln]	458.55	477.28	484.32		410.08	0.00	254.94	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.34	0.00	46.70	0.00	0.00	0.00	0.00	14.36	0.00	0.00	11.80	0.00
Movement LOS	D		D					B	A		B	A
d_A, Approach Delay [s/veh]	45.32			0.00			14.36			11.80		
Approach LOS	D			A			B			B		
d_I, Intersection Delay [s/veh]	21.34											
Intersection LOS	C											
Intersection V/C	0.706											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	29.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.911

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	345	0	490	0	0	0	70	831	0	0	759	395
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	92	0	0	0	0	0	0	46	0	0	47	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	437	0	490	0	0	0	70	877	0	0	806	395
Peak Hour Factor	0.9650	1.0000	0.9650	1.0000	1.0000	1.0000	0.9650	0.9650	1.0000	1.0000	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	0	127	0	0	0	18	227	0	0	209	102
Total Analysis Volume [veh/h]	453	0	508	0	0	0	73	909	0	0	835	409
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	38	0	0	0	0	0	11	62	0	0	51	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	R
C, Cycle Length [s]	108	108		108	108	108	108
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	38	38		6	62	52	52
g / C, Green / Cycle	0.35	0.35		0.06	0.57	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.26	0.32		0.04	0.49	0.45	0.26
s, saturation flow rate [veh/h]	1774	1583		1774	1863	1863	1583
c, Capacity [veh/h]	625	558		102	1069	893	759
d1, Uniform Delay [s]	30.51	33.45		50.16	19.20	26.60	19.78
k, delay calibration	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.62	6.17		8.95	2.01	5.30	0.60
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.72	0.91		0.72	0.85	0.94	0.54
d, Delay for Lane Group [s/veh]	32.13	39.63		59.11	21.21	31.90	20.38
Lane Group LOS	C	D		E	C	C	C
Critical Lane Group	No	Yes		Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	10.36	13.35		2.19	18.20	20.62	7.16
50th-Percentile Queue Length [ft/ln]	259.10	333.85		54.73	454.96	515.48	178.99
95th-Percentile Queue Length [veh/ln]	15.64	19.35		3.94	25.19	28.07	11.55
95th-Percentile Queue Length [ft/ln]	391.09	483.67		98.52	629.86	701.66	288.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.13	0.00	39.63	0.00	0.00	0.00	59.11	21.21	0.00	0.00	31.90	20.38
Movement LOS	C		D				E	C			C	C
d_A, Approach Delay [s/veh]	36.09			0.00			24.03			28.11		
Approach LOS	D			A			C			C		
d_I, Intersection Delay [s/veh]	29.26											
Intersection LOS	C											
Intersection V/C	0.911											

Sequence

Ring 1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	44.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.834

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	693	108	189	28	78	147	145	1761	633	174	1352	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	0	0	0	0	6	7	36	15	0	42	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	708	108	189	28	78	153	152	1797	648	174	1394	27
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	183	28	49	7	20	40	39	465	168	45	361	7
Total Analysis Volume [veh/h]	733	112	196	29	81	158	157	1860	671	180	1443	28
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	37	23	0	35	21	0	35	69	0	13	47	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	182	182	182	182	182	182	182	182	182	182	182	182
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	42	53	53	5	16	16	11	96	96	12	98	98
g / C, Green / Cycle	0.23	0.29	0.29	0.03	0.09	0.09	0.06	0.53	0.53	0.07	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.21	0.06	0.12	0.01	0.07	0.07	0.05	0.37	0.42	0.05	0.27	0.27
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1755	1583	3445	5074	1583	3445	3547	1845
c, Capacity [veh/h]	800	537	456	102	150	136	202	2684	837	226	1901	989
d1, Uniform Delay [s]	68.31	49.15	52.72	86.61	82.05	82.17	84.69	31.95	35.12	84.03	27.01	27.01
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.21	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.75	0.19	0.64	1.51	10.88	13.01	6.38	0.33	3.55	6.36	0.21	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

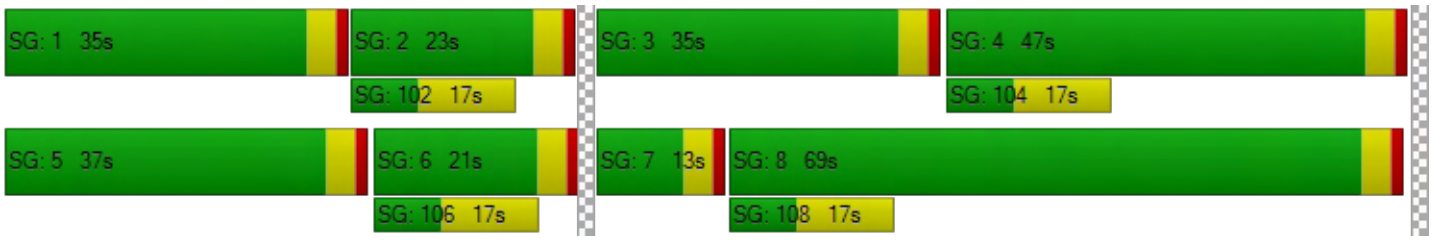
X, volume / capacity	0.92	0.21	0.43	0.28	0.83	0.84	0.78	0.69	0.80	0.80	0.51	0.51
d, Delay for Lane Group [s/veh]	73.06	49.34	53.36	88.12	92.92	95.18	91.08	32.27	38.66	90.39	27.22	27.42
Lane Group LOS	E	D	D	F	F	F	F	C	D	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	17.28	3.98	7.50	0.70	6.27	5.85	3.86	20.59	25.23	4.42	13.76	14.37
50th-Percentile Queue Length [ft/ln]	432.03	99.46	187.39	17.44	156.74	146.16	96.52	514.81	630.69	110.43	344.10	359.36
95th-Percentile Queue Length [veh/ln]	24.10	7.16	11.99	1.26	10.38	9.81	6.95	28.03	33.46	7.86	19.85	20.59
95th-Percentile Queue Length [ft/ln]	602.47	179.03	299.64	31.38	259.40	245.30	173.74	700.86	836.62	196.60	496.21	514.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	73.06	49.34	53.36	88.12	92.92	94.59	91.08	32.27	38.66	90.39	27.29	27.42
Movement LOS	E	D	D	F	F	F	F	C	D	F	C	C
d_A, Approach Delay [s/veh]	66.80			93.37			37.30			34.17		
Approach LOS	E			F			D			C		
d_I, Intersection Delay [s/veh]	44.48											
Intersection LOS	D											
Intersection V/C	0.834											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.466

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			Yes			Yes	

Volumes

Name												
Base Volume Input [veh/h]	0	410	88	191	431	0	0	0	0	71	0	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	410	88	191	431	0	0	0	0	71	0	125
Peak Hour Factor	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	111	24	52	116	0	0	0	0	19	0	34
Total Analysis Volume [veh/h]	0	442	95	206	465	0	0	0	0	77	0	135
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	41	0	38	79	0	0	0	0	21	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	31	31	31	31		31	31	31
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	6	17		6	6	6
g / C, Green / Cycle	0.23	0.23	0.19	0.55		0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.12	0.06	0.12	0.13		0.04	0.04	0.04
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1590	1583
c, Capacity [veh/h]	804	359	339	1943		342	306	305
d1, Uniform Delay [s]	10.52	9.80	11.40	3.63		10.48	10.50	10.50
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.59	0.39	1.76	0.06		0.32	0.37	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

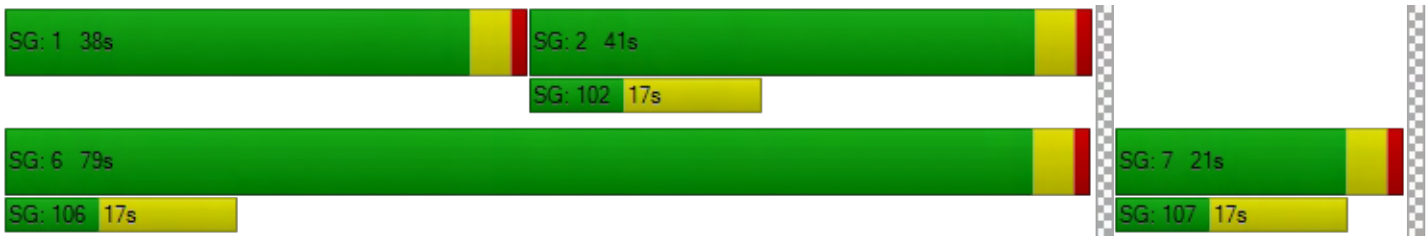
X, volume / capacity	0.55	0.26	0.61	0.24		0.22	0.23	0.23
d, Delay for Lane Group [s/veh]	11.11	10.19	13.16	3.69		10.80	10.87	10.87
Lane Group LOS	B	B	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.00	0.41	1.10	0.28		0.34	0.32	0.32
50th-Percentile Queue Length [ft/ln]	25.06	10.34	27.56	6.95		8.53	7.99	7.97
95th-Percentile Queue Length [veh/ln]	1.80	0.74	1.98	0.50		0.61	0.58	0.57
95th-Percentile Queue Length [ft/ln]	45.11	18.62	49.60	12.51		15.35	14.39	14.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	11.11	10.19	13.16	3.69	0.00	0.00	0.00	0.00	10.80	0.00	10.87
Movement LOS		B	B	B	A					B		B
d_A, Approach Delay [s/veh]	10.95			6.60			0.00			10.84		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	8.87											
Intersection LOS	A											
Intersection V/C	0.466											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.821

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	392	287	189	59	167	279	271	777	283	60	508	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	9	9	28	9	0	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	401	287	189	59	167	288	280	805	292	60	537	54
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	74	48	15	43	74	72	206	75	15	138	14
Total Analysis Volume [veh/h]	411	294	194	60	171	295	287	825	299	61	550	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	23	0	22	26	0	24	44	0	11	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	81	81	81	81	81	81	81	81	81	81	81	81
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	25	25	5	18	18	15	29	29	5	19	19
g / C, Green / Cycle	0.16	0.31	0.31	0.06	0.22	0.22	0.19	0.36	0.36	0.06	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.12	0.16	0.12	0.03	0.09	0.19	0.16	0.31	0.32	0.03	0.16	0.17
s, saturation flow rate [veh/h]	3445	1863	1583	1774	1863	1583	1774	1863	1697	1774	1863	1804
c, Capacity [veh/h]	534	579	492	114	409	348	338	678	617	115	444	430
d1, Uniform Delay [s]	32.94	22.94	22.01	36.84	27.25	30.42	31.79	23.95	24.15	36.83	28.25	28.26
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.37	0.69	0.51	3.75	0.68	5.76	6.00	3.36	4.15	3.79	1.94	2.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

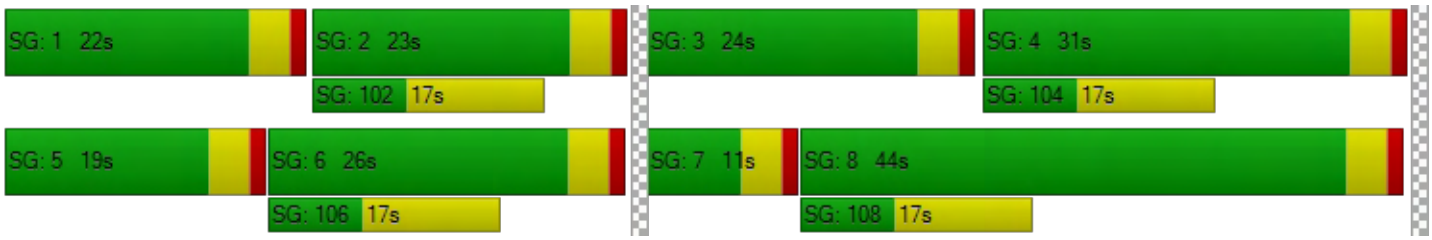
X, volume / capacity	0.77	0.51	0.39	0.53	0.42	0.85	0.85	0.86	0.88	0.53	0.69	0.69
d, Delay for Lane Group [s/veh]	35.31	23.63	22.53	40.59	27.93	36.18	37.79	27.31	28.30	40.61	30.19	30.29
Lane Group LOS	D	C	C	D	C	D	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.94	4.53	2.87	1.25	2.84	5.89	5.82	10.35	9.81	1.27	5.49	5.34
50th-Percentile Queue Length [ft/ln]	98.62	113.21	71.69	31.21	71.12	147.15	145.55	258.81	245.16	31.74	137.14	133.54
95th-Percentile Queue Length [veh/ln]	7.10	8.02	5.16	2.25	5.12	9.86	9.78	15.63	14.94	2.29	9.33	9.13
95th-Percentile Queue Length [ft/ln]	177.51	200.45	129.04	56.18	128.02	246.62	244.47	390.73	373.56	57.13	233.17	228.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.31	23.63	22.53	40.59	27.93	36.18	37.79	27.60	28.30	40.61	30.23	30.29
Movement LOS	D	C	C	D	C	D	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	28.73			34.00			29.82			31.19		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	30.43											
Intersection LOS	C											
Intersection V/C	0.821											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	21.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.816

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	105	177	226	200	219	114	121	958	60	312	1197	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	0	0	0	0	6	7	14	12	0	21	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	117	177	226	200	219	120	128	972	72	312	1218	165
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	46	59	52	57	31	33	253	19	81	317	43
Total Analysis Volume [veh/h]	122	184	235	208	228	125	133	1011	75	325	1267	172
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	21	19	29	29	24	43	0	17	36	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	68	68	68	68	68	68	68	68	68	68	68	68
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	7	23	10	11	21	6	24	24	12	29	29
g / C, Green / Cycle	0.09	0.10	0.33	0.15	0.16	0.31	0.09	0.35	0.35	0.17	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.04	0.05	0.15	0.12	0.06	0.08	0.04	0.29	0.30	0.09	0.25	0.11
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1818	3445	5074	1583
c, Capacity [veh/h]	318	362	524	262	558	490	324	646	631	587	2147	670
d1, Uniform Delay [s]	29.31	29.18	18.05	28.24	26.04	17.75	29.29	20.76	20.77	26.07	15.22	12.81
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.76	1.11	0.60	5.42	0.48	0.27	0.83	3.26	3.36	0.82	0.26	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

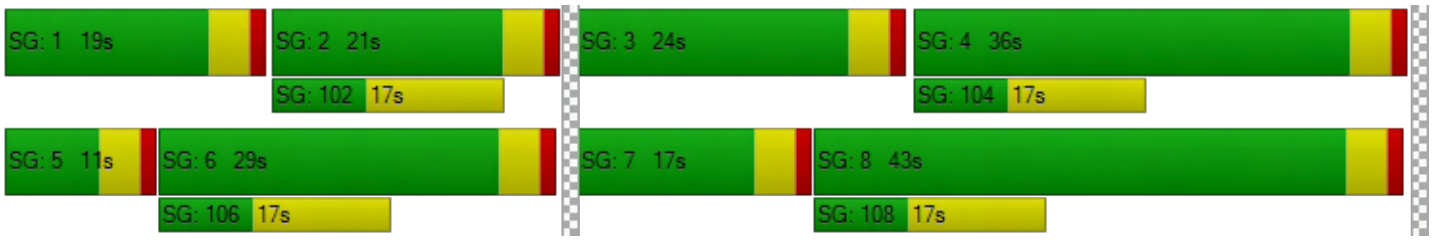
X, volume / capacity	0.38	0.51	0.45	0.79	0.41	0.25	0.41	0.85	0.85	0.55	0.59	0.26
d, Delay for Lane Group [s/veh]	30.07	30.29	18.65	33.67	26.52	18.02	30.12	24.01	24.14	26.89	15.48	13.01
Lane Group LOS	C	C	B	C	C	B	C	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.94	1.43	2.80	3.54	1.64	1.43	1.03	8.02	7.86	2.38	4.61	1.60
50th-Percentile Queue Length [ft/ln]	23.58	35.83	70.12	88.42	40.98	35.68	25.75	200.48	196.53	59.54	115.28	40.01
95th-Percentile Queue Length [veh/ln]	1.70	2.58	5.05	6.37	2.95	2.57	1.85	12.66	12.46	4.29	8.13	2.88
95th-Percentile Queue Length [ft/ln]	42.44	64.49	126.22	159.15	73.76	64.23	46.34	316.59	311.49	107.17	203.33	72.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.07	30.29	18.65	33.67	26.52	18.02	30.12	24.07	24.14	26.89	15.48	13.01
Movement LOS	C	C	B	C	C	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	25.18			27.27			24.73			17.34		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	21.95											
Intersection LOS	C											
Intersection V/C	0.816											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



EXISTING PLUS PROJECT – WITH IMPROVEMENTS

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME.vistro

Scenario 3 Existing Plus Project Morning Peak Hour - With Improvements

Report File: C:\...\AMEPI.pdf

1/15/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Bradley Rd (NS) at Craig Ave (EW)	Signalized	HCM 2010	EB Left	0.867	25.5	C
10	Haun Rd (NS) at Holland Road (EW)	Signalized	HCM 2010	SB Left	0.786	19.9	B
11	Haun Road (NS) at Garbani Road (EW)	Signalized	HCM 2010	WB Left	0.928	38.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.867

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	105	296	0	2	252	175	103	2	51	1	6	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	64	0	0	54	0	0	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	360	0	2	306	175	103	2	56	1	6	23
Peak Hour Factor	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	120	0	1	102	59	34	1	19	0	2	8
Total Analysis Volume [veh/h]	149	482	0	3	410	234	138	3	75	1	8	31
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	60	0	0	39	0	0	21	0	0	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	C	C
C, Cycle Length [s]	67	67	67	67	67
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	18	18	12	12
g / C, Green / Cycle	0.38	0.27	0.27	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.34	0.22	0.15	0.15	0.02
s, saturation flow rate [veh/h]	1841	1862	1583	1460	1683
c, Capacity [veh/h]	700	494	420	346	353
d1, Uniform Delay [s]	19.79	23.48	21.44	26.80	23.48
k, delay calibration	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.61	3.82	1.16	1.85	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

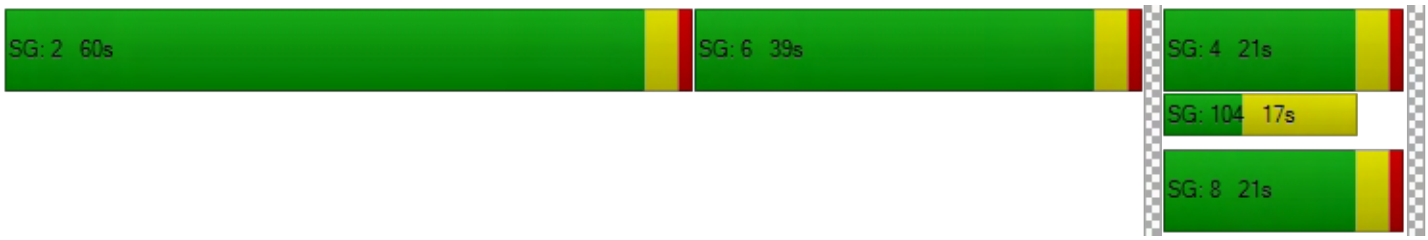
X, volume / capacity	0.90	0.84	0.56	0.62	0.11
d, Delay for Lane Group [s/veh]	24.40	27.30	22.60	28.64	23.62
Lane Group LOS	C	C	C	C	C
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.29	6.31	3.13	3.35	0.53
50th-Percentile Queue Length [ft/ln]	232.24	157.66	78.17	83.80	13.20
95th-Percentile Queue Length [veh/ln]	14.29	10.42	5.63	6.03	0.95
95th-Percentile Queue Length [ft/ln]	357.20	260.61	140.70	150.85	23.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.40	24.40	24.40	27.30	27.30	22.60	28.64	28.64	28.64	23.62	23.62	23.62
Movement LOS	C	C	C	C	C	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	24.40			25.60			28.64			23.62		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.48											
Intersection LOS	C											
Intersection V/C	0.867											

Sequence

Ring 1	2	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	Signalized	Delay (sec / veh):	19.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	249	182	0	4	167	324	238	4	192	3	5	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	104	0	0	78	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	249	286	0	4	245	324	238	4	192	3	5	3
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	87	0	1	75	99	73	1	59	1	2	1
Total Analysis Volume [veh/h]	304	349	0	5	299	395	290	5	234	4	6	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	19	20	0	26	27	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	30	1	18	18	17	17	17	17
g / C, Green / Cycle	0.21	0.50	0.01	0.30	0.30	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.17	0.19	0.00	0.16	0.25	0.21	0.00	0.15	0.01
s, saturation flow rate [veh/h]	1774	1863	1774	1863	1583	1399	1863	1583	1668
c, Capacity [veh/h]	371	929	17	557	474	473	542	461	563
d1, Uniform Delay [s]	22.59	9.24	29.45	17.51	19.58	21.13	15.08	17.65	15.16
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.50	0.25	9.64	0.80	3.91	1.30	0.01	0.87	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.38	0.30	0.54	0.83	0.61	0.01	0.51	0.02
d, Delay for Lane Group [s/veh]	27.09	9.50	39.08	18.31	23.49	22.42	15.09	18.51	15.18
Lane Group LOS	C	A	D	B	C	C	B	B	B
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	4.22	2.40	0.11	3.24	5.12	3.66	0.05	2.55	0.13
50th-Percentile Queue Length [ft/ln]	105.62	60.08	2.82	81.08	128.07	91.42	1.14	63.72	3.20
95th-Percentile Queue Length [veh/ln]	7.60	4.33	0.20	5.84	8.83	6.58	0.08	4.59	0.23
95th-Percentile Queue Length [ft/ln]	189.90	108.14	5.07	145.94	220.87	164.56	2.05	114.70	5.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.09	9.50	9.50	39.08	18.31	23.49	22.42	15.09	18.51	15.18	15.18	15.18
Movement LOS	C	A	A	D	B	C	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	17.69			21.39			20.62			15.18		
Approach LOS	B			C			C			B		
d_I, Intersection Delay [s/veh]	19.85											
Intersection LOS	B											
Intersection V/C	0.786											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Signalized	Delay (sec / veh):	38.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.928

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	347	320	0	0	330	26	15	0	264	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	38	65	0	0	79	13	49	0	67	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	385	385	0	0	409	39	64	0	331	1	0	1
Peak Hour Factor	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	124	124	0	0	132	13	21	0	107	0	0	0
Total Analysis Volume [veh/h]	497	497	0	0	528	50	83	0	428	1	0	1
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	41	38	0	43	40	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C
C, Cycle Length [s]	119	119	119	119	119	119	119	119	119
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	36	72	0	36	36	35	35	35	35
g / C, Green / Cycle	0.30	0.61	0.00	0.31	0.31	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.28	0.27	0.00	0.28	0.03	0.06	0.27	0.00	0.00
s, saturation flow rate [veh/h]	1774	1863	1774	1863	1583	1410	1583	956	1583
c, Capacity [veh/h]	534	1130	0	569	483	450	463	73	463
d1, Uniform Delay [s]	40.36	12.57	0.00	40.07	29.65	33.10	40.79	57.97	29.78
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.77	0.27	0.00	7.25	0.09	0.20	8.19	0.07	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

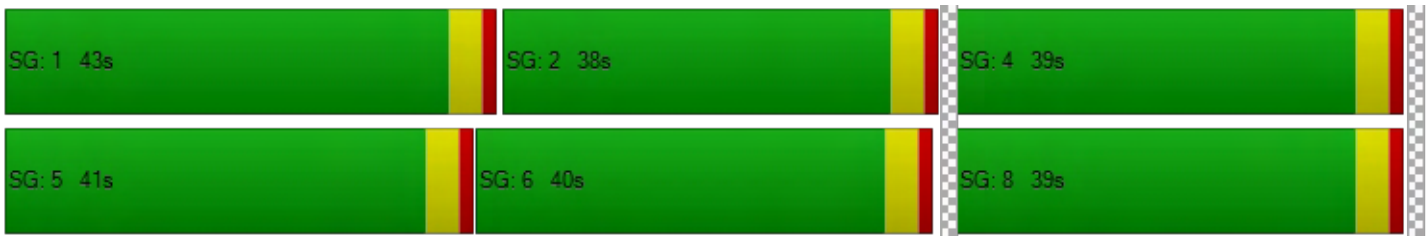
X, volume / capacity	0.93	0.44	0.00	0.93	0.10	0.18	0.92	0.01	0.00
d, Delay for Lane Group [s/veh]	48.13	12.84	0.00	47.32	29.74	33.29	48.97	58.04	29.78
Lane Group LOS	D	B	A	D	C	C	D	E	C
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	15.07	6.93	0.00	15.90	1.05	1.87	13.04	0.03	0.02
50th-Percentile Queue Length [ft/ln]	376.86	173.26	0.00	397.59	26.16	46.87	326.11	0.78	0.52
95th-Percentile Queue Length [veh/ln]	21.44	11.25	0.00	22.44	1.88	3.37	18.97	0.06	0.04
95th-Percentile Queue Length [ft/ln]	536.04	281.19	0.00	561.10	47.09	84.36	474.19	1.40	0.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.13	12.84	12.84	0.00	47.32	29.74	33.29	48.97	48.97	58.04	29.78	29.78
Movement LOS	D	B	B	A	D	C	C	D	D	E	C	C
d_A, Approach Delay [s/veh]	30.48			45.80			46.43			43.91		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	38.65											
Intersection LOS	D											
Intersection V/C	0.928											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME.vistro

Scenario 3 Existing Plus Project Evening Peak Hour - With Improvements

Report File: C:\...\PMEPI.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Bradley Rd (NS) at Craig Ave (EW)	Signalized	HCM 2010	NB Thru	0.576	11.7	B
10	Haun Rd (NS) at Holland Road (EW)	Signalized	HCM 2010	SB Left	0.756	16.9	B
11	Haun Road (NS) at Garbani Road (EW)	Signalized	HCM 2010	WB Left	0.756	12.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	11.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.576

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	39	55	2	3	80	98	115	1	48	0	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	110	0	0	124	0	0	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	165	2	3	204	98	115	1	59	0	1	4
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	43	1	1	53	25	30	0	15	0	0	1
Total Analysis Volume [veh/h]	44	170	2	3	210	101	119	1	61	0	1	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	22	0	0	22	0	0	21	0	0	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	C	C
C, Cycle Length [s]	30	30	30	30	30
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	7	7	6	6
g / C, Green / Cycle	0.20	0.22	0.22	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.12	0.11	0.06	0.11	0.00
s, saturation flow rate [veh/h]	1841	1861	1583	1576	1271
c, Capacity [veh/h]	367	407	346	491	356
d1, Uniform Delay [s]	11.03	10.47	9.90	11.18	10.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.51	1.04	0.46	0.46	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

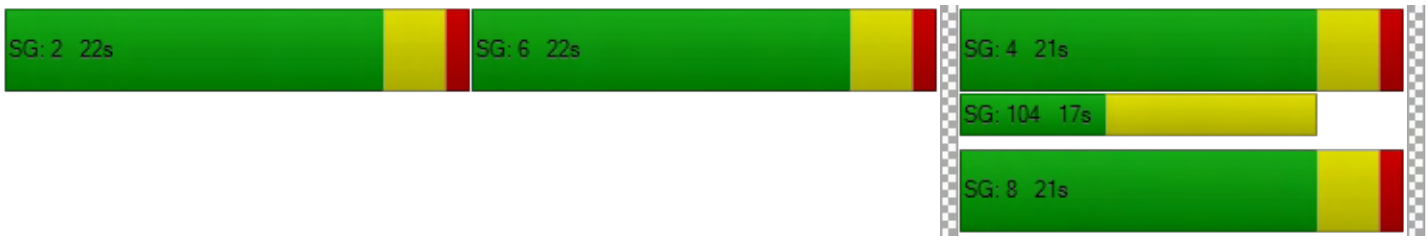
X, volume / capacity	0.59	0.52	0.29	0.37	0.01
d, Delay for Lane Group [s/veh]	12.54	11.51	10.36	11.64	10.08
Lane Group LOS	B	B	B	B	B
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.09	1.00	0.44	0.85	0.02
50th-Percentile Queue Length [ft/ln]	27.24	24.92	10.97	21.30	0.53
95th-Percentile Queue Length [veh/ln]	1.96	1.79	0.79	1.53	0.04
95th-Percentile Queue Length [ft/ln]	49.03	44.86	19.74	38.35	0.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.54	12.54	12.54	11.51	11.51	10.36	11.64	11.64	11.64	10.08	10.08	10.08
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	12.54			11.14			11.64			10.08		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	11.68											
Intersection LOS	B											
Intersection V/C	0.576											

Sequence

Ring 1	2	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.756

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	241	255	2	4	258	293	245	2	118	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	157	0	0	179	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	241	412	2	4	437	293	245	2	118	0	0	4
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	110	1	1	116	78	65	1	31	0	0	1
Total Analysis Volume [veh/h]	256	438	2	4	465	312	261	2	126	0	0	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	19	28	0	23	32	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	C
C, Cycle Length [s]	51	51	51	51	51	51	51	51	51
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	25	0	16	16	14	14	14	14
g / C, Green / Cycle	0.18	0.49	0.01	0.31	0.31	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.14	0.24	0.00	0.25	0.20	0.19	0.00	0.08	0.00
s, saturation flow rate [veh/h]	1774	1861	1774	1863	1583	1407	1863	1583	1583
c, Capacity [veh/h]	328	908	14	578	492	463	505	430	499
d1, Uniform Delay [s]	19.97	8.84	25.39	16.30	15.23	18.73	13.68	14.84	13.70
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.03	0.40	11.40	2.68	1.36	1.08	0.00	0.38	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.48	0.29	0.80	0.63	0.56	0.00	0.29	0.01
d, Delay for Lane Group [s/veh]	24.00	9.24	36.79	18.98	16.60	19.80	13.68	15.22	13.70
Lane Group LOS	C	A	D	B	B	B	B	B	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.99	2.66	0.09	4.75	2.90	2.73	0.02	1.07	0.03
50th-Percentile Queue Length [ft/ln]	74.72	66.62	2.21	118.76	72.38	68.31	0.39	26.80	0.77
95th-Percentile Queue Length [veh/ln]	5.38	4.80	0.16	8.33	5.21	4.92	0.03	1.93	0.06
95th-Percentile Queue Length [ft/ln]	134.50	119.91	3.98	208.13	130.28	122.95	0.70	48.24	1.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.00	9.24	9.24	36.79	18.98	16.60	19.80	13.68	15.22	13.70	13.70	13.70
Movement LOS	C	A	A	D	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	14.67			18.12			18.29			13.70		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	16.86											
Intersection LOS	B											
Intersection V/C	0.756											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Signalized	Delay (sec / veh):	12.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.756

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	82	472	0	0	349	13	7	0	82	4	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	118	130	0	0	158	44	54	0	106	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	602	0	0	507	57	61	0	188	4	0	0
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	155	0	0	130	15	16	0	48	1	0	0
Total Analysis Volume [veh/h]	205	618	0	0	521	59	63	0	193	4	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	28	73	0	18	63	0	0	29	0	0	29	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C
C, Cycle Length [s]	38	38	38	38	38	38	38	38	38
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	19	0	13	13	7	7	7	7
g / C, Green / Cycle	0.16	0.51	0.00	0.35	0.35	0.17	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.12	0.33	0.00	0.28	0.04	0.04	0.12	0.00	0.00
s, saturation flow rate [veh/h]	1774	1863	1774	1863	1583	1412	1583	1185	1863
c, Capacity [veh/h]	290	951	0	646	549	366	277	199	326
d1, Uniform Delay [s]	15.09	6.83	0.00	11.29	8.45	15.28	14.80	18.80	0.00
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.14	0.75	0.00	2.43	0.09	0.22	3.17	0.04	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.65	0.00	0.81	0.11	0.17	0.70	0.02	0.00
d, Delay for Lane Group [s/veh]	18.23	7.59	0.00	13.72	8.53	15.50	17.96	18.84	0.00
Lane Group LOS	B	A	A	B	A	B	B	B	A
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.63	2.32	0.00	3.34	0.26	0.44	1.53	0.03	0.00
50th-Percentile Queue Length [ft/ln]	40.79	57.89	0.00	83.55	6.48	11.05	38.15	0.82	0.00
95th-Percentile Queue Length [veh/ln]	2.94	4.17	0.00	6.02	0.47	0.80	2.75	0.06	0.00
95th-Percentile Queue Length [ft/ln]	73.42	104.20	0.00	150.39	11.66	19.88	68.67	1.47	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.23	7.59	7.59	0.00	13.72	8.53	15.50	17.96	17.96	18.84	0.00	0.00
Movement LOS	B	A	A	A	B	A	B	B	B	B	A	A
d_A, Approach Delay [s/veh]	10.24			13.19			17.36			18.84		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	12.39											
Intersection LOS	B											
Intersection V/C	0.756											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

EXISTING PLUS AMBIENT GROWTH

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME.vistro

Scenario 4 Existing Plus Ambient Growth Morning Peak Hour

Report File: C:\...\AMEA.pdf

1/15/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.828	31.1	C
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.910	40.9	D
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	NB Thru	0.902	25.0	D
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	WB Right	0.713	17.8	C
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Left	0.832	25.4	C
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	SB Right	0.853	28.1	D
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	WB Left	0.080	305.3	F
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.881	33.2	C
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.615	10.3	B
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.710	6.4	A
18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.722	10.1	B
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.781	3.1	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.863	33.4	C
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.475	9.2	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.776	25.1	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.802	28.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	31.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.828

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	109	200	378	166	239	58	73	1097	67	337	764	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	208	393	173	249	60	76	1141	70	350	795	113
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	60	113	50	72	17	22	328	20	101	229	33
Total Analysis Volume [veh/h]	130	239	452	199	287	69	87	1313	81	403	915	130
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	24	24	19	29	0	30	37	0	20	27	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	99	99	99	99	99	99	99	99	99	99	99	99
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	16	43	13	20	20	6	30	30	23	47	47
g / C, Green / Cycle	0.09	0.16	0.44	0.13	0.21	0.21	0.06	0.31	0.31	0.23	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.07	0.13	0.29	0.11	0.10	0.10	0.05	0.26	0.26	0.12	0.18	0.08
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1740	1774	3547	1808	3445	5074	1583
c, Capacity [veh/h]	164	305	690	238	382	357	114	1093	557	799	2414	753
d1, Uniform Delay [s]	43.89	39.66	21.99	41.71	34.62	34.67	45.48	31.97	31.97	33.00	16.56	14.79
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.21	4.45	1.06	7.52	0.93	1.02	9.91	1.88	3.61	0.49	0.10	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

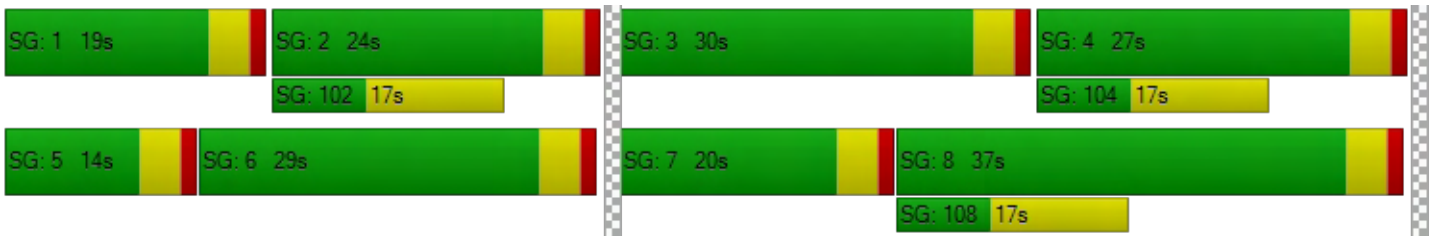
X, volume / capacity	0.79	0.78	0.65	0.84	0.48	0.48	0.76	0.84	0.84	0.50	0.38	0.17
d, Delay for Lane Group [s/veh]	52.10	44.11	23.05	49.23	35.55	35.69	55.39	33.85	35.57	33.49	16.66	14.90
Lane Group LOS	D	D	C	D	D	D	E	C	D	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.46	5.87	8.16	5.17	3.93	3.73	2.40	10.32	10.79	4.20	4.30	1.65
50th-Percentile Queue Length [ft/ln]	86.47	146.79	203.94	129.24	98.36	93.33	59.91	258.01	269.71	105.00	107.41	41.24
95th-Percentile Queue Length [veh/ln]	6.23	9.85	12.84	8.90	7.08	6.72	4.31	15.59	16.18	7.56	7.70	2.97
95th-Percentile Queue Length [ft/ln]	155.65	246.14	321.05	222.46	177.04	168.00	107.85	389.73	404.38	189.00	192.39	74.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.10	44.11	23.05	49.23	35.60	35.69	55.39	34.36	35.57	33.49	16.66	14.90
Movement LOS	D	D	C	D	D	D	E	C	D	C	B	B
d_A, Approach Delay [s/veh]	33.78			40.50			35.66			21.19		
Approach LOS	C			D			D			C		
d_I, Intersection Delay [s/veh]	31.06											
Intersection LOS	C											
Intersection V/C	0.828											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	40.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.910

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	48	318	164	66	426	204	106	228	182	174	174	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	331	171	69	443	212	110	237	189	181	181	114
Peak Hour Factor	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	96	50	20	128	61	32	69	55	52	52	33
Total Analysis Volume [veh/h]	58	384	198	80	513	246	127	275	219	210	210	132
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	38	0	11	38	0	14	34	0	17	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	113	113	113	113	113	113	113	113	113	113
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	40	7	41	41	10	35	16	40	40
g / C, Green / Cycle	0.05	0.35	0.06	0.36	0.36	0.09	0.31	0.14	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.03	0.33	0.05	0.28	0.16	0.07	0.29	0.12	0.11	0.08
s, saturation flow rate [veh/h]	1774	1757	1774	1863	1583	1774	1728	1774	1863	1583
c, Capacity [veh/h]	92	621	104	671	570	158	532	245	665	565
d1, Uniform Delay [s]	52.48	35.30	52.40	31.90	27.37	50.48	37.89	47.60	26.33	25.49
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.85	7.38	11.08	1.85	0.52	9.08	7.67	8.41	0.27	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

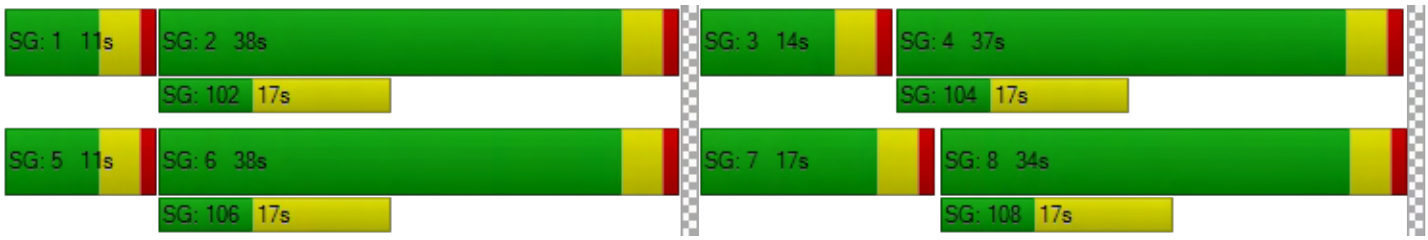
X, volume / capacity	0.63	0.94	0.77	0.76	0.43	0.80	0.93	0.86	0.32	0.23
d, Delay for Lane Group [s/veh]	59.34	42.69	63.48	33.75	27.88	59.55	45.56	56.01	26.60	25.70
Lane Group LOS	E	D	E	C	C	E	D	E	C	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.78	16.39	2.55	12.50	5.08	3.91	14.14	6.32	4.14	2.52
50th-Percentile Queue Length [ft/ln]	44.59	409.82	63.75	312.38	127.01	97.70	353.52	157.94	103.42	62.99
95th-Percentile Queue Length [veh/ln]	3.21	23.03	4.59	18.29	8.78	7.03	20.31	10.44	7.45	4.54
95th-Percentile Queue Length [ft/ln]	80.26	575.83	114.74	457.31	219.42	175.86	507.69	260.99	186.15	113.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.34	42.69	42.69	63.48	33.75	27.88	59.55	45.56	45.56	56.01	26.60	25.70
Movement LOS	E	D	D	E	C	C	E	D	D	E	C	C
d_A, Approach Delay [s/veh]	44.20			34.86			48.42			37.57		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	40.85											
Intersection LOS	D											
Intersection V/C	0.910											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	25.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.902

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	105	296	0	2	252	175	103	2	51	1	6	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	308	0	2	262	182	107	2	53	1	6	24
Peak Hour Factor	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	103	0	1	88	61	36	1	18	0	2	8
Total Analysis Volume [veh/h]	146	412	0	3	351	244	143	3	71	1	8	32
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	618	574	648	532	508
Degree of Utilization, x	0.90	0.62	0.38	0.41	0.08

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	11.17	4.20	1.75	1.97	0.26
95th-Percentile Queue Length [ft]	279.22	104.93	43.84	49.24	6.56
Approach Delay [s/veh]	40.16	15.72		14.36	10.71
Approach LOS	E	C		B	B
Intersection Delay [s/veh]	25.01				
Intersection LOS	D				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	17.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	0	278	1	1	2	2	0	0	6	364
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	0	289	1	1	2	2	0	0	6	379
Peak Hour Factor	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	0	98	0	0	1	1	0	0	2	128
Total Analysis Volume [veh/h]	0	4	0	391	1	1	3	3	0	0	8	512
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	599	655	590	630	718
Degree of Utilization, x	0.01	0.60	0.01	0.01	0.71

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.02	4.01	0.03	0.04	6.03
95th-Percentile Queue Length [ft]	0.50	100.28	0.77	0.96	150.84
Approach Delay [s/veh]	9.04	16.40	9.17	18.98	
Approach LOS	A	C	A	C	
Intersection Delay [s/veh]	17.77				
Intersection LOS	C				

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.832

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	77	569	110	38	30	121	1432	206	709	1057	322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	80	592	114	40	31	126	1489	214	737	1099	335
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	21	156	30	11	8	33	393	56	194	290	88
Total Analysis Volume [veh/h]	148	84	624	120	42	33	133	1571	226	777	1159	353
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	21	12	22	0	53	55	0	52	54	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	103	103	103	103	103	103	103	103	103	103	103	103
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	10	43	7	10	10	7	42	42	29	64	64
g / C, Green / Cycle	0.07	0.09	0.41	0.07	0.09	0.09	0.07	0.41	0.41	0.28	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.04	0.05	0.22	0.03	0.02	0.02	0.04	0.31	0.14	0.23	0.29	0.30
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1606	3445	5074	1583	3445	3547	1654
c, Capacity [veh/h]	230	177	1154	226	174	150	228	2063	644	959	2195	1024
d1, Uniform Delay [s]	47.11	44.41	23.03	46.83	43.42	43.51	46.95	26.39	21.26	34.79	10.54	10.71
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.01	1.98	0.40	1.94	0.63	0.83	2.36	0.60	0.33	1.69	0.15	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

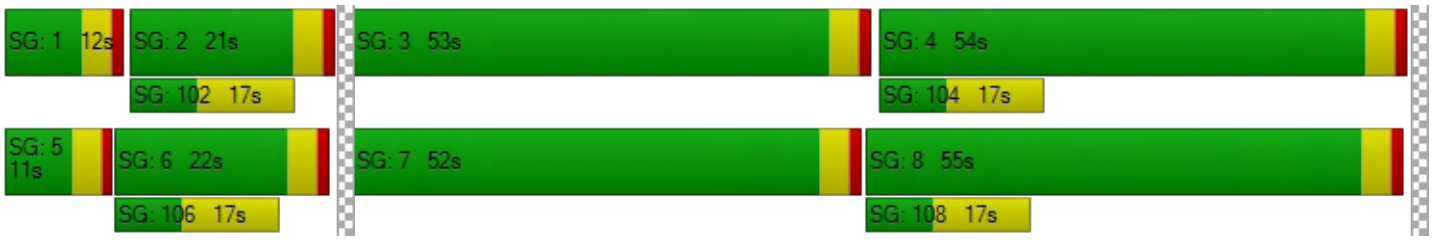
X, volume / capacity	0.64	0.48	0.54	0.53	0.22	0.24	0.58	0.76	0.35	0.81	0.46	0.48
d, Delay for Lane Group [s/veh]	50.12	46.40	23.42	48.77	44.05	44.34	49.31	26.99	21.58	36.48	10.70	11.06
Lane Group LOS	D	D	C	D	D	D	D	C	C	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.95	2.13	5.69	1.55	0.94	0.90	1.73	10.86	3.79	9.18	5.81	5.77
50th-Percentile Queue Length [ft/ln]	48.65	53.28	142.18	38.75	23.55	22.45	43.27	271.42	94.80	229.43	145.36	144.18
95th-Percentile Queue Length [veh/ln]	3.50	3.84	9.60	2.79	1.70	1.62	3.12	16.26	6.83	14.15	9.77	9.71
95th-Percentile Queue Length [ft/ln]	87.56	95.90	239.95	69.76	42.39	40.41	77.88	406.52	170.65	353.63	244.22	242.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.12	46.40	23.42	48.77	44.08	44.34	49.31	26.99	21.58	36.48	10.74	11.06
Movement LOS	D	D	C	D	D	D	D	C	C	D	B	B
d_A, Approach Delay [s/veh]	30.29			47.01			27.90			19.53		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	25.36											
Intersection LOS	C											
Intersection V/C	0.832											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	28.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.853

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	249	182	0	4	167	324	238	4	192	3	5	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	259	189	0	4	174	337	248	4	200	3	5	3
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	58	0	1	53	103	76	1	61	1	2	1
Total Analysis Volume [veh/h]	316	230	0	5	212	411	302	5	244	4	6	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	408	434	414	440	482	435	464	510	363
Degree of Utilization, x	0.77	0.53	0.01	0.48	0.85	0.69	0.01	0.48	0.04

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	6.54	3.03	0.04	2.56	8.76	5.19	0.03	2.56	0.12
95th-Percentile Queue Length [ft]	163.61	75.65	0.92	64.03	219.02	129.69	0.82	63.97	3.00
Approach Delay [s/veh]	29.15		32.50			22.40			13.32
Approach LOS	D		D			C			B
Intersection Delay [s/veh]	28.09								
Intersection LOS	D								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	305.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.080

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	347	320	0	0	330	26	15	0	264	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	361	333	0	0	343	27	16	0	275	1	0	1
Peak Hour Factor	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	108	0	0	111	9	5	0	89	0	0	0
Total Analysis Volume [veh/h]	466	430	0	0	443	35	21	0	355	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.43	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.58	0.08	0.00	0.00
d_M, Delay for Movement [s/veh]	10.80	0.00	0.00	8.19	0.00	0.00	164.96	92.37	18.55	305.26	101.40	23.39
Movement LOS	B	A	A	A	A	A	F	F	C	F	F	C
95th-Percentile Queue Length [veh/ln]	2.20	0.00	0.00	0.00	0.00	0.00	1.84	3.68	3.68	0.24	0.24	0.24
95th-Percentile Queue Length [ft/ln]	54.96	0.00	0.00	0.00	0.00	0.00	45.89	92.08	92.08	6.12	6.12	6.12
d_A, Approach Delay [s/veh]	5.62			0.00			26.73			164.32		
Approach LOS	A			A			D			F		
d_I, Intersection Delay [s/veh]	8.80											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	33.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.881

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	23	112	24	528	45	39	66	423	9	53	341	485
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	116	25	549	47	41	69	440	9	55	355	504
Peak Hour Factor	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	36	8	170	15	13	21	136	3	17	110	156
Total Analysis Volume [veh/h]	30	143	31	679	58	51	85	544	11	68	439	623
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	25	0	11	41	0	13	43	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	101	101	101	101	101	101	101	101	101	101	101
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	26	26	6	43	43	6	43	43
g / C, Green / Cycle	0.10	0.10	0.10	0.25	0.25	0.06	0.43	0.43	0.06	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.02	0.08	0.02	0.22	0.22	0.05	0.15	0.15	0.04	0.12	0.39
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1759	1774	1863	1850	1774	3547	1583
c, Capacity [veh/h]	176	185	157	453	449	111	799	794	105	1508	673
d1, Uniform Delay [s]	41.89	44.61	42.00	36.23	36.26	46.81	19.44	19.44	46.73	19.13	27.64
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	6.77	0.61	5.40	5.56	10.22	0.26	0.26	6.64	0.11	6.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

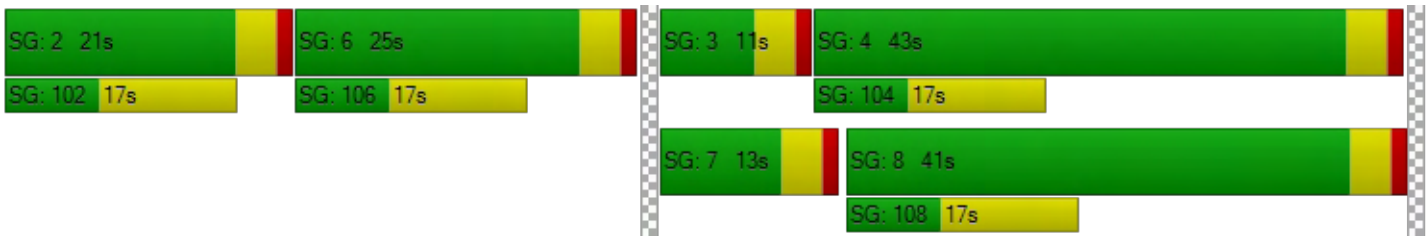
X, volume / capacity	0.17	0.77	0.20	0.87	0.88	0.76	0.35	0.35	0.65	0.29	0.93
d, Delay for Lane Group [s/veh]	42.34	51.37	42.61	41.63	41.82	57.03	19.70	19.70	53.38	19.24	33.69
Lane Group LOS	D	D	D	D	D	E	B	B	D	B	C
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.71	3.83	0.74	9.87	9.84	2.41	4.37	4.35	1.86	3.35	14.79
50th-Percentile Queue Length [ft/ln]	17.70	95.71	18.43	246.78	246.11	60.35	109.34	108.69	46.55	83.83	369.79
95th-Percentile Queue Length [veh/ln]	1.27	6.89	1.33	15.02	14.99	4.35	7.80	7.77	3.35	6.04	21.10
95th-Percentile Queue Length [ft/ln]	31.86	172.27	33.17	375.60	374.76	108.63	195.08	194.18	83.79	150.90	527.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.34	51.37	42.61	41.71	41.82	41.82	57.03	19.70	19.70	53.38	19.24	33.69
Movement LOS	D	D	D	D	D	D	E	B	B	D	B	C
d_A, Approach Delay [s/veh]	48.71			41.72			24.66			29.26		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	33.19											
Intersection LOS	C											
Intersection V/C	0.881											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	10.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	333	0	439	0	1489	630	0	1666	1057
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.00	1.04	1.00	1.04	1.04	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	346	0	457	0	1549	655	0	1733	1099
Peak Hour Factor	1.0000	1.0000	1.0000	0.9340	1.0000	0.9340	1.0000	0.9340	0.9340	1.0000	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	93	0	122	0	415	0	0	464	0
Total Analysis Volume [veh/h]	0	0	0	370	0	489	0	1658	0	0	1855	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	84	0	0	0	56	0	0	56	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		68	68	68	68	68	68	68
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		16	16	16	45	45	45	45
g / C, Green / Cycle		0.23	0.23	0.23	0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate		0.17	0.17	0.18	0.25	0.00	0.37	0.00
s, saturation flow rate [veh/h]		1774	1630	1583	6765	1583	5074	1583
c, Capacity [veh/h]		410	376	366	4413	1033	3310	1033
d1, Uniform Delay [s]		24.29	24.53	24.62	5.48	0.00	6.53	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.39	3.09	3.39	0.05	0.00	0.15	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

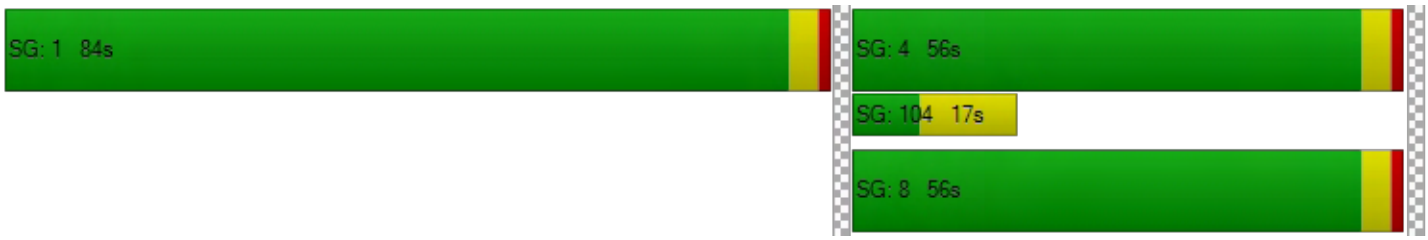
X, volume / capacity		0.72	0.75	0.77	0.38	0.00	0.56	0.00
d, Delay for Lane Group [s/veh]		26.68	27.62	28.00	5.54	0.00	6.68	0.00
Lane Group LOS		C	C	C	A	A	A	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		4.42	4.36	4.34	2.06	0.00	3.67	0.00
50th-Percentile Queue Length [ft/ln]		110.38	108.88	108.44	51.42	0.00	91.70	0.00
95th-Percentile Queue Length [veh/ln]		7.86	7.78	7.75	3.70	0.00	6.60	0.00
95th-Percentile Queue Length [ft/ln]		196.52	194.45	193.83	92.55	0.00	165.06	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	26.89	0.00	27.84	0.00	5.54	0.00	0.00	6.68	0.00
Movement LOS				C		C		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			27.42			5.54			6.68		
Approach LOS	A			C			A			A		
d_I, Intersection Delay [s/veh]	10.32											
Intersection LOS	B											
Intersection V/C	0.615											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.710

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	322	0	134	0	501	379	0	592	385
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.00	1.04	1.00	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	335	0	139	0	521	394	0	616	400
Peak Hour Factor	1.0000	1.0000	1.0000	0.9250	1.0000	0.9250	1.0000	0.9250	0.9250	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	91	0	38	0	141	106	0	166	108
Total Analysis Volume [veh/h]	0	0	0	362	0	150	0	563	426	0	666	432
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	68	0	0	0	32	0	0	32	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		26	26	26	26	26	26
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		7	7	11	11	11	11
g / C, Green / Cycle		0.27	0.27	0.42	0.42	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate		0.11	0.05	0.16	0.27	0.19	0.27
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		920	749	1498	669	1498	669
d1, Uniform Delay [s]		7.73	7.31	5.11	5.88	5.29	5.91
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.27	0.13	0.16	1.01	0.21	1.05
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

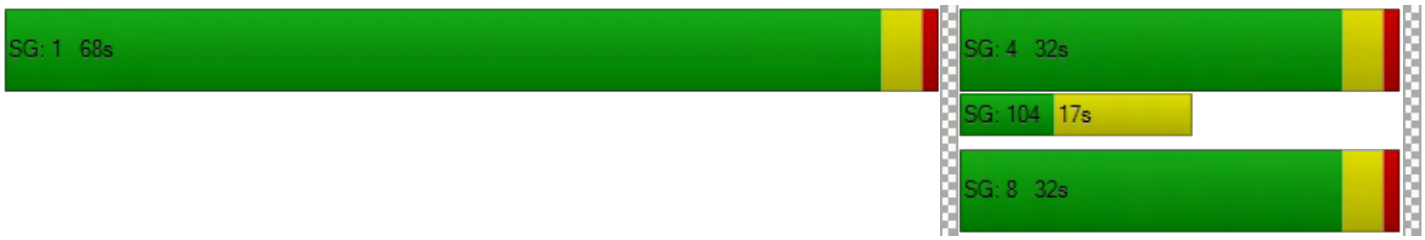
X, volume / capacity		0.39	0.20	0.38	0.64	0.44	0.65
d, Delay for Lane Group [s/veh]		8.01	7.44	5.26	6.89	5.50	6.96
Lane Group LOS		A	A	A	A	A	A
Critical Lane Group		Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		0.51	0.20	0.45	0.91	0.55	0.93
50th-Percentile Queue Length [ft/ln]		12.69	4.97	11.20	22.79	13.80	23.33
95th-Percentile Queue Length [veh/ln]		0.91	0.36	0.81	1.64	0.99	1.68
95th-Percentile Queue Length [ft/ln]		22.84	8.94	20.15	41.03	24.85	41.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.01	0.00	7.44	0.00	5.26	6.89	0.00	5.50	6.96
Movement LOS				A		A		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			7.84			5.97			6.07		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	6.38											
Intersection LOS	A											
Intersection V/C	0.710											

Sequence

Ring 1	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	10.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.722

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	402	0	541	0	0	0	0	1456	345	0	2313	491
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.04	1.00	1.00	1.00	1.00	1.04	1.04	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	418	0	563	0	0	0	0	1514	359	0	2406	511
Peak Hour Factor	0.9350	1.0000	0.9350	1.0000	1.0000	1.0000	1.0000	0.9350	0.9350	1.0000	0.9350	0.9350
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	112	0	151	0	0	0	0	405	0	0	643	0
Total Analysis Volume [veh/h]	447	0	602	0	0	0	0	1619	0	0	2573	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	91	0	0	0	0	0	0	49	0	0	49	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	48	48	48		48	48	48	48
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15		25	25	25	25
g / C, Green / Cycle	0.30	0.30	0.30		0.53	0.53	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.20	0.21	0.22		0.32	0.00	0.38	0.00
s, saturation flow rate [veh/h]	1774	1632	1583		5074	1583	6765	1583
c, Capacity [veh/h]	540	497	482		2679	836	3572	836
d1, Uniform Delay [s]	14.39	14.70	14.82		7.82	0.00	8.59	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.31	1.83	2.09		0.22	0.00	0.28	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.65	0.70	0.72		0.60	0.00	0.72	0.00
d, Delay for Lane Group [s/veh]	15.69	16.53	16.91		8.04	0.00	8.87	0.00
Lane Group LOS	B	B	B		A	A	A	A
Critical Lane Group	No	No	Yes		No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.95	3.07	3.12		2.72	0.00	3.56	0.00
50th-Percentile Queue Length [ft/ln]	73.78	76.68	77.96		68.08	0.00	89.10	0.00
95th-Percentile Queue Length [veh/ln]	5.31	5.52	5.61		4.90	0.00	6.42	0.00
95th-Percentile Queue Length [ft/ln]	132.80	138.03	140.34		122.54	0.00	160.38	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.88	0.00	16.75	0.00	0.00	0.00	0.00	8.04	0.00	0.00	8.87	0.00
Movement LOS	B		B					A	A		A	A
d_A, Approach Delay [s/veh]	16.38			0.00			8.04			8.87		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	10.12											
Intersection LOS	B											
Intersection V/C	0.722											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	3.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.781

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	372	0	0	235	83	722	0	0	794	465
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.04	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	387	0	0	244	86	751	0	0	826	484
Peak Hour Factor	0.9380	1.0000	0.9380	1.0000	1.0000	0.9380	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	103	0	0	65	23	200	0	0	220	129
Total Analysis Volume [veh/h]	0	0	413	0	0	260	92	801	0	0	881	516
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	17	100	0	0	83	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			23	23	23	23
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			3	19	12	12
g / C, Green / Cycle			0.14	0.83	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate			0.05	0.23	0.25	0.33
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			245	2939	1843	823
d1, Uniform Delay [s]			9.16	0.44	3.59	4.00
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			0.96	0.05	0.19	0.79
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.38	0.27	0.48	0.63
d, Delay for Lane Group [s/veh]			10.11	0.49	3.78	4.79
Lane Group LOS			B	A	A	A
Critical Lane Group			Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]			0.33	0.02	0.18	0.35
50th-Percentile Queue Length [ft/ln]			8.15	0.51	4.49	8.77
95th-Percentile Queue Length [veh/ln]			0.59	0.04	0.32	0.63
95th-Percentile Queue Length [ft/ln]			14.67	0.91	8.09	15.79

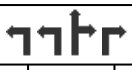
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	10.11	0.49	0.00	0.00	3.78	4.79
Movement LOS							B	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			1.48			4.15		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.11											
Intersection LOS	A											
Intersection V/C	0.781											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	33.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	580	31	97	77	64	175	75	1252	658	137	2049	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	603	32	101	80	67	182	78	1302	684	142	2131	43
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	158	8	26	21	18	48	20	340	179	37	557	11
Total Analysis Volume [veh/h]	630	33	106	84	70	190	82	1361	715	148	2227	45
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	33	33	0	21	21	0	14	75	0	11	72	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	33	33	7	13	13	7	66	66	8	68	68
g / C, Green / Cycle	0.21	0.26	0.26	0.05	0.10	0.10	0.05	0.51	0.51	0.06	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.18	0.02	0.07	0.02	0.08	0.08	0.02	0.27	0.45	0.04	0.42	0.42
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1717	1583	3445	5074	1583	3445	3547	1844
c, Capacity [veh/h]	718	476	404	176	169	155	176	2588	807	209	1843	958
d1, Uniform Delay [s]	49.94	36.76	38.70	60.08	57.48	57.51	60.07	21.37	28.51	60.03	25.95	26.03
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.64	0.06	0.34	1.99	8.45	9.35	1.92	0.17	3.49	4.37	0.89	1.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

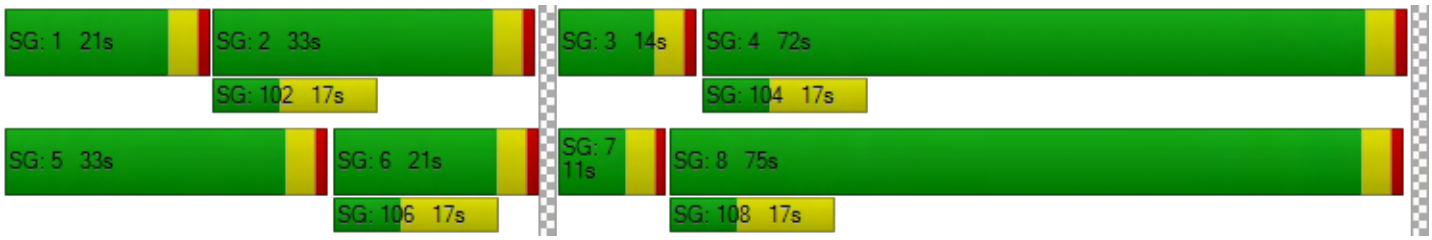
X, volume / capacity	0.88	0.07	0.26	0.48	0.80	0.81	0.47	0.53	0.89	0.71	0.81	0.81
d, Delay for Lane Group [s/veh]	53.58	36.82	39.04	62.07	65.93	66.86	61.99	21.53	32.00	64.41	26.84	27.76
Lane Group LOS	D	D	D	E	E	E	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	10.28	0.82	2.77	1.40	4.74	4.44	1.37	9.23	20.11	2.53	18.88	20.01
50th-Percentile Queue Length [ft/ln]	256.95	20.38	69.20	35.00	118.57	110.98	34.14	230.73	502.69	63.20	472.05	500.16
95th-Percentile Queue Length [veh/ln]	15.54	1.47	4.98	2.52	8.31	7.89	2.46	14.21	27.46	4.55	26.01	27.34
95th-Percentile Queue Length [ft/ln]	388.39	36.68	124.55	63.01	207.85	197.37	61.46	355.29	686.54	113.77	650.21	683.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.58	36.82	39.04	62.07	65.93	66.55	61.99	21.53	32.00	64.41	27.14	27.76
Movement LOS	D	D	D	E	E	E	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	50.86			65.32			26.54			29.43		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	33.40											
Intersection LOS	C											
Intersection V/C	0.863											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.475

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	509	39	92	302	0	0	0	0	119	0	178
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.00	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	529	41	96	314	0	0	0	0	124	0	185
Peak Hour Factor	1.0000	0.9190	0.9190	0.9190	0.9190	1.0000	1.0000	1.0000	1.0000	0.9190	1.0000	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	144	11	26	85	0	0	0	0	34	0	50
Total Analysis Volume [veh/h]	0	576	45	104	342	0	0	0	0	135	0	201
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	53	0	22	75	0	0	0	0	25	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	31	31	31	31		31	31	31
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	4	16		7	7	7
g / C, Green / Cycle	0.26	0.26	0.14	0.52		0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.16	0.03	0.06	0.10		0.07	0.07	0.07
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1608	1583
c, Capacity [veh/h]	917	409	241	1860		382	347	341
d1, Uniform Delay [s]	10.10	8.71	12.20	3.85		10.15	10.16	10.16
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.12	1.21	0.05		0.46	0.51	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.11	0.43	0.18		0.31	0.31	0.32
d, Delay for Lane Group [s/veh]	10.81	8.83	13.42	3.90		10.61	10.67	10.68
Lane Group LOS	B	A	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.27	0.17	0.58	0.23		0.54	0.49	0.49
50th-Percentile Queue Length [ft/ln]	31.86	4.32	14.43	5.87		13.38	12.36	12.21
95th-Percentile Queue Length [veh/ln]	2.29	0.31	1.04	0.42		0.96	0.89	0.88
95th-Percentile Queue Length [ft/ln]	57.35	7.77	25.97	10.57		24.09	22.25	21.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.81	8.83	13.42	3.90	0.00	0.00	0.00	0.00	10.62	0.00	10.68
Movement LOS		B	A	B	A					B		B
d_A, Approach Delay [s/veh]	10.67			6.12			0.00			10.66		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	9.22											
Intersection LOS	A											
Intersection V/C	0.475											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.776

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	310	152	88	40	180	369	249	624	277	24	640	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	322	158	92	42	187	384	259	649	288	25	666	48
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	43	25	11	51	104	70	176	78	7	180	13
Total Analysis Volume [veh/h]	349	171	100	46	203	416	281	703	312	27	722	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	39	0	19	40	0	18	31	0	11	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	67	67	67	67	67	67	67	67	67	67	67	67
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	26	26	4	20	20	8	18	18	3	13	13
g / C, Green / Cycle	0.14	0.39	0.39	0.06	0.30	0.30	0.12	0.27	0.27	0.04	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.10	0.05	0.06	0.03	0.11	0.26	0.08	0.20	0.20	0.01	0.14	0.15
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1800
c, Capacity [veh/h]	491	1372	612	107	568	483	414	970	433	143	691	351
d1, Uniform Delay [s]	27.53	13.29	13.50	30.49	18.25	22.05	28.35	22.14	22.11	31.14	25.48	25.51
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.93	0.04	0.12	2.71	0.38	4.69	1.96	1.05	2.27	0.63	1.59	3.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

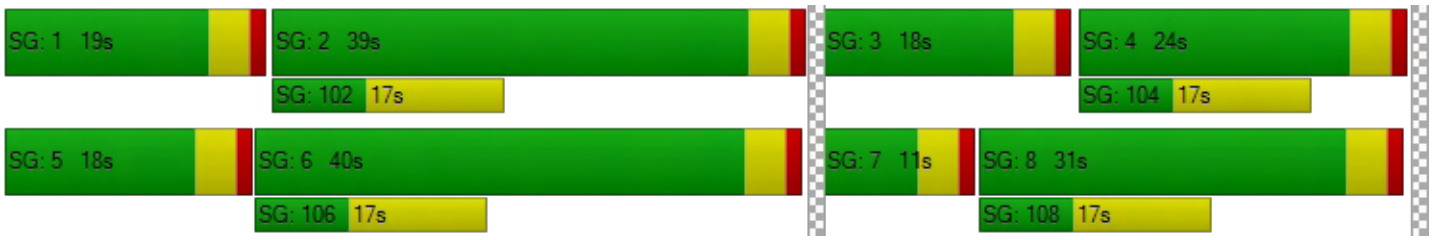
X, volume / capacity	0.71	0.12	0.16	0.43	0.36	0.86	0.68	0.72	0.72	0.19	0.74	0.75
d, Delay for Lane Group [s/veh]	29.45	13.33	13.62	33.20	18.63	26.74	30.31	23.19	24.38	31.77	27.07	28.69
Lane Group LOS	C	B	B	C	B	C	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.68	0.78	0.93	0.77	2.36	6.32	2.18	4.82	4.42	0.22	3.78	4.02
50th-Percentile Queue Length [ft/ln]	66.90	19.40	23.35	19.29	58.93	157.92	54.52	120.39	110.42	5.41	94.59	100.60
95th-Percentile Queue Length [veh/ln]	4.82	1.40	1.68	1.39	4.24	10.44	3.93	8.41	7.86	0.39	6.81	7.24
95th-Percentile Queue Length [ft/ln]	120.42	34.92	42.03	34.73	106.07	260.97	98.14	210.36	196.58	9.74	170.25	181.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.45	13.33	13.62	33.20	18.63	26.74	30.31	23.19	24.38	31.77	27.54	28.69
Movement LOS	C	B	B	C	B	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	22.45			24.71			25.02			27.76		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.14											
Intersection LOS	C											
Intersection V/C	0.776											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.802

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	214	176	128	79	240	408	236	1002	169	191	1415	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	223	183	133	82	250	424	245	1042	176	199	1472	52
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	49	36	22	67	114	66	280	47	53	395	14
Total Analysis Volume [veh/h]	240	197	143	88	269	455	263	1119	189	214	1581	56
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	30	30	11	28	28	13	46	0	13	46	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	99	99	99	99	99	99	99	99	99	99	99	99
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	16	30	6	13	37	20	50	50	10	40	40
g / C, Green / Cycle	0.10	0.17	0.31	0.06	0.14	0.38	0.20	0.51	0.51	0.10	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.09	0.05	0.08	0.29	0.08	0.36	0.36	0.06	0.31	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1771	3445	5074	1583
c, Capacity [veh/h]	328	590	485	115	482	595	687	945	898	343	2067	645
d1, Uniform Delay [s]	43.45	36.35	26.13	45.42	39.89	26.99	34.26	18.64	18.83	42.70	25.20	17.98
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.14	0.33	0.34	9.93	1.01	2.08	0.35	0.97	1.08	1.86	0.61	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

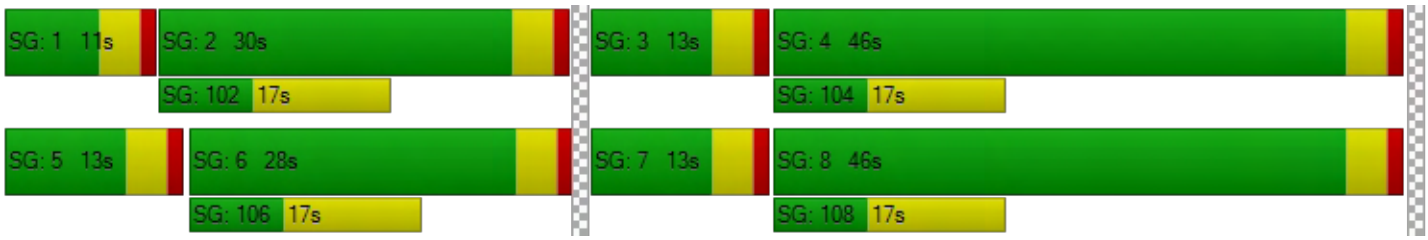
X, volume / capacity	0.73	0.33	0.29	0.76	0.56	0.76	0.38	0.70	0.72	0.62	0.77	0.09
d, Delay for Lane Group [s/veh]	46.59	36.68	26.47	55.35	40.91	29.07	34.61	19.60	19.92	44.56	25.81	18.04
Lane Group LOS	D	D	C	E	D	C	C	B	B	D	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.97	2.11	2.58	2.42	3.09	9.42	2.75	11.22	11.01	2.57	10.34	0.79
50th-Percentile Queue Length [ft/ln]	74.21	52.71	64.49	60.57	77.33	235.47	68.64	280.47	275.15	64.36	258.50	19.64
95th-Percentile Queue Length [veh/ln]	5.34	3.80	4.64	4.36	5.57	14.45	4.94	16.71	16.45	4.63	15.61	1.41
95th-Percentile Queue Length [ft/ln]	133.57	94.88	116.08	109.03	139.19	361.31	123.54	417.80	411.17	115.85	390.34	35.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.59	36.68	26.47	55.35	40.91	29.07	34.61	19.73	19.92	44.56	25.81	18.04
Movement LOS	D	D	C	E	D	C	C	B	B	D	C	B
d_A, Approach Delay [s/veh]	38.26			35.84			22.24			27.74		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.58											
Intersection LOS	C											
Intersection V/C	0.802											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME.vistro

Scenario 4 Existing Plus Ambient Growth Evening Peak Hour

Report File: C:\...\PMEA.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.742	21.0	C
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	NB Left	0.622	16.3	B
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	EB Left	0.225	8.5	A
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	SB Left	0.152	7.9	A
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.889	36.9	D
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	NB Left	0.628	21.0	C
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	WB Left	0.026	28.8	D
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.682	18.0	B
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.658	15.3	B
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.750	6.4	A
18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.718	23.4	C
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.770	2.8	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.844	47.4	D
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.483	9.0	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.737	24.1	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.829	22.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	21.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.742

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	85	113	160	225	157	104	120	1108	48	284	1227	282
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	118	166	234	163	108	125	1152	50	295	1276	293
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	30	43	60	42	28	32	296	13	76	328	75
Total Analysis Volume [veh/h]	90	121	171	240	168	111	128	1184	51	303	1311	301
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	21	21	24	30	0	15	38	0	17	40	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	64	64	64	64	64	64	64	64	64	64	64	64
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	7	20	11	12	12	6	21	21	9	24	24
g / C, Green / Cycle	0.09	0.11	0.31	0.17	0.19	0.19	0.10	0.33	0.33	0.14	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.05	0.06	0.11	0.14	0.08	0.08	0.07	0.23	0.23	0.09	0.26	0.19
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1622	1774	3547	1824	3445	5074	1583
c, Capacity [veh/h]	156	203	489	301	355	309	175	1184	609	473	1889	589
d1, Uniform Delay [s]	28.01	27.14	17.12	25.49	22.73	22.79	27.98	18.42	18.42	26.09	16.98	15.55
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.35	2.78	0.43	4.84	0.77	0.93	5.74	0.72	1.40	1.46	0.47	0.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

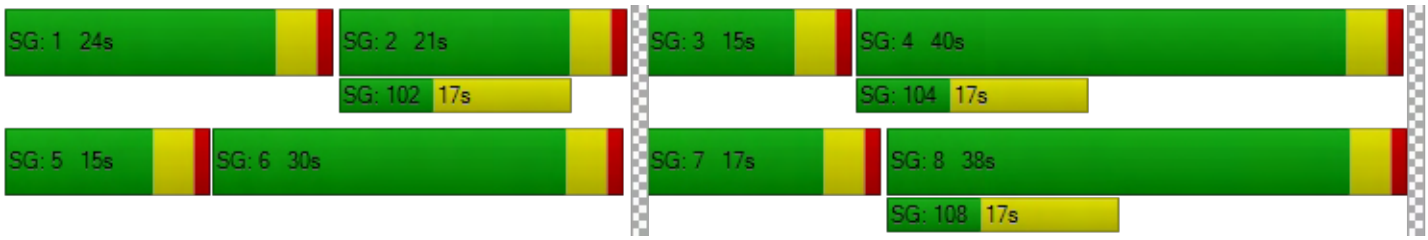
X, volume / capacity	0.58	0.60	0.35	0.80	0.41	0.43	0.73	0.69	0.69	0.64	0.69	0.51
d, Delay for Lane Group [s/veh]	31.36	29.91	17.55	30.34	23.50	23.72	33.72	19.14	19.82	27.55	17.45	16.24
Lane Group LOS	C	C	B	C	C	C	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.40	1.82	1.85	3.69	1.91	1.72	2.08	4.84	5.09	2.16	4.94	3.17
50th-Percentile Queue Length [ft/ln]	35.08	45.62	46.29	92.21	47.65	43.08	52.08	121.00	127.30	53.89	123.41	79.36
95th-Percentile Queue Length [veh/ln]	2.53	3.28	3.33	6.64	3.43	3.10	3.75	8.45	8.79	3.88	8.58	5.71
95th-Percentile Queue Length [ft/ln]	63.14	82.12	83.31	165.98	85.77	77.55	93.75	211.20	219.82	97.00	214.50	142.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.36	29.91	17.55	30.34	23.53	23.72	33.72	19.35	19.82	27.55	17.45	16.24
Movement LOS	C	C	B	C	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	24.72			26.72			20.72			18.85		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	20.98											
Intersection LOS	C											
Intersection V/C	0.742											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	16.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.622

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	124	68	87	175	67	61	180	48	64	268	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	129	71	90	182	70	63	187	50	67	279	138
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	34	19	24	48	19	17	49	13	18	74	37
Total Analysis Volume [veh/h]	24	137	75	95	193	74	67	198	53	71	295	146
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	33	0	16	38	0	13	38	0	13	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	40	40	40	40	40	40	40	40	40	40
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	6	5	9	9	4	9	4	9	9
g / C, Green / Cycle	0.04	0.16	0.12	0.24	0.24	0.09	0.22	0.10	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.01	0.12	0.05	0.10	0.05	0.04	0.14	0.04	0.16	0.09
s, saturation flow rate [veh/h]	1774	1753	1774	1863	1583	1774	1796	1774	1863	1583
c, Capacity [veh/h]	74	288	206	443	377	166	397	172	418	356
d1, Uniform Delay [s]	18.52	15.82	16.44	12.89	12.12	17.00	14.04	16.90	14.22	13.18
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.47	3.68	1.61	0.67	0.25	1.58	1.67	1.57	2.19	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

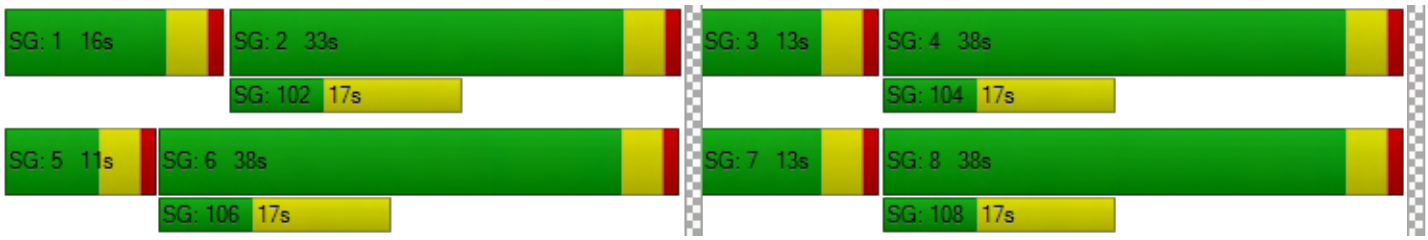
X, volume / capacity	0.32	0.74	0.46	0.44	0.20	0.40	0.63	0.41	0.71	0.41
d, Delay for Lane Group [s/veh]	20.99	19.50	18.05	13.57	12.38	18.57	15.71	18.47	16.41	13.94
Lane Group LOS	C	B	B	B	B	B	B	B	B	B
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.24	1.82	0.78	1.27	0.45	0.57	1.85	0.60	2.24	0.98
50th-Percentile Queue Length [ft/ln]	5.94	45.48	19.49	31.73	11.35	14.17	46.15	14.92	55.91	24.62
95th-Percentile Queue Length [veh/ln]	0.43	3.27	1.40	2.28	0.82	1.02	3.32	1.07	4.03	1.77
95th-Percentile Queue Length [ft/ln]	10.69	81.86	35.08	57.12	20.43	25.50	83.08	26.86	100.65	44.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.99	19.50	19.50	18.05	13.57	12.38	18.57	15.71	15.71	18.47	16.41	13.94
Movement LOS	C	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	19.65			14.50			16.32			15.99		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	16.29											
Intersection LOS	B											
Intersection V/C	0.622											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.225

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	39	55	2	3	80	98	115	1	48	0	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	41	57	2	3	83	102	120	1	50	0	1	4
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	15	1	1	21	26	31	0	13	0	0	1
Total Analysis Volume [veh/h]	42	59	2	3	86	105	124	1	52	0	1	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	755	707	823	786	825
Degree of Utilization, x	0.14	0.13	0.13	0.23	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.47	0.43	0.44	0.86	0.02
95th-Percentile Queue Length [ft]	11.79	10.74	10.91	21.58	0.46
Approach Delay [s/veh]	8.52	8.09		8.91	7.39
Approach LOS	A	A		A	A
Intersection Delay [s/veh]	8.48				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.152

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	2	87	2	0	0	2	0	0	2	96
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	2	90	2	0	0	2	0	0	2	100
Peak Hour Factor	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	1	30	1	0	0	1	0	0	1	33
Total Analysis Volume [veh/h]	0	4	3	119	3	0	0	3	0	0	3	132
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	876	811	804	744	870
Degree of Utilization, x	0.01	0.15	0.00	0.00	0.15

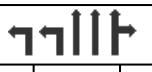
Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.02	0.53	0.01	0.01	0.53
95th-Percentile Queue Length [ft]	0.60	13.19	0.28	0.30	13.35
Approach Delay [s/veh]	7.14	8.22	7.50	7.58	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	7.86				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	36.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.889

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	344	91	813	337	126	109	132	1152	260	889	1249	218
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	358	95	846	350	131	113	137	1198	270	925	1299	227
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	24	216	90	34	29	35	307	69	237	332	58
Total Analysis Volume [veh/h]	366	97	866	358	134	116	140	1226	276	947	1330	232
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	27	23	23	25	21	0	39	43	0	49	53	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	129	129	129	129	129	129	129	129	129	129	129	129
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	63	16	16	16	8	38	38	43	73	73
g / C, Green / Cycle	0.13	0.13	0.49	0.13	0.13	0.13	0.06	0.29	0.29	0.33	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.11	0.05	0.31	0.10	0.07	0.07	0.04	0.24	0.17	0.27	0.29	0.30
s, saturation flow rate [veh/h]	3445	1863	2802	3445	1863	1584	3445	5074	1583	3445	3547	1728
c, Capacity [veh/h]	441	238	1373	432	234	199	201	1482	462	1140	2003	976
d1, Uniform Delay [s]	55.03	51.89	24.36	55.20	53.29	53.38	59.79	42.75	39.26	39.92	17.31	17.60
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.11	1.12	0.48	4.12	2.20	2.72	4.34	1.24	1.24	1.64	0.21	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.41	0.63	0.83	0.57	0.58	0.70	0.83	0.60	0.83	0.52	0.54
d, Delay for Lane Group [s/veh]	59.14	53.00	24.84	59.32	55.49	56.10	64.13	43.99	40.50	41.55	17.52	18.06
Lane Group LOS	E	D	C	E	E	E	E	D	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.07	2.98	9.76	5.94	4.25	3.72	2.38	12.31	7.69	14.05	9.39	9.73
50th-Percentile Queue Length [ft/ln]	151.72	74.53	243.95	148.52	106.28	93.10	59.41	307.70	192.21	351.35	234.83	243.25
95th-Percentile Queue Length [veh/ln]	10.11	5.37	14.88	9.94	7.63	6.70	4.28	18.06	12.24	20.20	14.42	14.85
95th-Percentile Queue Length [ft/ln]	252.73	134.15	372.03	248.45	190.82	167.58	106.94	451.54	305.90	505.05	360.49	371.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.14	53.00	24.84	59.32	55.49	56.10	64.13	43.99	40.50	41.55	17.64	18.06
Movement LOS	E	D	C	E	E	E	E	D	D	D	B	B
d_A, Approach Delay [s/veh]	36.34			57.86			45.12			26.71		
Approach LOS	D			E			D			C		
d_I, Intersection Delay [s/veh]	36.89											
Intersection LOS	D											
Intersection V/C	0.889											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	21.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.628

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	241	255	2	4	258	293	245	2	118	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	251	265	2	4	268	305	255	2	123	0	0	4
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	70	1	1	71	81	68	1	33	0	0	1
Total Analysis Volume [veh/h]	267	282	2	4	285	324	271	2	131	0	0	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	435	465	439	468	516	445	475	524	406
Degree of Utilization, x	0.61	0.61	0.01	0.61	0.63	0.61	0.00	0.25	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	4.00	4.01	0.03	3.98	4.30	3.95	0.01	0.98	0.03
95th-Percentile Queue Length [ft]	99.90	100.16	0.69	99.48	107.42	98.75	0.32	24.54	0.75
Approach Delay [s/veh]	22.53		21.10			19.04			11.95
Approach LOS	C		C			C			B
Intersection Delay [s/veh]	21.05								
Intersection LOS	C								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	28.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	82	472	0	0	349	13	7	0	82	4	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	491	0	0	363	14	7	0	85	4	0	0
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	126	0	0	93	4	2	0	22	1	0	0
Total Analysis Volume [veh/h]	87	504	0	0	373	14	7	0	87	4	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.01	0.00	0.00	0.00	0.00	0.04	0.00	0.13	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	8.32	0.00	0.00	8.39	0.00	0.00	24.33	22.94	11.14	28.78	23.08	11.95
Movement LOS	A	A	A	A	A	A	C	C	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.24	0.00	0.00	0.00	0.00	0.00	0.11	0.44	0.44	0.08	0.08	0.08
95th-Percentile Queue Length [ft/ln]	6.01	0.00	0.00	0.00	0.00	0.00	2.81	11.07	11.07	1.97	1.97	1.97
d_A, Approach Delay [s/veh]	1.22			0.00			12.12			28.78		
Approach LOS	A			A			B			D		
d_I, Intersection Delay [s/veh]	1.84											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	18.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.682

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	51	32	319	19	43	39	435	20	55	441	467
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	53	33	332	20	45	41	452	21	57	459	486
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	14	8	85	5	12	11	116	5	15	118	125
Total Analysis Volume [veh/h]	35	54	34	341	21	46	42	464	22	58	471	498
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	44	0	14	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	55	55	55	55	55	55	55	55	55	55	55
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	9	9	3	20	20	4	21	21
g / C, Green / Cycle	0.11	0.11	0.11	0.16	0.16	0.06	0.36	0.36	0.08	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.02	0.12	0.12	0.02	0.13	0.13	0.03	0.13	0.31
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1735	1774	1863	1833	1774	3547	1583
c, Capacity [veh/h]	192	202	171	293	287	108	672	661	134	1331	594
d1, Uniform Delay [s]	22.36	22.58	22.40	21.74	21.74	24.90	12.97	12.97	24.36	12.40	15.69
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	0.70	0.56	3.07	3.15	2.26	0.33	0.34	2.20	0.16	3.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

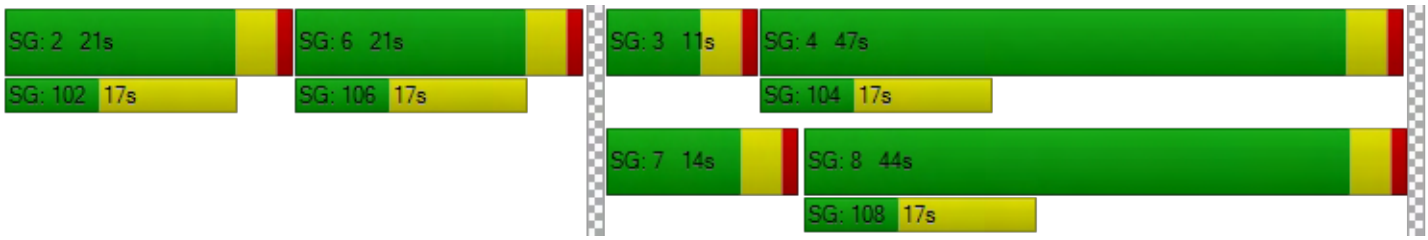
X, volume / capacity	0.18	0.27	0.20	0.70	0.70	0.39	0.36	0.37	0.43	0.35	0.84
d, Delay for Lane Group [s/veh]	22.82	23.28	22.97	24.81	24.89	27.16	13.30	13.31	26.56	12.56	18.93
Lane Group LOS	C	C	C	C	C	C	B	B	C	B	B
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.41	0.64	0.40	2.55	2.50	0.56	2.00	1.98	0.76	1.84	5.37
50th-Percentile Queue Length [ft/ln]	10.18	15.90	9.99	63.79	62.57	14.02	49.98	49.40	18.88	45.95	134.33
95th-Percentile Queue Length [veh/ln]	0.73	1.14	0.72	4.59	4.51	1.01	3.60	3.56	1.36	3.31	9.17
95th-Percentile Queue Length [ft/ln]	18.32	28.62	17.97	114.83	112.63	25.23	89.96	88.92	33.98	82.72	229.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.82	23.28	22.97	24.84	24.89	24.89	27.16	13.30	13.31	26.56	12.56	18.93
Movement LOS	C	C	C	C	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	23.06			24.85			14.41			16.44		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	17.96											
Intersection LOS	B											
Intersection V/C	0.682											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	15.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.658

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	419	0	582	0	1721	464	0	1844	466
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.00	1.04	1.00	1.04	1.04	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	436	0	605	0	1790	483	0	1918	485
Peak Hour Factor	1.0000	1.0000	1.0000	0.9870	1.0000	0.9870	1.0000	0.9870	0.9870	1.0000	0.9870	0.9870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	110	0	153	0	453	0	0	486	0
Total Analysis Volume [veh/h]	0	0	0	442	0	613	0	1814	0	0	1943	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	82	0	0	0	58	0	0	58	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		99	99	99	99	99	99	99
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	26	65	65	65	65
g / C, Green / Cycle		0.26	0.26	0.26	0.66	0.66	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate		0.20	0.22	0.22	0.27	0.00	0.38	0.00
s, saturation flow rate [veh/h]		1774	1628	1583	6765	1583	5074	1583
c, Capacity [veh/h]		466	428	416	4444	1040	3333	1040
d1, Uniform Delay [s]		33.72	34.48	34.76	8.00	0.00	9.49	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.51	4.00	4.78	0.06	0.00	0.16	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.75	0.82	0.85	0.41	0.00	0.58	0.00
d, Delay for Lane Group [s/veh]		36.23	38.49	39.54	8.06	0.00	9.65	0.00
Lane Group LOS		D	D	D	A	A	A	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		7.98	8.31	8.45	4.09	0.00	6.95	0.00
50th-Percentile Queue Length [ft/ln]		199.61	207.71	211.19	102.37	0.00	173.87	0.00
95th-Percentile Queue Length [veh/ln]		12.62	13.04	13.21	7.37	0.00	11.28	0.00
95th-Percentile Queue Length [ft/ln]		315.46	325.89	330.35	184.27	0.00	282.00	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	36.69	0.00	39.09	0.00	8.06	0.00	0.00	9.65	0.00
Movement LOS				D		D		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			38.09			8.06			9.65		
Approach LOS	A			D			A			A		
d_I, Intersection Delay [s/veh]	15.29											
Intersection LOS	B											
Intersection V/C	0.658											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	392	0	155	0	497	238	0	680	413
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.00	1.04	1.00	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	408	0	161	0	517	248	0	707	430
Peak Hour Factor	1.0000	1.0000	1.0000	0.9470	1.0000	0.9470	1.0000	0.9470	0.9470	0.9470	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	108	0	43	0	136	65	0	187	114
Total Analysis Volume [veh/h]	0	0	0	431	0	170	0	546	262	0	747	454
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	32	0	0	0	68	0	0	68	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		27	27	27	27	27	27
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		7	7	12	12	12	12
g / C, Green / Cycle		0.26	0.26	0.44	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate		0.13	0.06	0.15	0.17	0.21	0.29
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		899	731	1558	696	1558	696
d1, Uniform Delay [s]		8.33	7.76	4.96	5.03	5.31	5.88
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.40	0.16	0.13	0.34	0.23	1.04
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

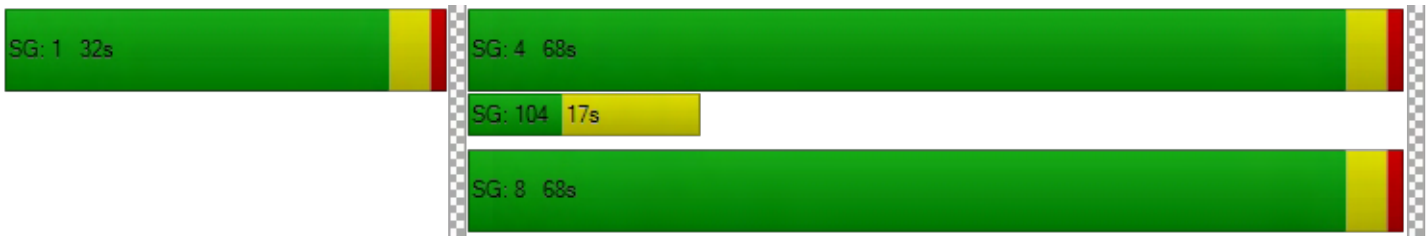
X, volume / capacity		0.48	0.23	0.35	0.38	0.48	0.65
d, Delay for Lane Group [s/veh]		8.73	7.92	5.09	5.36	5.54	6.92
Lane Group LOS		A	A	A	A	A	A
Critical Lane Group		Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		0.68	0.25	0.44	0.46	0.65	1.01
50th-Percentile Queue Length [ft/ln]		17.10	6.24	10.94	11.57	16.22	25.19
95th-Percentile Queue Length [veh/ln]		1.23	0.45	0.79	0.83	1.17	1.81
95th-Percentile Queue Length [ft/ln]		30.79	11.23	19.70	20.82	29.20	45.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.73	0.00	7.92	0.00	5.09	5.36	0.00	5.54	6.92
Movement LOS				A		A		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			8.50			5.18			6.07		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	6.35											
Intersection LOS	A											
Intersection V/C	0.750											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.718

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	517	0	746	0	0	0	0	1885	382	0	1690	480
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.04	1.00	1.00	1.00	1.00	1.04	1.04	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	538	0	776	0	0	0	0	1960	397	0	1758	499
Peak Hour Factor	0.9810	1.0000	0.9810	1.0000	1.0000	1.0000	1.0000	0.9810	0.9810	1.0000	0.9810	0.9810
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	137	0	198	0	0	0	0	499	0	0	448	0
Total Analysis Volume [veh/h]	548	0	791	0	0	0	0	1998	0	0	1792	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	72	0	0	0	0	0	0	68	0	0	68	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	136	136	136		136	136	136	136
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	43	43	43		85	85	85	85
g / C, Green / Cycle	0.32	0.32	0.32		0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.25	0.27	0.28		0.39	0.00	0.26	0.00
s, saturation flow rate [veh/h]	1774	1623	1583		5074	1583	6765	1583
c, Capacity [veh/h]	560	512	500		3176	991	4234	991
d1, Uniform Delay [s]	42.71	44.09	44.51		15.75	0.00	12.99	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.66	4.76	5.82		0.21	0.00	0.07	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

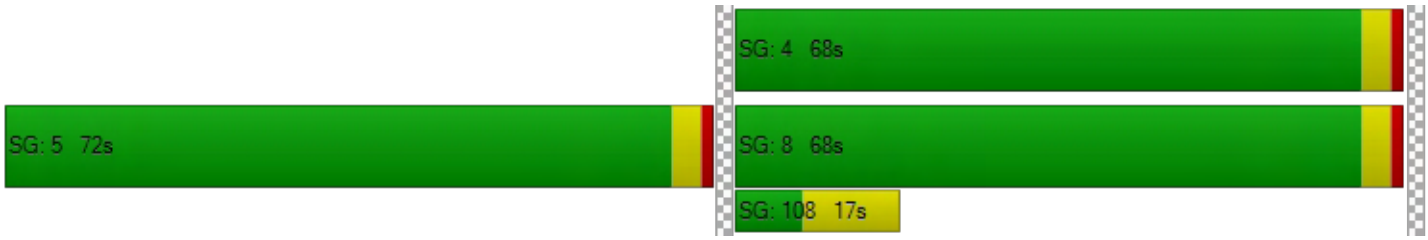
X, volume / capacity	0.80	0.87	0.89		0.63	0.00	0.42	0.00
d, Delay for Lane Group [s/veh]	45.37	48.85	50.33		15.96	0.00	13.06	0.00
Lane Group LOS	D	D	D		B	A	B	A
Critical Lane Group	No	No	Yes		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	14.15	14.86	15.12		12.44	0.00	6.89	0.00
50th-Percentile Queue Length [ft/ln]	353.72	371.41	378.08		311.07	0.00	172.21	0.00
95th-Percentile Queue Length [veh/ln]	20.32	21.18	21.50		18.23	0.00	11.19	0.00
95th-Percentile Queue Length [ft/ln]	507.94	529.44	537.53		455.69	0.00	279.82	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.01	0.00	49.69	0.00	0.00	0.00	0.00	15.96	0.00	0.00	13.06	0.00
Movement LOS	D		D					B	A		B	A
d_A, Approach Delay [s/veh]	48.18			0.00			15.96			13.06		
Approach LOS	D			A			B			B		
d_I, Intersection Delay [s/veh]	23.36											
Intersection LOS	C											
Intersection V/C	0.718											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	2.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.770

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	490	0	0	345	70	831	0	0	759	395
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.04	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	510	0	0	359	73	864	0	0	789	411
Peak Hour Factor	0.9650	1.0000	0.9650	1.0000	1.0000	0.9650	0.9650	0.9650	1.0000	1.0000	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	132	0	0	93	19	224	0	0	204	106
Total Analysis Volume [veh/h]	0	0	528	0	0	372	76	895	0	0	818	426
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	17	100	0	0	83	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			20	20	20	20
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			2	16	10	10
g / C, Green / Cycle			0.12	0.80	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate			0.04	0.25	0.23	0.27
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			219	2846	1708	762
d1, Uniform Delay [s]			8.13	0.53	3.54	3.72
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			0.94	0.06	0.21	0.64
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.35	0.31	0.48	0.56
d, Delay for Lane Group [s/veh]			9.07	0.59	3.75	4.37
Lane Group LOS			A	A	A	A
Critical Lane Group			Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]			0.22	0.02	0.06	0.15
50th-Percentile Queue Length [ft/ln]			5.47	0.62	1.55	3.75
95th-Percentile Queue Length [veh/ln]			0.39	0.04	0.11	0.27
95th-Percentile Queue Length [ft/ln]			9.84	1.11	2.78	6.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	9.07	0.59	0.00	0.00	3.75	4.37
Movement LOS							A	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			1.25			3.96		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.77											
Intersection LOS	A											
Intersection V/C	0.770											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	47.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.844

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	693	108	189	28	78	147	145	1761	633	174	1352	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	721	112	197	29	81	153	151	1831	658	181	1406	28
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	187	29	51	8	21	40	39	474	170	47	364	7
Total Analysis Volume [veh/h]	746	116	204	30	84	158	156	1895	681	187	1455	29
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	38	24	0	35	21	0	35	68	0	13	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	194	194	194	194	194	194	194	194	194	194	194	194
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	45	57	57	6	17	17	11	103	103	13	104	104
g / C, Green / Cycle	0.23	0.29	0.29	0.03	0.09	0.09	0.06	0.53	0.53	0.07	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.22	0.06	0.13	0.01	0.07	0.07	0.05	0.37	0.43	0.05	0.28	0.28
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1759	1583	3445	5074	1583	3445	3547	1844
c, Capacity [veh/h]	809	544	462	100	151	136	198	2689	839	230	1913	994
d1, Uniform Delay [s]	72.45	51.87	55.83	92.24	87.31	87.44	90.24	34.21	37.61	89.29	28.41	28.41
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.25	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.95	0.19	0.66	1.67	11.39	13.67	6.81	0.34	4.43	6.76	0.21	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

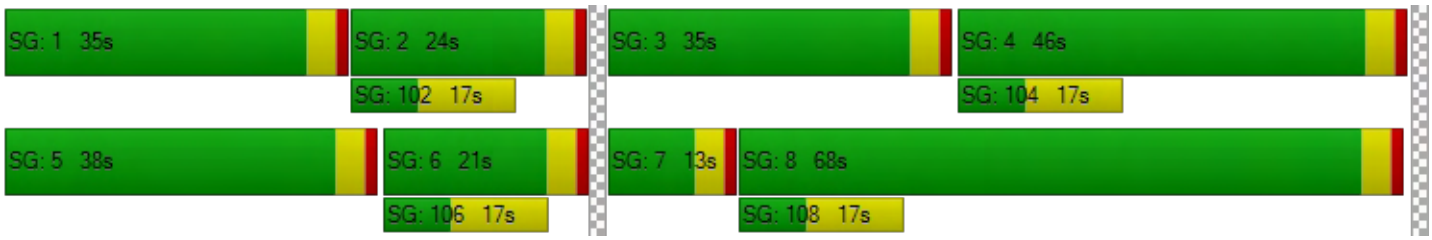
X, volume / capacity	0.92	0.21	0.44	0.30	0.84	0.85	0.79	0.70	0.81	0.81	0.51	0.51
d, Delay for Lane Group [s/veh]	77.40	52.06	56.49	93.91	98.70	101.11	97.04	34.55	42.04	96.05	28.62	28.81
Lane Group LOS	E	D	E	F	F	F	F	C	D	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	18.79	4.39	8.34	0.77	6.78	6.30	4.10	22.68	27.81	4.90	14.81	15.46
50th-Percentile Queue Length [ft/ln]	469.72	109.71	208.42	19.26	169.40	157.53	102.40	567.02	695.33	122.41	370.29	386.54
95th-Percentile Queue Length [veh/ln]	25.90	7.82	13.07	1.39	11.05	10.42	7.37	30.49	36.46	8.53	21.12	21.91
95th-Percentile Queue Length [ft/ln]	647.44	195.60	326.80	34.66	276.13	260.45	184.31	762.28	911.56	213.13	528.08	547.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	77.40	52.06	56.49	93.91	98.70	100.50	97.04	34.55	42.04	96.05	28.68	28.81
Movement LOS	E	D	E	F	F	F	F	C	D	F	C	C
d_A, Approach Delay [s/veh]	70.64			99.20			39.99			36.22		
Approach LOS	E			F			D			D		
d_I, Intersection Delay [s/veh]	47.39											
Intersection LOS	D											
Intersection V/C	0.844											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.483

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	410	88	191	431	0	0	0	0	71	0	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.00	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	426	92	199	448	0	0	0	0	74	0	130
Peak Hour Factor	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	115	25	54	121	0	0	0	0	20	0	35
Total Analysis Volume [veh/h]	0	460	99	215	483	0	0	0	0	80	0	140
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	41	0	38	79	0	0	0	0	21	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	31	31	31	31		31	31	31
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	6	17		6	6	6
g / C, Green / Cycle	0.23	0.23	0.19	0.55		0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.13	0.06	0.12	0.14		0.04	0.04	0.04
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1590	1583
c, Capacity [veh/h]	802	358	343	1945		344	309	307
d1, Uniform Delay [s]	10.68	9.92	11.50	3.67		10.54	10.56	10.56
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.65	0.41	1.89	0.07		0.33	0.38	0.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

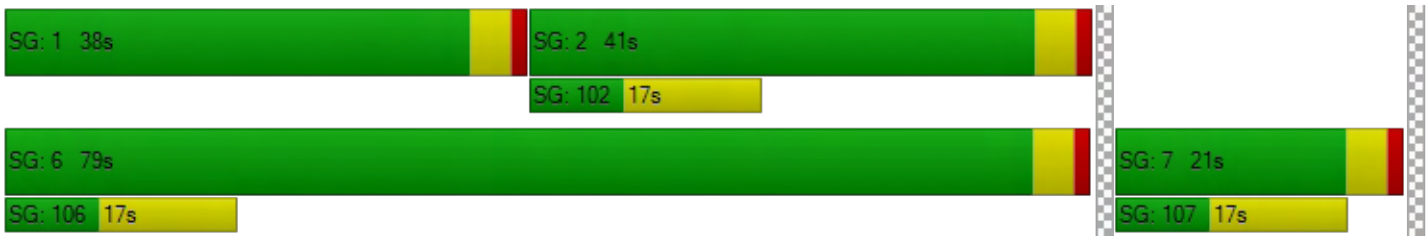
X, volume / capacity	0.57	0.28	0.63	0.25		0.22	0.23	0.23
d, Delay for Lane Group [s/veh]	11.33	10.33	13.38	3.73		10.87	10.94	10.94
Lane Group LOS	B	B	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.07	0.44	1.17	0.30		0.36	0.33	0.33
50th-Percentile Queue Length [ft/ln]	26.69	10.97	29.28	7.45		8.95	8.37	8.35
95th-Percentile Queue Length [veh/ln]	1.92	0.79	2.11	0.54		0.64	0.60	0.60
95th-Percentile Queue Length [ft/ln]	48.05	19.75	52.70	13.40		16.11	15.07	15.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	11.33	10.33	13.38	3.73	0.00	0.00	0.00	0.00	10.88	0.00	10.94
Movement LOS		B	B	B	A					B		B
d_A, Approach Delay [s/veh]	11.15			6.71			0.00			10.92		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	9.02											
Intersection LOS	A											
Intersection V/C	0.483											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.737

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	392	287	189	59	167	279	271	777	283	60	508	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	408	298	197	61	174	290	282	808	294	62	528	56
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	105	76	50	16	45	74	72	207	75	16	135	14
Total Analysis Volume [veh/h]	418	305	202	63	178	297	289	828	301	64	541	57
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	27	0	27	33	0	22	35	0	11	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	67	67	67	67	67	67	67	67	67	67	67	67
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	21	21	5	15	15	8	20	20	5	16	16
g / C, Green / Cycle	0.16	0.32	0.32	0.07	0.23	0.23	0.12	0.30	0.30	0.07	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.12	0.09	0.13	0.04	0.10	0.19	0.08	0.23	0.19	0.02	0.11	0.11
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1774
c, Capacity [veh/h]	568	1138	508	129	425	361	424	1050	469	252	872	436
d1, Uniform Delay [s]	26.69	16.98	17.79	30.01	22.15	24.66	28.24	21.75	20.59	29.45	21.54	21.58
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.87	0.13	0.50	2.87	0.66	4.69	1.94	1.37	1.48	0.53	0.37	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

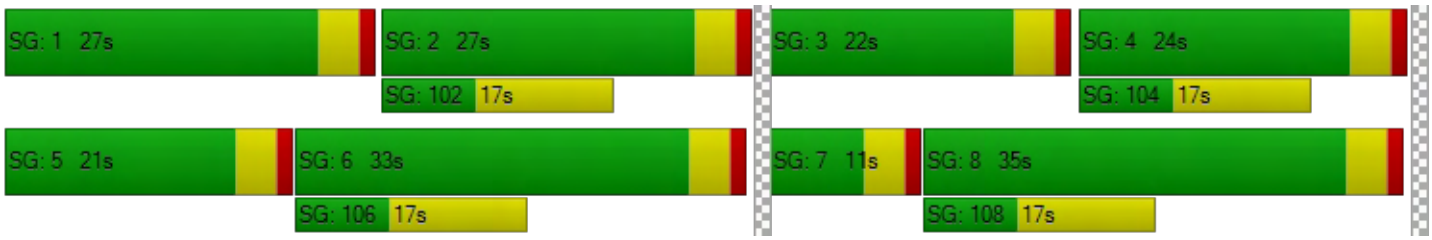
X, volume / capacity	0.74	0.27	0.40	0.49	0.42	0.82	0.68	0.79	0.64	0.25	0.45	0.46
d, Delay for Lane Group [s/veh]	28.57	17.10	18.29	32.88	22.81	29.34	30.18	23.12	22.07	29.98	21.91	22.34
Lane Group LOS	C	B	B	C	C	C	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.16	1.65	2.34	1.04	2.34	4.67	2.24	5.73	4.00	0.49	2.54	2.63
50th-Percentile Queue Length [ft/ln]	79.08	41.28	58.38	26.08	58.52	116.86	55.92	143.22	99.94	12.19	63.48	65.70
95th-Percentile Queue Length [veh/ln]	5.69	2.97	4.20	1.88	4.21	8.22	4.03	9.65	7.20	0.88	4.57	4.73
95th-Percentile Queue Length [ft/ln]	142.35	74.31	105.09	46.94	105.33	205.50	100.66	241.35	179.89	21.94	114.26	118.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.57	17.10	18.29	32.88	22.81	29.34	30.18	23.12	22.07	29.98	22.02	22.34
Movement LOS	C	B	B	C	C	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	22.54			27.60			24.33			22.82		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.08											
Intersection LOS	C											
Intersection V/C	0.737											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.829

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	105	177	226	200	219	114	121	958	60	312	1197	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	184	235	208	228	119	126	996	62	324	1245	172
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	48	61	54	59	31	33	259	16	84	324	45
Total Analysis Volume [veh/h]	113	191	245	216	237	124	131	1036	65	337	1296	179
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	21	20	30	30	23	42	0	17	36	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	71	71	71	71	71	71	71	71	71	71	71	71
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	7	23	11	11	22	6	25	25	12	31	31
g / C, Green / Cycle	0.09	0.10	0.33	0.15	0.16	0.31	0.09	0.35	0.35	0.18	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.03	0.05	0.15	0.12	0.07	0.08	0.04	0.30	0.30	0.10	0.26	0.11
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1824	3445	5074	1583
c, Capacity [veh/h]	304	350	523	269	575	491	315	650	636	605	2197	685
d1, Uniform Delay [s]	30.50	30.46	18.81	29.08	26.69	18.34	30.45	21.45	21.46	26.73	15.32	12.86
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.76	1.33	0.65	5.56	0.47	0.27	0.88	3.38	3.47	0.81	0.25	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

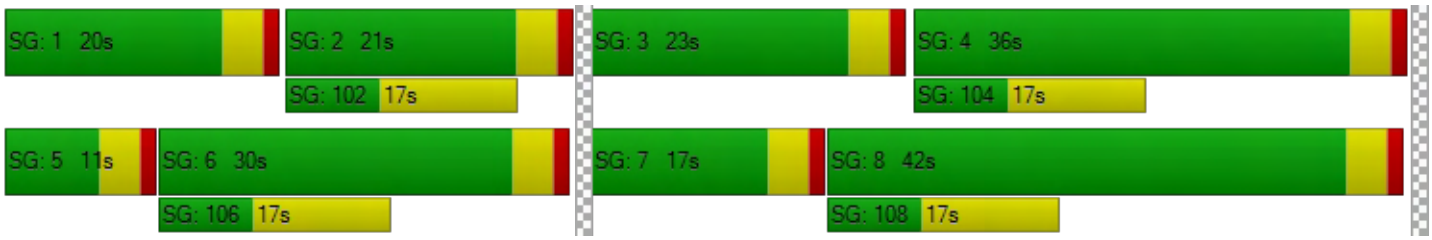
X, volume / capacity	0.37	0.55	0.47	0.80	0.41	0.25	0.42	0.86	0.86	0.56	0.59	0.26
d, Delay for Lane Group [s/veh]	31.25	31.79	19.46	34.63	27.17	18.60	31.33	24.82	24.94	27.53	15.58	13.06
Lane Group LOS	C	C	B	C	C	B	C	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.91	1.56	3.08	3.81	1.77	1.48	1.06	8.48	8.34	2.56	4.86	1.71
50th-Percentile Queue Length [ft/ln]	22.79	39.08	76.91	95.30	44.14	36.88	26.48	211.99	208.47	63.99	121.44	42.75
95th-Percentile Queue Length [veh/ln]	1.64	2.81	5.54	6.86	3.18	2.66	1.91	13.26	13.07	4.61	8.47	3.08
95th-Percentile Queue Length [ft/ln]	41.01	70.34	138.43	171.55	79.44	66.39	47.67	331.39	326.86	115.18	211.80	76.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.25	31.79	19.46	34.63	27.17	18.60	31.33	24.88	24.94	27.53	15.58	13.06
Movement LOS	C	C	B	C	C	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	26.18			28.12			25.56			17.55		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	22.52											
Intersection LOS	C											
Intersection V/C	0.829											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



EXISTING PLUS AMBIENT GROWTH PLUS PROJECT

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME.vistro

Scenario 4 Existing Plus Ambient Growth Plus Project Morning Peak Hour

Report File: C:\...\AMEAP.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.831	32.6	C
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.918	44.7	D
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	NB Thru	1.000	35.1	E
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	WB Right	0.804	23.9	C
5	Sherman Rd (NS) at MFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	8.6	A
6	Sherman Rd (NS) at SFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	8.5	A
7	MFR Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Left	0.018	16.1	C
8	Commercial Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Right	0.011	10.6	B
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Left	0.842	26.8	C
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	SB Right	0.886	32.6	D
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	EB Left	2.309	896.0	F
12	Haun Rd (NS) at North Project Access (EW)	Signalized	HCM 2010	EB Left	0.461	3.0	A
13	Haun Rd (NS) at Central Project Access (EW)	Signalized	HCM 2010	EB Left	0.449	3.0	A
14	Haun Rd (NS) at South Project Access (EW)	Two-way stop	HCM 2010	EB Right	0.027	13.4	B
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.908	41.9	D
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.619	10.9	B
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.738	6.4	A

18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.722	10.2	B
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.776	3.1	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.865	34.0	C
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.475	9.2	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.779	25.5	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.806	29.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	32.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.831

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	109	200	378	166	239	58	73	1097	67	337	764	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	7	0	7	8	0	0	5	9	0	3	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	215	393	180	257	60	76	1146	79	350	798	117
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	62	113	52	74	17	22	330	23	101	230	34
Total Analysis Volume [veh/h]	140	247	452	207	296	69	87	1319	91	403	918	135
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	23	23	19	30	0	11	39	0	19	47	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	103	103	103	103	103	103	103	103	103	103	103	103
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	17	45	14	21	21	7	32	32	24	49	49
g / C, Green / Cycle	0.10	0.17	0.44	0.14	0.21	0.21	0.06	0.31	0.31	0.23	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.08	0.13	0.29	0.12	0.10	0.10	0.05	0.26	0.26	0.12	0.18	0.09
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1743	1774	3547	1802	3445	5074	1583
c, Capacity [veh/h]	174	310	691	245	384	359	114	1099	558	798	2422	756
d1, Uniform Delay [s]	45.73	41.52	23.03	43.58	36.32	36.37	47.72	33.51	33.51	34.64	17.28	15.47
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.32	4.71	1.06	7.81	0.97	1.05	10.20	1.96	3.76	0.50	0.10	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

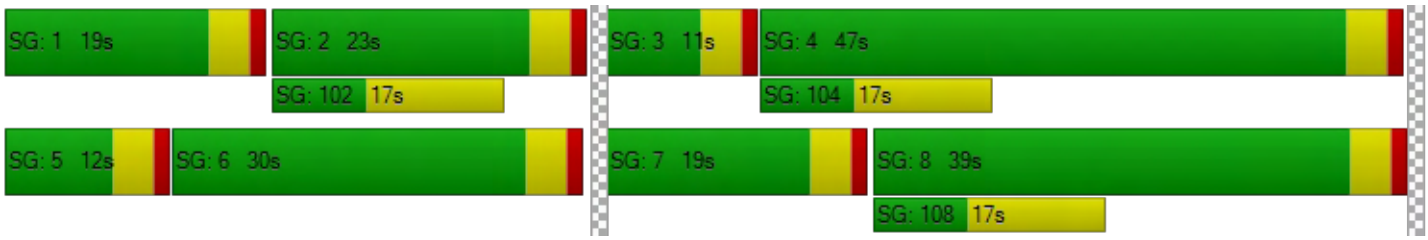
X, volume / capacity	0.80	0.80	0.65	0.85	0.49	0.49	0.77	0.85	0.85	0.51	0.38	0.18
d, Delay for Lane Group [s/veh]	54.05	46.24	24.09	51.39	37.29	37.42	57.92	35.47	37.28	35.14	17.38	15.58
Lane Group LOS	D	D	C	D	D	D	E	D	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.90	6.41	8.63	5.66	4.26	4.04	2.52	11.06	11.52	4.44	4.56	1.82
50th-Percentile Queue Length [ft/ln]	97.58	160.19	215.65	141.52	106.52	101.09	62.97	276.52	287.96	110.91	113.92	45.38
95th-Percentile Queue Length [veh/ln]	7.03	10.56	13.44	9.56	7.65	7.28	4.53	16.52	17.08	7.89	8.06	3.27
95th-Percentile Queue Length [ft/ln]	175.65	263.97	336.06	239.07	191.14	181.96	113.34	412.88	427.11	197.27	201.45	81.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.05	46.24	24.09	51.39	37.34	37.42	57.92	36.00	37.28	35.14	17.38	15.58
Movement LOS	D	D	C	D	D	D	E	D	D	D	B	B
d_A, Approach Delay [s/veh]	35.61			42.43			37.35			22.13		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	32.60											
Intersection LOS	C											
Intersection V/C	0.831											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	44.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.918

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	48	318	164	66	426	204	106	228	182	174	174	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	23	2	0	28	0	0	0	4	3	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	354	173	69	471	212	110	237	193	184	181	114
Peak Hour Factor	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	103	50	20	136	61	32	69	56	53	52	33
Total Analysis Volume [veh/h]	64	410	200	80	546	246	127	275	224	213	210	132
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	39	0	11	34	0	12	33	0	17	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	125	125	125	125	125	125	125	125	125	125
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	46	7	47	47	11	39	17	45	45
g / C, Green / Cycle	0.05	0.37	0.06	0.37	0.37	0.09	0.31	0.14	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.04	0.35	0.05	0.29	0.16	0.07	0.29	0.12	0.11	0.08
s, saturation flow rate [veh/h]	1774	1761	1774	1863	1583	1774	1726	1774	1863	1583
c, Capacity [veh/h]	89	646	103	699	594	156	533	245	669	569
d1, Uniform Delay [s]	58.56	38.38	58.08	34.56	28.92	56.04	42.00	52.80	28.94	28.02
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.51	7.83	11.54	1.95	0.46	9.80	8.23	9.17	0.27	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.72	0.94	0.77	0.78	0.41	0.81	0.94	0.87	0.31	0.23
d, Delay for Lane Group [s/veh]	69.06	46.21	69.62	36.51	29.38	65.83	50.23	61.98	29.21	28.22
Lane Group LOS	E	D	E	D	C	E	D	E	C	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.26	19.22	2.83	14.90	5.55	4.36	16.02	7.16	4.63	2.82
50th-Percentile Queue Length [ft/ln]	56.38	480.42	70.66	372.49	138.79	108.94	400.49	179.08	115.70	70.46
95th-Percentile Queue Length [veh/ln]	4.06	26.41	5.09	21.23	9.42	7.78	22.58	11.55	8.16	5.07
95th-Percentile Queue Length [ft/ln]	101.48	660.16	127.19	530.75	235.39	194.53	564.59	288.82	203.91	126.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	69.06	46.21	46.21	69.62	36.51	29.38	65.83	50.23	50.23	61.98	29.21	28.22
Movement LOS	E	D	D	E	D	C	E	D	D	E	C	C
d_A, Approach Delay [s/veh]	48.38			37.54			53.40			41.55		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.67											
Intersection LOS	D											
Intersection V/C	0.918											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	35.1
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	105	296	0	2	252	175	103	2	51	1	6	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	33	0	0	36	0	0	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	341	0	2	298	182	107	2	56	1	6	24
Peak Hour Factor	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	114	0	1	100	61	36	1	19	0	2	8
Total Analysis Volume [veh/h]	149	456	0	3	399	244	143	3	75	1	8	32
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	605	559	629	512	482
Degree of Utilization, x	1.00	0.72	0.39	0.43	0.09

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	15.06	5.91	1.83	2.16	0.28
95th-Percentile Queue Length [ft]	376.58	147.74	45.80	53.90	6.93
Approach Delay [s/veh]	60.70	19.42		15.29	11.16
Approach LOS	F	C		C	B
Intersection Delay [s/veh]	35.10				
Intersection LOS	E				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	23.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.804

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	0	278	1	1	2	2	0	0	6	364
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	0	45	4	0	0	0	0	0	0	26
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	13	0	334	5	1	2	2	0	0	6	405
Peak Hour Factor	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	0	113	2	0	1	1	0	0	2	137
Total Analysis Volume [veh/h]	0	18	0	451	7	1	3	3	0	0	8	547
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	567	631	549	601	681
Degree of Utilization, x	0.03	0.73	0.01	0.01	0.80

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.10	6.21	0.03	0.04	8.23
95th-Percentile Queue Length [ft]	2.46	155.23	0.83	1.01	205.69
Approach Delay [s/veh]	9.56	22.39	9.63	25.73	
Approach LOS	A	C	A	D	
Intersection Delay [s/veh]	23.88				
Intersection LOS	C				

Intersection Level Of Service Report
Intersection 5: Sherman Rd (NS) at MFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	3	0	0	1	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	0	4	1	0	10
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	0	0	3
Total Analysis Volume [veh/h]	3	0	4	1	0	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.23	0.00	8.62	8.36
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.19	0.19	0.77	0.77
d_A, Approach Delay [s/veh]	0.00		5.78		8.36	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.36					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Sherman Rd (NS) at SFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	3	0	0	1	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	0	0	1	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	0	0	0
Total Analysis Volume [veh/h]	3	0	0	1	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.22	0.00	8.54	8.33
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		8.43	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: MFR Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	16.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	280	0	0	373
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	51	43	2	15	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	51	334	2	15	408
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	13	88	1	4	107
Total Analysis Volume [veh/h]	6	54	352	2	16	429
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.08	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	16.13	10.82	0.00	0.00	8.03	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.32	0.32	0.00	0.00	0.04	0.02
95th-Percentile Queue Length [ft/ln]	7.90	7.90	0.00	0.00	0.95	0.47
d_A, Approach Delay [s/veh]	11.35		0.00		0.29	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.94					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Commercial Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	280	0	0	373
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.00	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	86	8	0	35
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	7	377	8	0	423
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	99	2	0	111
Total Analysis Volume [veh/h]	0	7	397	8	0	445
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	10.61	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.82	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.61		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.09					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	26.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.842

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	77	569	110	38	30	121	1432	206	709	1057	322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	42	0	0	0	0	0	12	38	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	147	80	634	114	40	31	126	1489	226	775	1099	335
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	21	167	30	11	8	33	393	60	204	290	88
Total Analysis Volume [veh/h]	155	84	669	120	42	33	133	1571	238	818	1159	353
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	21	12	22	0	55	53	0	54	52	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	11	47	7	11	11	7	44	44	32	69	69
g / C, Green / Cycle	0.07	0.10	0.43	0.06	0.10	0.10	0.06	0.40	0.40	0.29	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.04	0.05	0.24	0.03	0.02	0.02	0.04	0.31	0.15	0.24	0.29	0.30
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1606	3445	5074	1583	3445	3547	1654
c, Capacity [veh/h]	227	188	1197	214	181	156	216	2037	636	999	2230	1040
d1, Uniform Delay [s]	50.19	46.51	23.68	50.05	45.73	45.82	50.19	28.49	23.15	36.31	10.61	10.79
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.61	1.67	0.41	2.29	0.58	0.76	2.85	0.64	0.37	1.72	0.15	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.45	0.56	0.56	0.21	0.23	0.62	0.77	0.37	0.82	0.46	0.48
d, Delay for Lane Group [s/veh]	53.80	48.18	24.09	52.35	46.31	46.59	53.04	29.13	23.52	38.03	10.75	11.13
Lane Group LOS	D	D	C	D	D	D	D	C	C	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.19	2.25	6.48	1.67	1.00	0.95	1.86	11.77	4.37	10.30	6.07	6.05
50th-Percentile Queue Length [ft/ln]	54.77	56.13	161.90	41.66	24.98	23.80	46.56	294.34	109.19	257.58	151.63	151.14
95th-Percentile Queue Length [veh/ln]	3.94	4.04	10.65	3.00	1.80	1.71	3.35	17.40	7.80	15.57	10.10	10.08
95th-Percentile Queue Length [ft/ln]	98.59	101.03	266.24	74.98	44.97	42.84	83.81	435.02	194.88	389.19	252.60	251.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.80	48.18	24.09	52.35	46.34	46.59	53.04	29.13	23.52	38.03	10.80	11.13
Movement LOS	D	D	C	D	D	D	D	C	C	D	B	B
d_A, Approach Delay [s/veh]	31.39			50.08			30.08			20.41		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]	26.83											
Intersection LOS	C											
Intersection V/C	0.842											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	32.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.886

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	249	182	0	4	167	324	238	4	192	3	5	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	52	0	0	51	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	259	241	0	4	225	337	248	4	200	3	5	3
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	73	0	1	69	103	76	1	61	1	2	1
Total Analysis Volume [veh/h]	316	294	0	5	274	411	302	5	244	4	6	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	395	419	401	424	464	417	443	486	346
Degree of Utilization, x	0.80	0.70	0.01	0.65	0.89	0.72	0.01	0.50	0.04

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	7.00	5.27	0.04	4.42	9.55	5.66	0.03	2.78	0.13
95th-Percentile Queue Length [ft]	175.05	131.77	0.95	110.45	238.67	141.52	0.86	69.48	3.16
Approach Delay [s/veh]	34.51		37.61			24.77			13.86
Approach LOS	D		E			C			B
Intersection Delay [s/veh]	32.62								
Intersection LOS	D								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	896.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.309

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	347	320	0	0	330	26	15	0	264	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	27	27	0	0	53	8	34	0	59	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	388	360	0	0	396	35	50	0	334	1	0	1
Peak Hour Factor	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	116	0	0	128	11	16	0	108	0	0	0
Total Analysis Volume [veh/h]	501	465	0	0	512	45	65	0	432	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.49	0.00	0.00	0.00	0.01	0.00	2.31	0.00	0.77	0.16	0.00	0.00
d_M, Delay for Movement [s/veh]	11.97	0.00	0.00	8.28	0.00	0.00	896.00	138.48	29.54	626.37	177.10	60.03
Movement LOS	B	A	A	A	A	A	F	F	D	F	F	F
95th-Percentile Queue Length [veh/ln]	2.81	0.00	0.00	0.00	0.00	0.00	7.75	6.98	6.98	0.43	0.43	0.43
95th-Percentile Queue Length [ft/ln]	70.22	0.00	0.00	0.00	0.00	0.00	193.77	174.43	174.43	10.79	10.79	10.79
d_A, Approach Delay [s/veh]	6.21			0.00			142.86			343.20		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	38.42											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: Haun Rd (NS) at North Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	3.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.461

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	30	67	44	24	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	724	686	44	24	10
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	191	181	12	6	3
Total Analysis Volume [veh/h]	17	762	722	46	25	11
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	109	109	0	11	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	24	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	107	107	107	107	5
g / C, Green / Cycle	0.89	0.89	0.89	0.89	0.04
(v / s)_i Volume / Saturation Flow Rate	0.02	0.41	0.21	0.21	0.02
s, saturation flow rate [veh/h]	697	1863	1863	1824	1711
c, Capacity [veh/h]	649	1661	1661	1626	72
d1, Uniform Delay [s]	1.50	1.20	0.89	0.89	56.33
k, delay calibration	0.50	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.07	0.92	0.33	0.34	5.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.46	0.23	0.24	0.50
d, Delay for Lane Group [s/veh]	1.57	2.11	1.22	1.24	61.69
Lane Group LOS	A	A	A	A	E
Critical Lane Group	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.05	1.35	0.50	0.50	1.18
50th-Percentile Queue Length [ft/ln]	1.34	33.64	12.41	12.56	29.41
95th-Percentile Queue Length [veh/ln]	0.10	2.42	0.89	0.90	2.12
95th-Percentile Queue Length [ft/ln]	2.41	60.55	22.34	22.62	52.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	1.57	2.11	1.23	1.24	61.69	61.69
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	2.10		1.23		61.69	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	3.03					
Intersection LOS	A					
Intersection V/C	0.461					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Haun Rd (NS) at Central Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	3.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.449

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	23	34	43	23	12
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	717	653	43	23	12
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	189	172	11	6	3
Total Analysis Volume [veh/h]	38	755	687	45	24	13
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	109	109	0	11	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	19	19	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	107	107	107	107	5	5
g / C, Green / Cycle	0.89	0.89	0.89	0.89	0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.05	0.41	0.20	0.20	0.01	0.01
s, saturation flow rate [veh/h]	721	1863	1863	1823	1774	1583
c, Capacity [veh/h]	669	1660	1660	1624	75	67
d1, Uniform Delay [s]	1.52	1.20	0.89	0.89	55.83	55.53
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	0.90	0.31	0.32	2.40	1.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.06	0.45	0.22	0.23	0.32	0.19
d, Delay for Lane Group [s/veh]	1.68	2.10	1.19	1.22	58.23	56.92
Lane Group LOS	A	A	A	A	E	E
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.12	1.35	0.48	0.48	0.76	0.41
50th-Percentile Queue Length [ft/ln]	3.02	33.72	11.90	12.05	18.94	10.17
95th-Percentile Queue Length [veh/ln]	0.22	2.43	0.86	0.87	1.36	0.73
95th-Percentile Queue Length [ft/ln]	5.44	60.70	21.43	21.68	34.08	18.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	1.68	2.10	1.20	1.22	58.23	56.92
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	2.08		1.20		57.77	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.99					
Intersection LOS	A					
Intersection V/C	0.449					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: Haun Rd (NS) at South Project Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.00	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	59	47	0	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	753	666	0	0	11
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	198	175	0	0	3
Total Analysis Volume [veh/h]	0	793	701	0	0	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	13.44
Movement LOS		A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	2.11
d_A, Approach Delay [s/veh]	0.00		0.00		13.44	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.11					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	41.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.908

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	23	112	24	528	45	39	66	423	9	53	341	485
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	44	0	6	8	0	0	0	0	42
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	116	25	593	47	47	77	440	9	55	355	546
Peak Hour Factor	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	36	8	183	15	15	24	136	3	17	110	169
Total Analysis Volume [veh/h]	30	143	31	733	58	58	95	544	11	68	439	675
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	45	0	13	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	132	132	132	132	132	132	132	132	132	132	132
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	35	35	9	62	62	7	59	59
g / C, Green / Cycle	0.09	0.09	0.09	0.27	0.27	0.07	0.47	0.47	0.05	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.02	0.08	0.02	0.24	0.24	0.05	0.15	0.15	0.04	0.12	0.43
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1757	1774	1863	1850	1774	3547	1583
c, Capacity [veh/h]	167	175	149	472	467	120	873	867	88	1598	714
d1, Uniform Delay [s]	55.02	58.59	55.17	46.71	46.79	60.55	21.90	21.90	61.88	22.70	34.67
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.51	8.84	0.68	6.55	6.89	11.03	0.21	0.21	12.97	0.09	7.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.82	0.21	0.90	0.91	0.79	0.32	0.32	0.77	0.27	0.95
d, Delay for Lane Group [s/veh]	55.53	67.43	55.86	53.25	53.68	71.58	22.11	22.11	74.86	22.79	42.00
Lane Group LOS	E	E	E	D	D	E	C	C	E	C	D
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.95	5.12	0.98	14.27	14.27	3.50	5.47	5.44	2.57	4.33	21.70
50th-Percentile Queue Length [ft/ln]	23.67	127.89	24.62	356.70	356.67	87.53	136.76	135.93	64.30	108.29	542.52
95th-Percentile Queue Length [veh/ln]	1.70	8.82	1.77	20.46	20.46	6.30	9.31	9.26	4.63	7.74	29.34
95th-Percentile Queue Length [ft/ln]	42.60	220.62	44.31	511.57	511.54	157.55	232.65	231.54	115.75	193.62	733.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.53	67.43	55.86	53.43	53.68	53.68	71.58	22.11	22.11	74.86	22.79	42.00
Movement LOS	E	E	E	D	D	D	E	C	C	E	C	D
d_A, Approach Delay [s/veh]	63.92			53.46			29.34			36.76		
Approach LOS	E			D			C			D		
d_I, Intersection Delay [s/veh]	41.92											
Intersection LOS	D											
Intersection V/C	0.908											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	10.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	333	0	439	0	1489	630	0	1666	1057
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.00	1.04	1.00	1.04	1.04	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	20	0	42	0	0	18	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	346	0	477	0	1591	655	0	1751	1099
Peak Hour Factor	1.0000	1.0000	1.0000	0.9340	1.0000	0.9340	1.0000	0.9340	0.9340	1.0000	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	93	0	128	0	426	0	0	469	0
Total Analysis Volume [veh/h]	0	0	0	370	0	511	0	1703	0	0	1875	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	84	0	0	0	56	0	0	56	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		73	73	73	73	73	73	73
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		17	17	17	48	48	48	48
g / C, Green / Cycle		0.23	0.23	0.23	0.66	0.66	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate		0.17	0.18	0.18	0.25	0.00	0.37	0.00
s, saturation flow rate [veh/h]		1774	1625	1583	6765	1583	5074	1583
c, Capacity [veh/h]		414	379	369	4450	1042	3338	1042
d1, Uniform Delay [s]		25.98	26.29	26.39	5.74	0.00	6.81	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.46	3.32	3.64	0.05	0.00	0.15	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

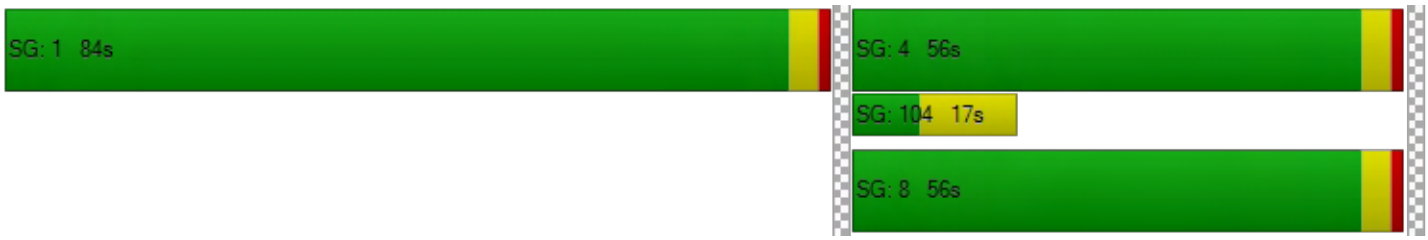
X, volume / capacity		0.73	0.77	0.78	0.38	0.00	0.56	0.00
d, Delay for Lane Group [s/veh]		28.44	29.61	30.03	5.80	0.00	6.96	0.00
Lane Group LOS		C	C	C	A	A	A	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		4.89	4.87	4.86	2.34	0.00	4.09	0.00
50th-Percentile Queue Length [ft/ln]		122.32	121.69	121.59	58.38	0.00	102.14	0.00
95th-Percentile Queue Length [veh/ln]		8.52	8.49	8.48	4.20	0.00	7.35	0.00
95th-Percentile Queue Length [ft/ln]		213.01	212.14	212.01	105.08	0.00	183.85	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	28.68	0.00	29.85	0.00	5.80	0.00	0.00	6.96	0.00
Movement LOS				C		C		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			29.35			5.80			6.96		
Approach LOS	A			C			A			A		
d_I, Intersection Delay [s/veh]	10.94											
Intersection LOS	B											
Intersection V/C	0.619											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	322	0	134	0	501	379	0	592	385
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.00	1.04	1.00	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	12	32	0	42	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	335	0	139	0	533	426	0	658	400
Peak Hour Factor	1.0000	1.0000	1.0000	0.9250	1.0000	0.9250	1.0000	0.9250	0.9250	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	91	0	38	0	144	115	0	178	108
Total Analysis Volume [veh/h]	0	0	0	362	0	150	0	576	461	0	711	432
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	67	0	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		26	26	26	26	26	26
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		7	7	11	11	11	11
g / C, Green / Cycle		0.26	0.26	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate		0.11	0.05	0.16	0.29	0.20	0.27
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		910	740	1517	677	1517	677
d1, Uniform Delay [s]		7.86	7.43	5.08	6.00	5.32	5.85
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.28	0.13	0.16	1.21	0.23	1.01
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

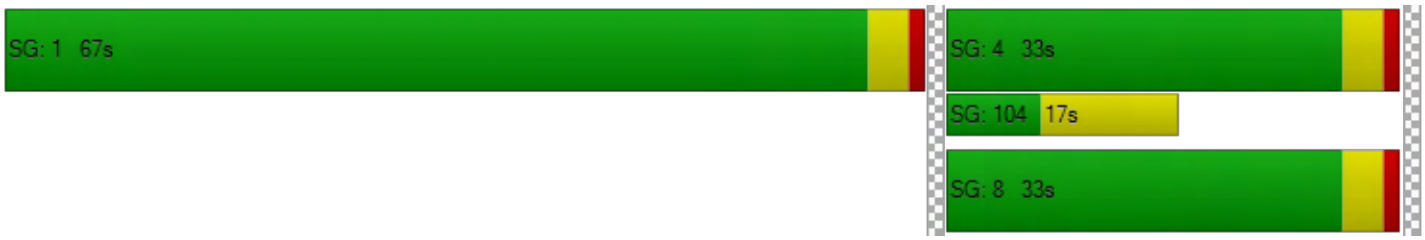
X, volume / capacity		0.40	0.20	0.38	0.68	0.47	0.64
d, Delay for Lane Group [s/veh]		8.14	7.56	5.23	7.21	5.54	6.85
Lane Group LOS		A	A	A	A	A	A
Critical Lane Group		Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]		0.52	0.20	0.46	1.03	0.60	0.93
50th-Percentile Queue Length [ft/ln]		13.06	5.11	11.48	25.85	14.96	23.13
95th-Percentile Queue Length [veh/ln]		0.94	0.37	0.83	1.86	1.08	1.67
95th-Percentile Queue Length [ft/ln]		23.52	9.20	20.66	46.53	26.93	41.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.14	0.00	7.56	0.00	5.23	7.21	0.00	5.54	6.85
Movement LOS				A		A		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			7.97			6.11			6.04		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	6.43											
Intersection LOS	A											
Intersection V/C	0.738											

Sequence

Ring 1	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	10.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.722

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	402	0	541	0	0	0	0	1456	345	0	2313	491
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.04	1.00	1.00	1.00	1.00	1.04	1.04	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	17	25	0	18	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	418	0	563	0	0	0	0	1531	384	0	2424	511
Peak Hour Factor	0.9350	1.0000	0.9350	1.0000	1.0000	1.0000	1.0000	0.9350	0.9350	1.0000	0.9350	0.9350
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	112	0	151	0	0	0	0	409	0	0	648	0
Total Analysis Volume [veh/h]	447	0	602	0	0	0	0	1637	0	0	2593	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	90	0	0	0	0	0	0	50	0	0	50	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	49	49	49		49	49	49	49
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15		26	26	26	26
g / C, Green / Cycle	0.30	0.30	0.30		0.53	0.53	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.20	0.21	0.22		0.32	0.00	0.38	0.00
s, saturation flow rate [veh/h]	1774	1632	1583		5074	1583	6765	1583
c, Capacity [veh/h]	537	494	479		2711	846	3615	846
d1, Uniform Delay [s]	14.85	15.18	15.30		7.85	0.00	8.62	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.34	1.88	2.16		0.22	0.00	0.27	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.65	0.71	0.73		0.60	0.00	0.72	0.00
d, Delay for Lane Group [s/veh]	16.19	17.06	17.46		8.07	0.00	8.89	0.00
Lane Group LOS	B	B	B		A	A	A	A
Critical Lane Group	No	No	Yes		No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.07	3.19	3.25		2.83	0.00	3.69	0.00
50th-Percentile Queue Length [ft/ln]	76.81	79.83	81.16		70.72	0.00	92.19	0.00
95th-Percentile Queue Length [veh/ln]	5.53	5.75	5.84		5.09	0.00	6.64	0.00
95th-Percentile Queue Length [ft/ln]	138.25	143.69	146.09		127.29	0.00	165.95	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.38	0.00	17.29	0.00	0.00	0.00	0.00	8.07	0.00	0.00	8.89	0.00
Movement LOS	B		B					A	A		A	A
d_A, Approach Delay [s/veh]	16.90			0.00			8.07			8.89		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	10.23											
Intersection LOS	B											
Intersection V/C	0.722											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	3.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.776

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	372	0	0	235	83	722	0	0	794	465
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.04	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	26	0	12	0	0	16	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	387	0	0	270	86	763	0	0	842	484
Peak Hour Factor	0.9380	1.0000	0.9380	1.0000	1.0000	0.9380	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	103	0	0	72	23	203	0	0	224	129
Total Analysis Volume [veh/h]	0	0	413	0	0	288	92	813	0	0	898	516
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	17	100	0	0	83	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			23	23	23	23
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			3	19	12	12
g / C, Green / Cycle			0.14	0.83	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate			0.05	0.23	0.25	0.33
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			244	2943	1850	826
d1, Uniform Delay [s]			9.21	0.44	3.60	3.98
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			0.96	0.05	0.20	0.78
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.38	0.28	0.49	0.62
d, Delay for Lane Group [s/veh]			10.17	0.49	3.79	4.76
Lane Group LOS			B	A	A	A
Critical Lane Group			Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]			0.33	0.02	0.19	0.35
50th-Percentile Queue Length [ft/ln]			8.23	0.52	4.66	8.79
95th-Percentile Queue Length [veh/ln]			0.59	0.04	0.34	0.63
95th-Percentile Queue Length [ft/ln]			14.82	0.93	8.39	15.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	10.17	0.49	0.00	0.00	3.79	4.76
Movement LOS							B	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			1.48			4.15		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.11											
Intersection LOS	A											
Intersection V/C	0.776											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	34.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.865

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	580	31	97	77	64	175	75	1252	658	137	2049	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	0	2	1	13	3	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	609	32	101	80	67	184	79	1315	687	142	2141	43
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	159	8	26	21	18	48	21	344	179	37	559	11
Total Analysis Volume [veh/h]	636	33	106	84	70	192	83	1374	718	148	2237	45
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	33	32	0	22	21	0	14	75	0	11	72	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	133	133	133	133	133	133	133	133	133	133	133	133
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	34	34	7	13	13	7	68	68	8	69	69
g / C, Green / Cycle	0.21	0.26	0.26	0.05	0.10	0.10	0.05	0.51	0.51	0.06	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.18	0.02	0.07	0.02	0.08	0.08	0.02	0.27	0.45	0.04	0.42	0.42
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1716	1583	3445	5074	1583	3445	3547	1844
c, Capacity [veh/h]	722	480	408	173	169	156	173	2595	810	208	1850	962
d1, Uniform Delay [s]	50.95	37.31	39.27	61.48	58.71	58.74	61.47	21.77	29.04	61.36	26.37	26.46
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.72	0.06	0.33	2.09	8.66	9.57	2.06	0.17	3.51	4.49	0.89	1.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

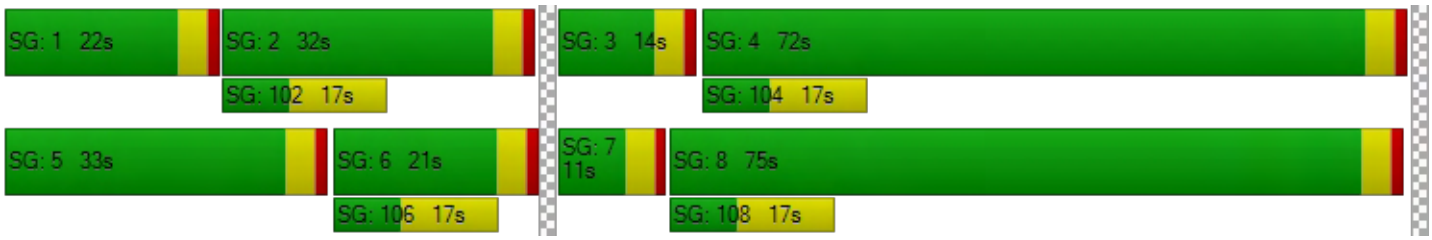
X, volume / capacity	0.88	0.07	0.26	0.48	0.81	0.81	0.48	0.53	0.89	0.71	0.81	0.81
d, Delay for Lane Group [s/veh]	54.67	37.37	39.61	63.57	67.37	68.31	63.53	21.93	32.55	65.85	27.26	28.19
Lane Group LOS	D	D	D	E	E	E	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	10.63	0.83	2.82	1.44	4.89	4.58	1.42	9.55	20.69	2.59	19.41	20.57
50th-Percentile Queue Length [ft/ln]	265.64	20.79	70.58	35.88	122.26	114.47	35.43	238.86	517.27	64.70	485.35	514.21
95th-Percentile Queue Length [veh/ln]	15.97	1.50	5.08	2.58	8.52	8.09	2.55	14.62	28.15	4.66	26.64	28.01
95th-Percentile Queue Length [ft/ln]	399.28	37.42	127.04	64.58	212.93	202.21	63.78	365.59	703.76	116.46	666.01	700.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.67	37.37	39.61	63.57	67.37	67.99	63.53	21.93	32.55	65.85	27.57	28.19
Movement LOS	D	D	D	E	E	E	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	51.87			66.79			27.03			29.91		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	34.02											
Intersection LOS	C											
Intersection V/C	0.865											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.475

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	509	39	92	302	0	0	0	0	119	0	178
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.00	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	529	41	96	314	0	0	0	0	124	0	185
Peak Hour Factor	1.0000	0.9190	0.9190	0.9190	0.9190	1.0000	1.0000	1.0000	1.0000	0.9190	1.0000	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	144	11	26	85	0	0	0	0	34	0	50
Total Analysis Volume [veh/h]	0	576	45	104	342	0	0	0	0	135	0	201
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	53	0	22	75	0	0	0	0	25	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	31	31	31	31		31	31	31
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	4	16		7	7	7
g / C, Green / Cycle	0.26	0.26	0.14	0.52		0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.16	0.03	0.06	0.10		0.07	0.07	0.07
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1608	1583
c, Capacity [veh/h]	917	409	241	1860		382	347	341
d1, Uniform Delay [s]	10.10	8.71	12.20	3.85		10.15	10.16	10.16
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.12	1.21	0.05		0.46	0.51	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.11	0.43	0.18		0.31	0.31	0.32
d, Delay for Lane Group [s/veh]	10.81	8.83	13.42	3.90		10.61	10.67	10.68
Lane Group LOS	B	A	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.27	0.17	0.58	0.23		0.54	0.49	0.49
50th-Percentile Queue Length [ft/ln]	31.86	4.32	14.43	5.87		13.38	12.36	12.21
95th-Percentile Queue Length [veh/ln]	2.29	0.31	1.04	0.42		0.96	0.89	0.88
95th-Percentile Queue Length [ft/ln]	57.35	7.77	25.97	10.57		24.09	22.25	21.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.81	8.83	13.42	3.90	0.00	0.00	0.00	0.00	10.62	0.00	10.68
Movement LOS		B	A	B	A					B		B
d_A, Approach Delay [s/veh]	10.67			6.12			0.00			10.66		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	9.22											
Intersection LOS	A											
Intersection V/C	0.475											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.779

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	310	152	88	40	180	369	249	624	277	24	640	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	3	2	8	2	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	324	158	92	42	187	387	261	657	290	25	677	48
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	88	43	25	11	51	105	71	178	79	7	183	13
Total Analysis Volume [veh/h]	351	171	100	46	203	419	283	712	314	27	733	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	39	0	19	40	0	18	31	0	11	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	68	68	68	68	68	68	68	68	68	68	68	68
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	26	26	4	21	21	8	19	19	3	13	13
g / C, Green / Cycle	0.14	0.39	0.39	0.06	0.31	0.31	0.12	0.28	0.28	0.04	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.10	0.05	0.06	0.03	0.11	0.26	0.08	0.20	0.20	0.01	0.15	0.15
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1801
c, Capacity [veh/h]	491	1378	615	106	570	485	415	977	436	143	697	354
d1, Uniform Delay [s]	27.93	13.40	13.61	30.94	18.43	22.33	28.76	22.40	22.34	31.60	25.80	25.83
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.96	0.04	0.12	2.75	0.38	4.75	1.99	1.06	2.25	0.64	1.61	3.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

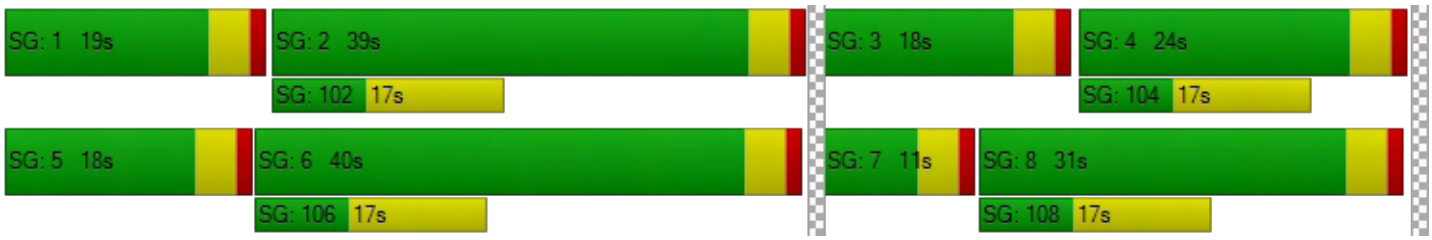
X, volume / capacity	0.71	0.12	0.16	0.43	0.36	0.86	0.68	0.73	0.72	0.19	0.75	0.75
d, Delay for Lane Group [s/veh]	29.89	13.44	13.73	33.69	18.81	27.08	30.75	23.46	24.59	32.23	27.41	29.04
Lane Group LOS	C	B	B	C	B	C	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.74	0.79	0.95	0.78	2.39	6.47	2.23	4.96	4.51	0.22	3.90	4.15
50th-Percentile Queue Length [ft/ln]	68.46	19.69	23.69	19.61	59.81	161.84	55.86	124.06	112.75	5.50	97.56	103.72
95th-Percentile Queue Length [veh/ln]	4.93	1.42	1.71	1.41	4.31	10.65	4.02	8.62	7.99	0.40	7.02	7.47
95th-Percentile Queue Length [ft/ln]	123.23	35.44	42.64	35.30	107.66	266.16	100.54	215.39	199.81	9.90	175.60	186.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.89	13.44	13.73	33.69	18.81	27.08	30.75	23.46	24.59	32.23	27.89	29.04
Movement LOS	C	B	B	C	B	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	22.77			25.02			25.31			28.10		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.46											
Intersection LOS	C											
Intersection V/C	0.779											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	29.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.806

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	214	176	128	79	240	408	236	1002	169	191	1415	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	2	1	8	3	0	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	227	183	133	82	250	426	246	1050	179	199	1475	52
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	49	36	22	67	114	66	282	48	53	396	14
Total Analysis Volume [veh/h]	244	197	143	88	269	458	264	1128	192	214	1584	56
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	27	27	14	28	28	16	47	0	12	43	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	17	31	6	14	38	20	51	51	10	41	41
g / C, Green / Cycle	0.10	0.17	0.31	0.06	0.14	0.38	0.20	0.51	0.51	0.10	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.09	0.05	0.08	0.29	0.08	0.36	0.37	0.06	0.31	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1770	3445	5074	1583
c, Capacity [veh/h]	331	596	486	115	486	596	688	946	899	341	2066	645
d1, Uniform Delay [s]	43.99	36.66	26.40	46.03	40.33	27.35	34.70	18.92	19.14	43.31	25.56	18.23
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.19	0.32	0.33	9.97	0.99	2.11	0.35	0.99	1.12	1.90	0.61	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

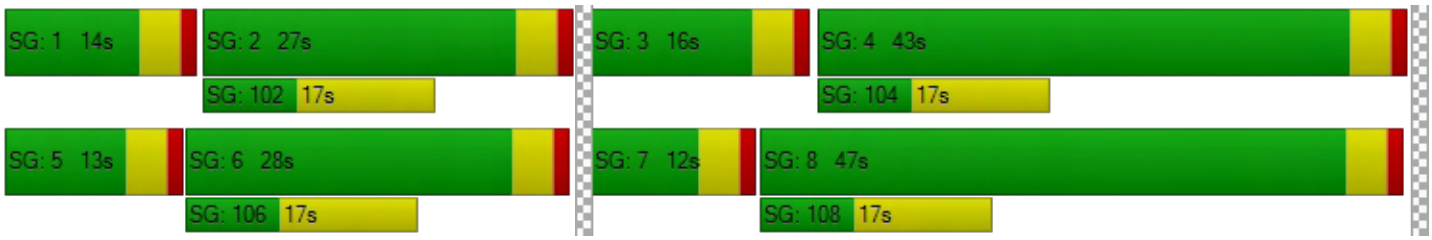
X, volume / capacity	0.74	0.33	0.29	0.76	0.55	0.77	0.38	0.71	0.72	0.63	0.77	0.09
d, Delay for Lane Group [s/veh]	47.18	36.98	26.74	56.00	41.32	29.47	35.05	19.91	20.25	45.21	26.18	18.29
Lane Group LOS	D	D	C	E	D	C	D	B	C	D	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.06	2.13	2.61	2.46	3.13	9.64	2.80	11.54	11.34	2.61	10.54	0.80
50th-Percentile Queue Length [ft/ln]	76.55	53.35	65.37	61.39	78.35	241.07	69.93	288.60	283.52	65.36	263.41	19.96
95th-Percentile Queue Length [veh/ln]	5.51	3.84	4.71	4.42	5.64	14.74	5.03	17.12	16.86	4.71	15.86	1.44
95th-Percentile Queue Length [ft/ln]	137.80	96.03	117.66	110.49	141.02	368.38	125.87	427.91	421.60	117.64	396.50	35.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.18	36.98	26.74	56.00	41.32	29.47	35.05	20.05	20.25	45.21	26.18	18.29
Movement LOS	D	D	C	E	D	C	D	C	C	D	C	B
d_A, Approach Delay [s/veh]	38.73			36.25			22.58			28.14		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.96											
Intersection LOS	C											
Intersection V/C	0.806											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME.vistro

Scenario 4 Existing Plus Ambient Growth Plus Project Evening Peak Hour

Report File: C:\...\PMEAP.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.747	22.2	C
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	NB Left	0.655	17.8	B
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	SB Thru	0.264	9.4	A
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	SB Left	0.360	9.8	A
5	Sherman Rd (NS) at MFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	8.7	A
6	Sherman Rd (NS) at SFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	8.6	A
7	MFR Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Left	0.008	12.4	B
8	Commercial Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Right	0.036	9.6	A
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.903	44.0	D
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	NB Thru	0.950	40.1	E
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	EB Left	0.599	95.3	F
12	Haun Rd (NS) at North Project Access (EW)	Signalized	HCM 2010	EB Left	0.507	8.2	A
13	Haun Rd (NS) at Central Project Access (EW)	Signalized	HCM 2010	EB Left	0.443	7.8	A
14	Haun Rd (NS) at South Project Access (EW)	Two-way stop	HCM 2010	EB Right	0.088	12.6	B
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.760	21.9	C
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.669	17.8	B
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.739	6.4	A

18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.723	25.6	C
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.757	2.8	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.857	50.2	D
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.483	9.0	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.746	24.8	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.832	22.8	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.747

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	85	113	160	225	157	104	120	1108	48	284	1227	282
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	19	0	16	19	0	0	10	21	0	12	17
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	137	166	250	182	108	125	1162	71	295	1288	310
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	35	43	64	47	28	32	299	18	76	331	80
Total Analysis Volume [veh/h]	111	141	171	257	187	111	128	1194	73	303	1324	319
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	21	21	28	37	0	14	35	0	16	37	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	67	67	67	67	67	67	67	67	67	67	67	67
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	8	21	12	13	13	6	22	22	9	25	25
g / C, Green / Cycle	0.09	0.11	0.31	0.18	0.20	0.20	0.10	0.33	0.33	0.13	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.06	0.08	0.11	0.14	0.08	0.09	0.07	0.24	0.24	0.09	0.26	0.20
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1636	1774	3547	1808	3445	5074	1583
c, Capacity [veh/h]	163	213	489	316	375	329	170	1183	603	464	1889	590
d1, Uniform Delay [s]	29.47	28.40	17.93	26.43	23.33	23.38	29.49	19.47	19.47	27.49	17.84	16.52
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.98	3.48	0.43	5.02	0.75	0.88	6.56	0.80	1.55	1.56	0.48	0.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

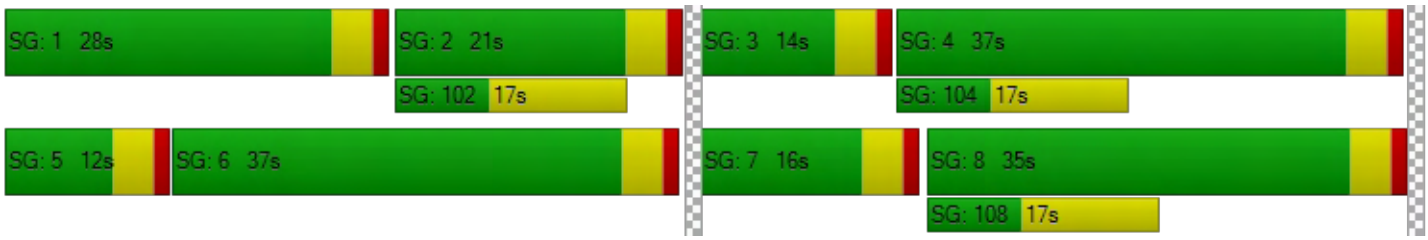
X, volume / capacity	0.68	0.66	0.35	0.81	0.42	0.43	0.75	0.71	0.71	0.65	0.70	0.54
d, Delay for Lane Group [s/veh]	34.44	31.88	18.35	31.45	24.07	24.26	36.05	20.27	21.03	29.05	18.32	17.29
Lane Group LOS	C	C	B	C	C	C	D	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.88	2.27	1.96	4.15	2.12	1.92	2.23	5.34	5.57	2.29	5.31	3.62
50th-Percentile Queue Length [ft/ln]	46.93	56.78	49.05	103.87	53.10	48.07	55.63	133.48	139.29	57.18	132.82	90.62
95th-Percentile Queue Length [veh/ln]	3.38	4.09	3.53	7.48	3.82	3.46	4.01	9.13	9.44	4.12	9.09	6.52
95th-Percentile Queue Length [ft/ln]	84.48	102.20	88.29	186.97	95.58	86.52	100.14	228.21	236.07	102.93	227.32	163.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.44	31.88	18.35	31.45	24.10	24.26	36.05	20.50	21.03	29.05	18.32	17.29
Movement LOS	C	C	B	C	C	C	D	C	C	C	B	B
d_A, Approach Delay [s/veh]	27.09			27.54			21.95			19.83		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	22.21											
Intersection LOS	C											
Intersection V/C	0.747											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.655

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	124	68	87	175	67	61	180	48	64	268	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	68	8	0	65	0	0	0	11	8	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	197	79	90	247	70	63	187	61	75	279	138
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	52	21	24	65	19	17	49	16	20	74	37
Total Analysis Volume [veh/h]	35	208	84	95	261	74	67	198	65	79	295	146
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	37	0	15	41	0	12	35	0	13	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	44	44	44	44	44	44	44	44	44	44
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	9	5	12	12	4	9	4	10	10
g / C, Green / Cycle	0.06	0.21	0.11	0.27	0.27	0.09	0.21	0.10	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.02	0.16	0.05	0.14	0.05	0.04	0.15	0.04	0.16	0.09
s, saturation flow rate [veh/h]	1774	1773	1774	1863	1583	1774	1785	1774	1863	1583
c, Capacity [veh/h]	100	380	197	500	425	161	374	178	408	347
d1, Uniform Delay [s]	19.90	16.20	18.30	13.64	12.30	18.84	16.06	18.57	15.87	14.72
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.06	3.30	1.83	0.84	0.19	1.72	2.41	1.74	2.43	0.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.77	0.48	0.52	0.17	0.42	0.70	0.44	0.72	0.42
d, Delay for Lane Group [s/veh]	21.96	19.50	20.13	14.48	12.49	20.56	18.47	20.31	18.30	15.53
Lane Group LOS	C	B	C	B	B	C	B	C	B	B
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.36	2.67	0.89	1.93	0.49	0.64	2.32	0.75	2.58	1.14
50th-Percentile Queue Length [ft/ln]	9.07	66.78	22.30	48.35	12.18	16.09	57.93	18.73	64.56	28.42
95th-Percentile Queue Length [veh/ln]	0.65	4.81	1.61	3.48	0.88	1.16	4.17	1.35	4.65	2.05
95th-Percentile Queue Length [ft/ln]	16.32	120.21	40.13	87.03	21.93	28.95	104.27	33.71	116.20	51.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.96	19.50	19.50	20.13	14.48	12.49	20.56	18.47	18.47	20.31	18.30	15.53
Movement LOS	C	B	B	C	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	19.77			15.39			18.89			17.83		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	17.79											
Intersection LOS	B											
Intersection V/C	0.655											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.264

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	39	55	2	3	80	98	115	1	48	0	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	88	0	0	87	0	0	0	7	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	145	2	3	170	102	120	1	57	0	1	4
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	37	1	1	44	26	31	0	15	0	0	1
Total Analysis Volume [veh/h]	43	149	2	3	175	105	124	1	59	0	1	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	734	687	796	721	741
Degree of Utilization, x	0.26	0.26	0.13	0.25	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.06	1.03	0.45	1.01	0.02
95th-Percentile Queue Length [ft]	26.53	25.78	11.34	25.28	0.51
Approach Delay [s/veh]	9.66	9.07		9.68	7.89
Approach LOS	A	A		A	A
Intersection Delay [s/veh]	9.40				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.360

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	2	87	2	0	0	2	0	0	2	96
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	105	10	0	0	0	0	0	0	89
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	9	2	195	12	0	0	2	0	0	2	189
Peak Hour Factor	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	1	64	4	0	0	1	0	0	1	62
Total Analysis Volume [veh/h]	0	12	3	257	16	0	0	3	0	0	3	249
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	755	759	708	684	789
Degree of Utilization, x	0.02	0.36	0.00	0.00	0.32

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.06	1.64	0.01	0.01	1.36
95th-Percentile Queue Length [ft]	1.52	41.05	0.32	0.33	33.90
Approach Delay [s/veh]	7.87	10.39	8.11	9.34	
Approach LOS	A	B	A	A	
Intersection Delay [s/veh]	9.82				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 5: Sherman Rd (NS) at MFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	5	0	0	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	10	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	0	10	2	0	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	3	1	0	2
Total Analysis Volume [veh/h]	5	0	11	2	0	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.24	0.00	8.70	8.36
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.47	0.47	0.42	0.42
d_A, Approach Delay [s/veh]	0.00		6.13		8.36	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.41					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Sherman Rd (NS) at SFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	5	0	0	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	0	0	2	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	1	0	0
Total Analysis Volume [veh/h]	5	0	0	2	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.23	0.00	8.55	8.34
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		8.44	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: MFR Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	90	0	0	97
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	30	99	6	50	85
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	30	193	6	50	186
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	8	51	2	13	49
Total Analysis Volume [veh/h]	4	32	203	6	53	196
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	12.38	9.54	0.00	0.00	7.75	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.11	0.06
95th-Percentile Queue Length [ft/ln]	3.64	3.64	0.00	0.00	2.86	1.43
d_A, Approach Delay [s/veh]	9.85		0.00		1.65	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.55					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Commercial Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.036

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	90	0	0	97
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.00	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	28	113	16	0	135
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	28	207	16	0	236
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	54	4	0	62
Total Analysis Volume [veh/h]	0	29	218	17	0	248
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.59	0.00	0.00	0.00	0.00
Movement LOS		A	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.11	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	2.77	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.59		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.54					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	44.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.903

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	344	91	813	337	126	109	132	1152	260	889	1249	218
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	0	89	0	0	0	0	0	26	90	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	387	95	935	350	131	113	137	1198	296	1015	1299	227
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	24	239	90	34	29	35	307	76	260	332	58
Total Analysis Volume [veh/h]	396	97	957	358	134	116	140	1226	303	1039	1330	232
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	21	21	24	21	0	43	43	0	52	52	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	157	157	157	157	157	157	157	157	157	157	157	157
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	22	81	19	20	20	9	44	44	55	91	91
g / C, Green / Cycle	0.13	0.14	0.52	0.12	0.13	0.13	0.06	0.28	0.28	0.35	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.11	0.05	0.34	0.10	0.07	0.07	0.04	0.24	0.19	0.30	0.29	0.31
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1584	3445	5074	1583	3445	3547	1729
c, Capacity [veh/h]	459	258	1452	419	237	201	191	1440	449	1219	2066	1007
d1, Uniform Delay [s]	66.53	61.35	27.65	67.47	64.35	64.45	72.90	53.01	49.71	46.84	19.29	19.67
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.95	0.90	0.52	5.05	2.12	2.61	5.41	1.51	1.77	1.79	0.19	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.38	0.66	0.85	0.57	0.58	0.73	0.85	0.67	0.85	0.50	0.52
d, Delay for Lane Group [s/veh]	71.48	62.26	28.17	72.52	66.46	67.06	78.31	54.52	51.48	48.63	19.48	20.09
Lane Group LOS	E	E	C	E	E	E	E	D	D	D	B	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.11	3.60	13.24	7.35	5.20	4.55	2.93	15.44	10.81	19.06	11.22	11.72
50th-Percentile Queue Length [ft/ln]	202.65	90.11	331.11	183.76	129.93	113.66	73.28	385.92	270.37	476.59	280.39	293.01
95th-Percentile Queue Length [veh/ln]	12.78	6.49	19.21	11.80	8.94	8.04	5.28	21.88	16.21	26.22	16.71	17.33
95th-Percentile Queue Length [ft/ln]	319.38	162.20	480.32	294.92	223.40	201.08	131.90	547.01	405.21	655.60	417.70	433.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	71.48	62.26	28.17	72.52	66.46	67.06	78.31	54.52	51.48	48.63	19.62	20.09
Movement LOS	E	E	C	E	E	E	E	D	D	D	B	C
d_A, Approach Delay [s/veh]	42.28			70.14			55.97			31.25		
Approach LOS	D			E			E			C		
d_I, Intersection Delay [s/veh]	44.03											
Intersection LOS	D											
Intersection V/C	0.903											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	40.1
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.950

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	241	255	2	4	258	293	245	2	118	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	120	0	0	119	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	251	385	2	4	387	305	255	2	123	0	0	4
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	102	1	1	103	81	68	1	33	0	0	1
Total Analysis Volume [veh/h]	267	410	2	4	412	324	271	2	131	0	0	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	408	433	411	437	480	408	433	474	361
Degree of Utilization, x	0.65	0.95	0.01	0.94	0.68	0.66	0.00	0.28	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	4.52	11.15	0.03	10.95	4.98	4.66	0.01	1.12	0.03
95th-Percentile Queue Length [ft]	113.03	278.78	0.74	273.65	124.62	116.61	0.35	27.92	0.84
Approach Delay [s/veh]	47.17		43.30			22.66			13.09
Approach LOS	E		E			C			B
Intersection Delay [s/veh]	40.11								
Intersection LOS	E								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	95.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.599

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	82	472	0	0	349	13	7	0	82	4	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	108	103	0	0	110	27	44	0	97	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	193	594	0	0	473	41	51	0	182	4	0	0
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	152	0	0	121	11	13	0	47	1	0	0
Total Analysis Volume [veh/h]	198	610	0	0	486	42	52	0	187	4	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.01	0.00	0.00	0.00	0.00	0.60	0.00	0.32	0.07	0.00	0.00
d_M, Delay for Movement [s/veh]	9.28	0.00	0.00	8.72	0.00	0.00	95.28	43.95	14.10	72.98	47.96	17.01
Movement LOS	A	A	A	A	A	A	F	E	B	F	E	C
95th-Percentile Queue Length [veh/ln]	0.70	0.00	0.00	0.00	0.00	0.00	2.75	1.38	1.38	0.22	0.22	0.22
95th-Percentile Queue Length [ft/ln]	17.54	0.00	0.00	0.00	0.00	0.00	68.70	34.60	34.60	5.49	5.49	5.49
d_A, Approach Delay [s/veh]	2.27			0.00			31.77			72.98		
Approach LOS	A			A			D			F		
d_I, Intersection Delay [s/veh]	6.16											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: Haun Rd (NS) at North Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.507

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	118	103	104	93	38
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	694	551	104	93	38
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	183	145	27	24	10
Total Analysis Volume [veh/h]	36	731	580	109	98	40
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	35	35	0	85	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	24	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	100	100	100	100	12
g / C, Green / Cycle	0.84	0.84	0.84	0.84	0.10
(v / s)_i Volume / Saturation Flow Rate	0.05	0.39	0.18	0.20	0.08
s, saturation flow rate [veh/h]	751	1863	1863	1764	1714
c, Capacity [veh/h]	643	1556	1556	1473	169
d1, Uniform Delay [s]	3.15	2.69	2.00	2.03	53.10
k, delay calibration	0.50	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	1.02	0.33	0.37	9.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

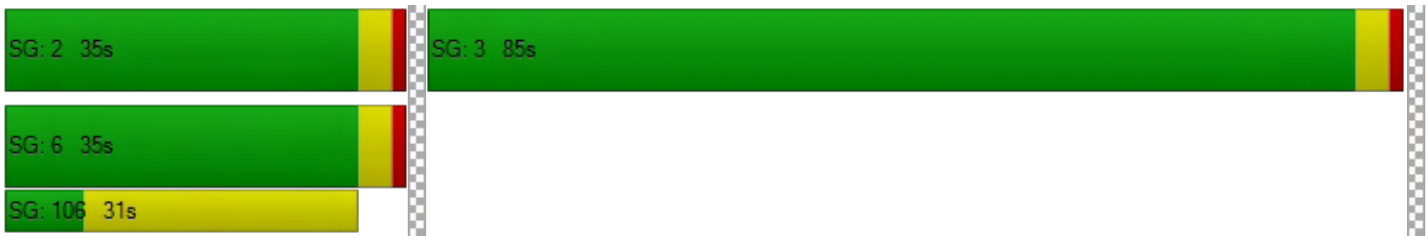
X, volume / capacity	0.06	0.47	0.22	0.23	0.82
d, Delay for Lane Group [s/veh]	3.32	3.71	2.33	2.40	62.45
Lane Group LOS	A	A	A	A	E
Critical Lane Group	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.20	3.57	1.24	1.27	4.52
50th-Percentile Queue Length [ft/ln]	5.05	89.34	31.06	31.67	113.00
95th-Percentile Queue Length [veh/ln]	0.36	6.43	2.24	2.28	8.01
95th-Percentile Queue Length [ft/ln]	9.10	160.82	55.91	57.01	200.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.32	3.71	2.36	2.40	62.45	62.45
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	3.69		2.37		62.45	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	8.21					
Intersection LOS	A					
Intersection V/C	0.507					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Haun Rd (NS) at Central Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	7.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	72	57	52	89	95	41
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	633	500	89	95	41
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	167	132	23	25	11
Total Analysis Volume [veh/h]	76	666	526	94	100	43
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	30	30	0	90	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	19	19	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	103	103	103	103	9	9
g / C, Green / Cycle	0.86	0.86	0.86	0.86	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.09	0.36	0.17	0.18	0.06	0.03
s, saturation flow rate [veh/h]	800	1863	1863	1768	1774	1583
c, Capacity [veh/h]	708	1599	1599	1518	133	119
d1, Uniform Delay [s]	2.41	1.88	1.45	1.46	54.45	52.82
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.80	0.27	0.30	8.20	1.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

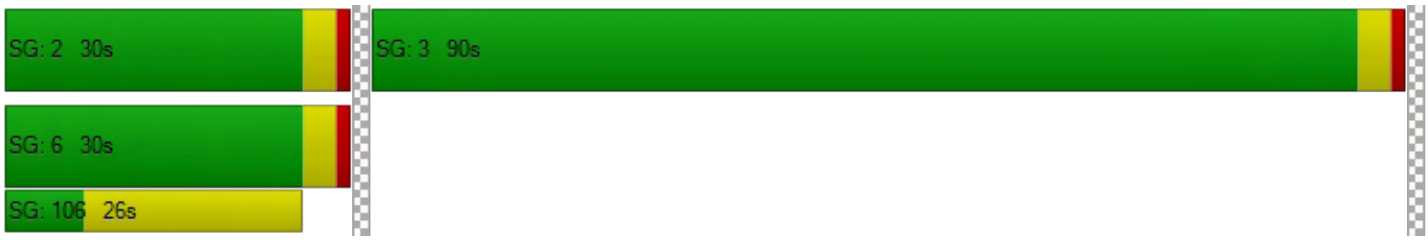
X, volume / capacity	0.11	0.42	0.19	0.20	0.75	0.36
d, Delay for Lane Group [s/veh]	2.71	2.68	1.72	1.77	62.66	54.66
Lane Group LOS	A	A	A	A	E	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.35	2.25	0.80	0.81	3.27	1.30
50th-Percentile Queue Length [ft/ln]	8.75	56.24	19.99	20.37	81.71	32.44
95th-Percentile Queue Length [veh/ln]	0.63	4.05	1.44	1.47	5.88	2.34
95th-Percentile Queue Length [ft/ln]	15.75	101.23	35.98	36.67	147.08	58.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.71	2.68	1.74	1.77	62.66	54.66
Movement LOS	A	A	A	A	E	D
d_A, Approach Delay [s/veh]	2.68		1.74		60.25	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	7.76					
Intersection LOS	A					
Intersection V/C	0.443					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Haun Rd (NS) at South Project Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.088

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.00	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	129	94	0	0	44
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	705	542	0	0	44
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	186	143	0	0	12
Total Analysis Volume [veh/h]	0	742	571	0	0	46
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.09
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	12.59
Movement LOS		A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.29
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	7.24
d_A, Approach Delay [s/veh]	0.00		0.00		12.59	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	21.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.760

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	51	32	319	19	43	39	435	20	55	441	467
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	94	0	17	16	0	0	0	0	94
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	53	33	426	20	62	57	452	21	57	459	580
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	14	8	109	5	16	15	116	5	15	118	149
Total Analysis Volume [veh/h]	35	54	34	437	21	64	58	464	22	58	471	595
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	44	0	14	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	13	13	5	30	30	5	30	30
g / C, Green / Cycle	0.09	0.09	0.09	0.19	0.19	0.07	0.42	0.42	0.07	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.02	0.15	0.15	0.03	0.13	0.13	0.03	0.13	0.38
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1729	1774	1863	1833	1774	3547	1583
c, Capacity [veh/h]	161	169	144	337	328	121	788	776	121	1500	670
d1, Uniform Delay [s]	29.56	29.85	29.62	27.04	27.04	31.50	13.44	13.44	31.50	13.46	18.70
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.67	1.07	0.83	4.03	4.13	2.96	0.22	0.23	2.96	0.12	4.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

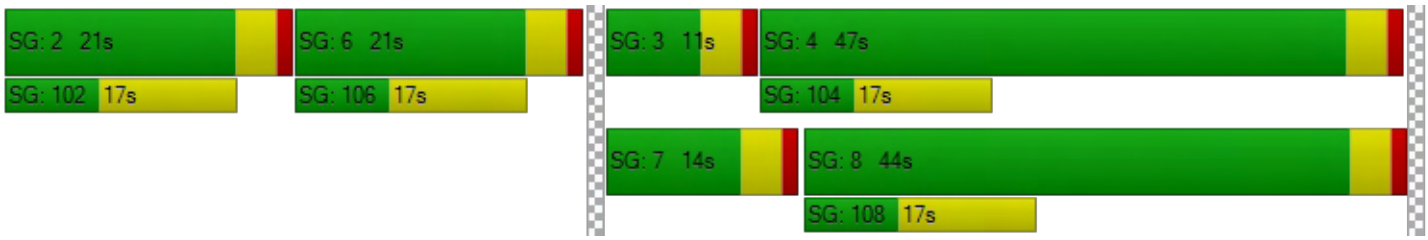
X, volume / capacity	0.22	0.32	0.24	0.78	0.78	0.48	0.31	0.31	0.48	0.31	0.89
d, Delay for Lane Group [s/veh]	30.23	30.92	30.45	31.07	31.18	34.45	13.66	13.67	34.45	13.58	22.96
Lane Group LOS	C	C	C	C	C	C	B	B	C	B	C
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.56	0.87	0.55	4.37	4.27	1.01	2.40	2.37	1.01	2.29	8.74
50th-Percentile Queue Length [ft/ln]	13.94	21.82	13.68	109.35	106.82	25.31	59.90	59.18	25.31	57.22	218.49
95th-Percentile Queue Length [veh/ln]	1.00	1.57	0.98	7.80	7.66	1.82	4.31	4.26	1.82	4.12	13.59
95th-Percentile Queue Length [ft/ln]	25.10	39.27	24.62	195.10	191.58	45.56	107.82	106.52	45.56	103.00	339.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.23	30.92	30.45	31.11	31.18	31.18	34.45	13.66	13.67	34.45	13.58	22.96
Movement LOS	C	C	C	C	C	C	C	B	B	C	B	C
d_A, Approach Delay [s/veh]	30.59			31.12			15.88			19.62		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.92											
Intersection LOS	C											
Intersection V/C	0.760											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.669

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	419	0	582	0	1721	464	0	1844	466
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.00	1.04	1.00	1.04	1.04	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	44	0	89	0	0	46	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	436	0	649	0	1879	483	0	1964	485
Peak Hour Factor	1.0000	1.0000	1.0000	0.9870	1.0000	0.9870	1.0000	0.9870	0.9870	1.0000	0.9870	0.9870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	110	0	164	0	476	0	0	497	0
Total Analysis Volume [veh/h]	0	0	0	442	0	658	0	1904	0	0	1990	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	81	0	0	0	59	0	0	59	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		118	118	118	118	118	118	118
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		31	31	31	78	78	78	78
g / C, Green / Cycle		0.27	0.27	0.27	0.67	0.67	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate		0.21	0.23	0.23	0.28	0.00	0.39	0.00
s, saturation flow rate [veh/h]		1774	1619	1583	6765	1583	5074	1583
c, Capacity [veh/h]		473	432	422	4501	1053	3376	1053
d1, Uniform Delay [s]		39.89	40.91	41.19	9.18	0.00	10.85	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.75	4.73	5.54	0.06	0.00	0.17	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

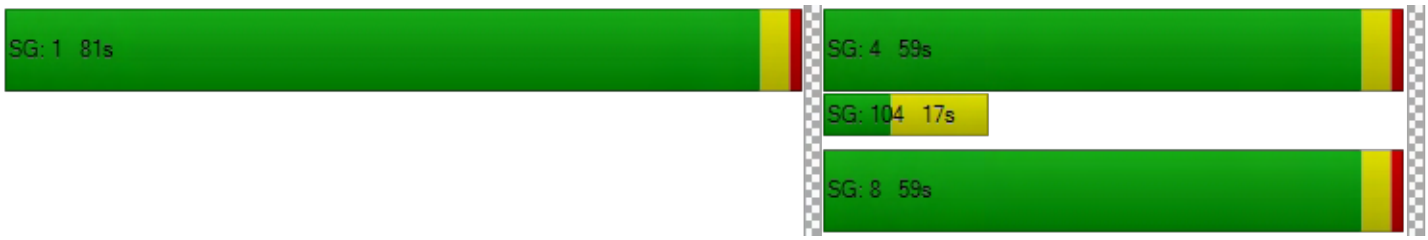
X, volume / capacity		0.77	0.85	0.87	0.42	0.00	0.59	0.00
d, Delay for Lane Group [s/veh]		42.65	45.65	46.73	9.24	0.00	11.01	0.00
Lane Group LOS		D	D	D	A	A	B	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		10.10	10.55	10.70	5.35	0.00	8.83	0.00
50th-Percentile Queue Length [ft/ln]		252.48	263.85	267.58	133.64	0.00	220.65	0.00
95th-Percentile Queue Length [veh/ln]		15.31	15.88	16.07	9.14	0.00	13.70	0.00
95th-Percentile Queue Length [ft/ln]		382.78	397.05	401.72	228.44	0.00	342.46	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	43.16	0.00	46.25	0.00	9.24	0.00	0.00	11.01	0.00
Movement LOS				D		D		A	A		B	A
d_A, Approach Delay [s/veh]	0.00			45.01			9.24			11.01		
Approach LOS	A			D			A			B		
d_I, Intersection Delay [s/veh]	17.83											
Intersection LOS	B											
Intersection V/C	0.669											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.739

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	392	0	155	0	497	238	0	680	413
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.00	1.04	1.00	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	39	55	0	94	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	408	0	161	0	556	303	0	801	430
Peak Hour Factor	1.0000	1.0000	1.0000	0.9470	1.0000	0.9470	1.0000	0.9470	0.9470	0.9470	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	108	0	43	0	147	80	0	211	114
Total Analysis Volume [veh/h]	0	0	0	431	0	170	0	587	320	0	846	454
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	32	0	0	0	68	0	0	68	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		27	27	27	27	27	27
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		7	7	12	12	12	12
g / C, Green / Cycle		0.26	0.26	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate		0.13	0.06	0.17	0.20	0.24	0.29
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		883	718	1596	712	1596	712
d1, Uniform Delay [s]		8.61	8.02	4.94	5.16	5.41	5.77
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.42	0.17	0.14	0.44	0.27	0.95
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

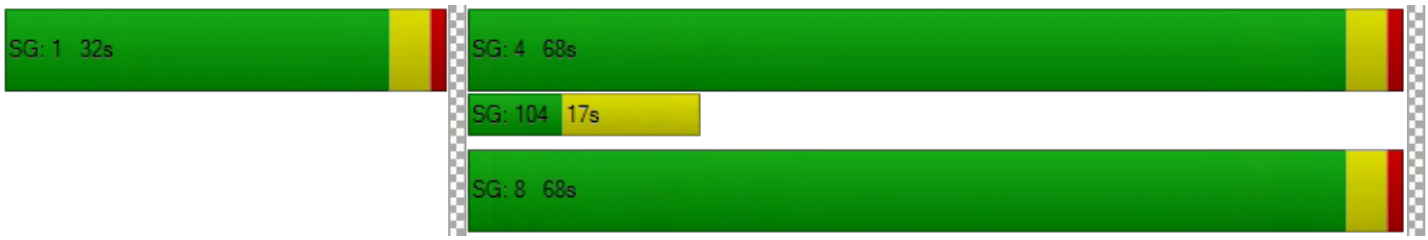
X, volume / capacity		0.49	0.24	0.37	0.45	0.53	0.64
d, Delay for Lane Group [s/veh]		9.03	8.18	5.08	5.61	5.68	6.73
Lane Group LOS		A	A	A	A	A	A
Critical Lane Group		Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		0.72	0.26	0.48	0.60	0.77	1.00
50th-Percentile Queue Length [ft/ln]		18.02	6.57	11.94	14.92	19.14	24.91
95th-Percentile Queue Length [veh/ln]		1.30	0.47	0.86	1.07	1.38	1.79
95th-Percentile Queue Length [ft/ln]		32.44	11.82	21.49	26.85	34.45	44.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.03	0.00	8.18	0.00	5.08	5.61	0.00	5.68	6.73
Movement LOS				A		A		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			8.79			5.26			6.05		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	6.38											
Intersection LOS	A											
Intersection V/C	0.739											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.723

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	517	0	746	0	0	0	0	1885	382	0	1690	480
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.04	1.00	1.00	1.00	1.00	1.04	1.04	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	47	42	0	46	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	538	0	776	0	0	0	0	2007	439	0	1804	499
Peak Hour Factor	0.9810	1.0000	0.9810	1.0000	1.0000	1.0000	1.0000	0.9810	0.9810	1.0000	0.9810	0.9810
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	137	0	198	0	0	0	0	511	0	0	460	0
Total Analysis Volume [veh/h]	548	0	791	0	0	0	0	2046	0	0	1839	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	58	0	0	0	0	0	0	82	0	0	82	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	153	153	153		153	153	153	153
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	48		97	97	97	97
g / C, Green / Cycle	0.31	0.31	0.31		0.64	0.64	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.25	0.27	0.28		0.40	0.00	0.27	0.00
s, saturation flow rate [veh/h]	1774	1623	1583		5074	1583	6765	1583
c, Capacity [veh/h]	553	506	493		3228	1007	4304	1007
d1, Uniform Delay [s]	48.49	50.06	50.54		16.99	0.00	13.93	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.85	5.25	6.49		0.21	0.00	0.07	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

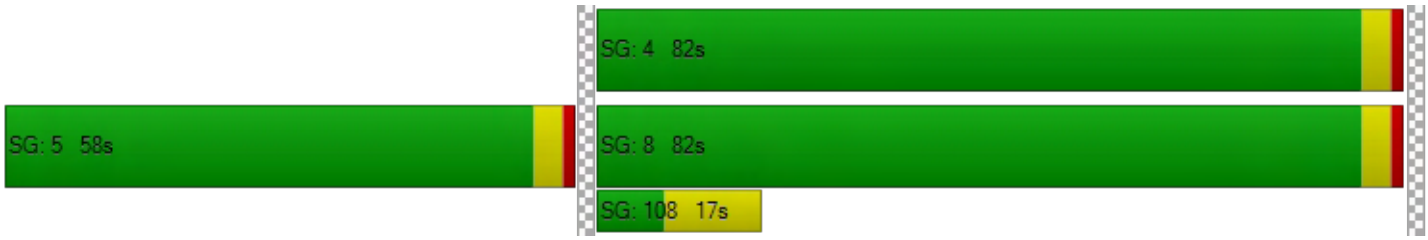
X, volume / capacity	0.81	0.88	0.90		0.63	0.00	0.43	0.00
d, Delay for Lane Group [s/veh]	51.34	55.30	57.02		17.20	0.00	13.99	0.00
Lane Group LOS	D	E	E		B	A	B	A
Critical Lane Group	No	No	Yes		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	16.18	16.98	17.29		14.44	0.00	7.96	0.00
50th-Percentile Queue Length [ft/ln]	404.38	424.55	432.25		360.97	0.00	199.07	0.00
95th-Percentile Queue Length [veh/ln]	22.77	23.74	24.11		20.67	0.00	12.59	0.00
95th-Percentile Queue Length [ft/ln]	569.27	593.51	602.74		516.76	0.00	314.76	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.08	0.00	56.27	0.00	0.00	0.00	0.00	17.20	0.00	0.00	13.99	0.00
Movement LOS	D		E					B	A		B	A
d_A, Approach Delay [s/veh]	54.56			0.00			17.20			13.99		
Approach LOS	D			A			B			B		
d_I, Intersection Delay [s/veh]	25.65											
Intersection LOS	C											
Intersection V/C	0.723											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	2.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.757

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	490	0	0	345	70	831	0	0	759	395
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.04	1.00	1.00	1.04	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	57	0	39	0	0	37	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	510	0	0	416	73	903	0	0	826	411
Peak Hour Factor	0.9650	1.0000	0.9650	1.0000	1.0000	0.9650	0.9650	0.9650	1.0000	1.0000	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	132	0	0	108	19	234	0	0	214	106
Total Analysis Volume [veh/h]	0	0	528	0	0	431	76	936	0	0	856	426
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	17	100	0	0	83	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			20	20	20	20
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			2	16	10	10
g / C, Green / Cycle			0.12	0.80	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate			0.04	0.26	0.24	0.27
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			218	2854	1725	770
d1, Uniform Delay [s]			8.23	0.53	3.56	3.70
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			0.95	0.07	0.22	0.62
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.35	0.33	0.50	0.55
d, Delay for Lane Group [s/veh]			9.18	0.60	3.78	4.32
Lane Group LOS			A	A	A	A
Critical Lane Group			Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]			0.22	0.03	0.07	0.15
50th-Percentile Queue Length [ft/ln]			5.59	0.66	1.74	3.76
95th-Percentile Queue Length [veh/ln]			0.40	0.05	0.13	0.27
95th-Percentile Queue Length [ft/ln]			10.06	1.19	3.14	6.77

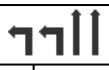
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	9.18	0.60	0.00	0.00	3.78	4.32
Movement LOS							A	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			1.24			3.96		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.76											
Intersection LOS	A											
Intersection V/C	0.757											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	50.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.857

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	693	108	189	28	78	147	145	1761	633	174	1352	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	0	0	0	0	5	6	27	14	0	28	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	734	112	197	29	81	158	157	1858	672	181	1434	28
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	190	29	51	8	21	41	41	481	174	47	371	7
Total Analysis Volume [veh/h]	760	116	204	30	84	164	163	1923	696	187	1484	29
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	37	24	0	34	21	0	33	69	0	13	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	204	204	204	204	204	204	204	204	204	204	204	204
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	49	61	61	6	18	18	12	108	108	13	109	109
g / C, Green / Cycle	0.24	0.30	0.30	0.03	0.09	0.09	0.06	0.53	0.53	0.07	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.22	0.06	0.13	0.01	0.07	0.07	0.05	0.38	0.44	0.05	0.28	0.28
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1754	1583	3445	5074	1583	3445	3547	1845
c, Capacity [veh/h]	821	554	471	97	153	138	203	2689	839	228	1905	991
d1, Uniform Delay [s]	75.93	53.71	57.82	97.18	91.75	91.87	94.79	36.27	40.19	94.02	30.36	30.36
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.29	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.14	0.19	0.63	1.80	11.93	14.21	7.18	0.36	5.67	7.12	0.22	0.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.21	0.43	0.31	0.85	0.86	0.80	0.72	0.83	0.82	0.52	0.52
d, Delay for Lane Group [s/veh]	81.07	53.90	58.45	98.97	103.68	106.08	101.96	36.63	45.87	101.15	30.58	30.79
Lane Group LOS	F	D	E	F	F	F	F	D	D	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	20.21	4.59	8.72	0.81	7.32	6.81	4.51	24.56	30.77	5.17	16.18	16.89
50th-Percentile Queue Length [ft/ln]	505.13	114.84	218.10	20.32	182.91	170.14	112.81	614.11	769.25	129.15	404.45	422.26
95th-Percentile Queue Length [veh/ln]	27.58	8.11	13.57	1.46	11.75	11.08	8.00	32.69	39.87	8.89	22.77	23.63
95th-Percentile Queue Length [ft/ln]	689.43	202.71	339.20	36.58	293.81	277.10	199.91	817.32	996.68	222.34	569.36	590.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	81.07	53.90	58.45	98.97	103.68	105.46	101.96	36.63	45.87	101.15	30.65	30.79
Movement LOS	F	D	E	F	F	F	F	D	D	F	C	C
d_A, Approach Delay [s/veh]	73.88			104.20			42.77			38.40		
Approach LOS	E			F			D			D		
d_I, Intersection Delay [s/veh]	50.18											
Intersection LOS	D											
Intersection V/C	0.857											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.483

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	410	88	191	431	0	0	0	0	71	0	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.00	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	426	92	199	448	0	0	0	0	74	0	130
Peak Hour Factor	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	115	25	54	121	0	0	0	0	20	0	35
Total Analysis Volume [veh/h]	0	460	99	215	483	0	0	0	0	80	0	140
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	41	0	38	79	0	0	0	0	21	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	31	31	31	31		31	31	31
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	6	17		6	6	6
g / C, Green / Cycle	0.23	0.23	0.19	0.55		0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.13	0.06	0.12	0.14		0.04	0.04	0.04
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1590	1583
c, Capacity [veh/h]	802	358	343	1945		344	309	307
d1, Uniform Delay [s]	10.68	9.92	11.50	3.67		10.54	10.56	10.56
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.65	0.41	1.89	0.07		0.33	0.38	0.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

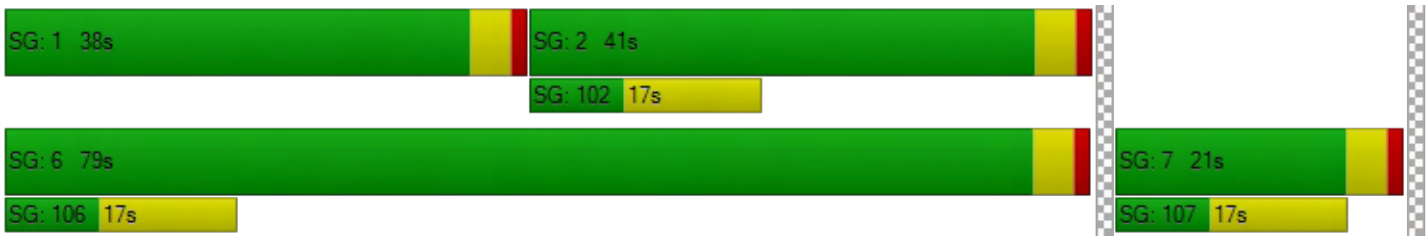
X, volume / capacity	0.57	0.28	0.63	0.25		0.22	0.23	0.23
d, Delay for Lane Group [s/veh]	11.33	10.33	13.38	3.73		10.87	10.94	10.94
Lane Group LOS	B	B	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.07	0.44	1.17	0.30		0.36	0.33	0.33
50th-Percentile Queue Length [ft/ln]	26.69	10.97	29.28	7.45		8.95	8.37	8.35
95th-Percentile Queue Length [veh/ln]	1.92	0.79	2.11	0.54		0.64	0.60	0.60
95th-Percentile Queue Length [ft/ln]	48.05	19.75	52.70	13.40		16.11	15.07	15.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	11.33	10.33	13.38	3.73	0.00	0.00	0.00	0.00	10.88	0.00	10.94
Movement LOS		B	B	B	A					B		B
d_A, Approach Delay [s/veh]	11.15			6.71			0.00			10.92		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	9.02											
Intersection LOS	A											
Intersection V/C	0.483											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	24.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	392	287	189	59	167	279	271	777	283	60	508	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	0	8	8	24	7	0	23	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	414	298	197	61	174	298	290	832	301	62	551	56
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	106	76	50	16	45	76	74	213	77	16	141	14
Total Analysis Volume [veh/h]	424	305	202	63	178	305	297	852	308	64	565	57
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	23	0	30	32	0	26	36	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	69	69	69	69	69	69	69	69	69	69	69	69
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	23	23	5	16	16	9	21	21	5	17	17
g / C, Green / Cycle	0.17	0.33	0.33	0.07	0.23	0.23	0.12	0.30	0.30	0.07	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.12	0.09	0.13	0.04	0.10	0.19	0.09	0.24	0.19	0.02	0.12	0.12
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1777
c, Capacity [veh/h]	569	1156	516	126	432	367	428	1069	477	247	883	442
d1, Uniform Delay [s]	27.66	17.31	18.13	31.14	22.71	25.44	29.22	22.36	21.09	30.56	22.22	22.26
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.96	0.12	0.48	3.03	0.63	4.90	2.03	1.41	1.47	0.55	0.39	0.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

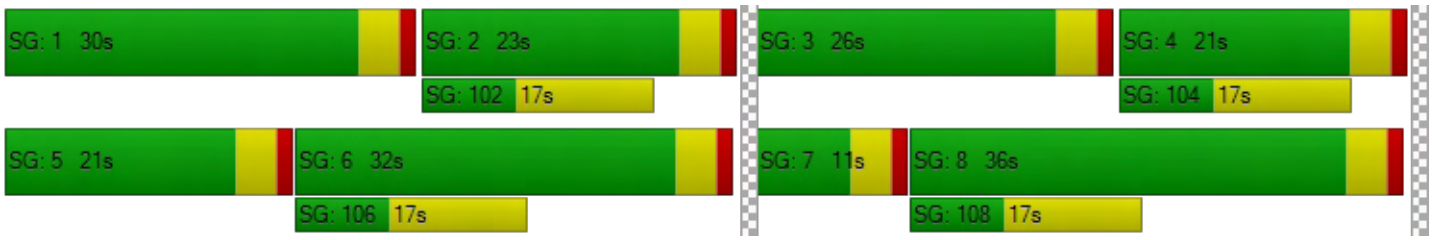
X, volume / capacity	0.74	0.26	0.39	0.50	0.41	0.83	0.69	0.80	0.65	0.26	0.47	0.47
d, Delay for Lane Group [s/veh]	29.62	17.43	18.62	34.17	23.34	30.34	31.24	23.76	22.56	31.11	22.61	23.05
Lane Group LOS	C	B	B	C	C	C	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.35	1.71	2.41	1.09	2.43	5.01	2.40	6.15	4.25	0.51	2.76	2.85
50th-Percentile Queue Length [ft/ln]	83.79	42.73	60.36	27.21	60.64	125.25	59.94	153.75	106.16	12.72	68.92	71.32
95th-Percentile Queue Length [veh/ln]	6.03	3.08	4.35	1.96	4.37	8.68	4.32	10.22	7.63	0.92	4.96	5.13
95th-Percentile Queue Length [ft/ln]	150.83	76.92	108.65	48.97	109.15	217.02	107.90	255.42	190.65	22.89	124.06	128.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.62	17.43	18.62	34.17	23.34	30.34	31.24	23.76	22.56	31.11	22.73	23.05
Movement LOS	C	B	B	C	C	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	23.24			28.50			25.03			23.54		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.81											
Intersection LOS	C											
Intersection V/C	0.746											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.832

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	105	177	226	200	219	114	121	958	60	312	1197	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	0	0	0	0	5	6	7	11	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	119	184	235	208	228	124	132	1003	73	324	1255	172
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	48	61	54	59	32	34	261	19	84	326	45
Total Analysis Volume [veh/h]	124	191	245	216	237	129	137	1044	76	337	1306	179
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	21	20	30	30	23	42	0	17	36	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	72	72	72	72	72	72	72	72	72	72	72	72
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	7	24	11	11	22	7	25	25	13	31	31
g / C, Green / Cycle	0.09	0.10	0.33	0.15	0.16	0.31	0.09	0.35	0.35	0.18	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.04	0.05	0.15	0.12	0.07	0.08	0.04	0.30	0.30	0.10	0.26	0.11
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1819	3445	5074	1583
c, Capacity [veh/h]	307	344	519	269	565	488	323	660	644	604	2213	690
d1, Uniform Delay [s]	31.04	31.08	19.27	29.57	27.31	18.78	30.86	21.60	21.62	27.18	15.44	12.93
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.86	1.40	0.67	5.59	0.50	0.29	0.89	3.38	3.50	0.81	0.25	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

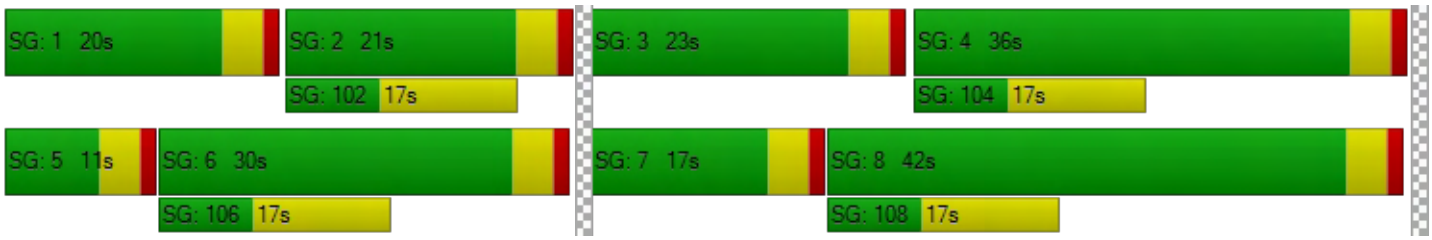
X, volume / capacity	0.40	0.55	0.47	0.80	0.42	0.26	0.42	0.86	0.86	0.56	0.59	0.26
d, Delay for Lane Group [s/veh]	31.89	32.47	19.94	35.16	27.81	19.06	31.74	24.98	25.12	27.99	15.70	13.13
Lane Group LOS	C	C	B	D	C	B	C	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.02	1.60	3.15	3.88	1.81	1.58	1.13	8.78	8.62	2.61	4.97	1.73
50th-Percentile Queue Length [ft/ln]	25.55	39.94	78.86	97.04	45.18	39.40	28.17	219.45	215.39	65.23	124.37	43.31
95th-Percentile Queue Length [veh/ln]	1.84	2.88	5.68	6.99	3.25	2.84	2.03	13.64	13.43	4.70	8.63	3.12
95th-Percentile Queue Length [ft/ln]	46.00	71.89	141.95	174.67	81.33	70.92	50.71	340.92	335.73	117.41	215.81	77.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.89	32.47	19.94	35.16	27.81	19.06	31.74	25.04	25.12	27.99	15.70	13.13
Movement LOS	C	C	B	D	C	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	26.86			28.60			25.78			17.72		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	22.83											
Intersection LOS	C											
Intersection V/C	0.832											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



EXISTING PLUS AMBIENT GROWTH PLUS PROJECT – WITH IMPROVEMENTS

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME.vistro

Scenario 5 Existing Plus Ambient Growth Plus Project Morning Peak Hour - With Improvements

Report File: C:\...\AMEAPI.pdf

1/15/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Bradley Rd (NS) at Craig Ave (EW)	Signalized	HCM 2010	EB Left	0.857	24.3	C
10	Haun Rd (NS) at Holland Road (EW)	Signalized	HCM 2010	SB Left	0.804	21.5	C
11	Haun Road (NS) at Garbani Road (EW)	Signalized	HCM 2010	WB Left	0.922	42.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	24.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.857

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	105	296	0	2	252	175	103	2	51	1	6	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	33	0	0	36	0	0	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	341	0	2	298	182	107	2	56	1	6	24
Peak Hour Factor	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	114	0	1	100	61	36	1	19	0	2	8
Total Analysis Volume [veh/h]	149	456	0	3	399	244	143	3	75	1	8	32
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	59	0	0	39	0	0	22	0	0	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	C	C
C, Cycle Length [s]	64	64	64	64	64
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	17	17	12	12
g / C, Green / Cycle	0.37	0.26	0.26	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.33	0.22	0.15	0.15	0.02
s, saturation flow rate [veh/h]	1840	1862	1583	1460	1682
c, Capacity [veh/h]	678	488	415	359	364
d1, Uniform Delay [s]	19.04	22.23	20.60	25.14	21.97
k, delay calibration	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.38	3.55	1.33	1.73	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.82	0.59	0.62	0.11
d, Delay for Lane Group [s/veh]	23.42	25.78	21.93	26.87	22.10
Lane Group LOS	C	C	C	C	C
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.33	5.71	3.10	3.19	0.50
50th-Percentile Queue Length [ft/ln]	208.21	142.82	77.40	79.82	12.56
95th-Percentile Queue Length [veh/ln]	13.06	9.63	5.57	5.75	0.90
95th-Percentile Queue Length [ft/ln]	326.53	240.81	139.32	143.67	22.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.42	23.42	23.42	25.78	25.78	21.93	26.87	26.87	26.87	22.10	22.10	22.10
Movement LOS	C	C	C	C	C	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	23.42			24.33			26.87			22.10		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.28											
Intersection LOS	C											
Intersection V/C	0.857											

Sequence

Ring 1	2	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.804

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	249	182	0	4	167	324	238	4	192	3	5	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	52	0	0	51	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	259	241	0	4	225	337	248	4	200	3	5	3
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	73	0	1	69	103	76	1	61	1	2	1
Total Analysis Volume [veh/h]	316	294	0	5	274	411	302	5	244	4	6	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	19	17	0	29	27	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	C
C, Cycle Length [s]	64	64	64	64	64	64	64	64	64
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	33	1	20	20	19	19	19	19
g / C, Green / Cycle	0.21	0.51	0.01	0.30	0.30	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.18	0.16	0.00	0.15	0.26	0.22	0.00	0.15	0.01
s, saturation flow rate [veh/h]	1774	1863	1774	1863	1583	1399	1863	1583	1666
c, Capacity [veh/h]	379	949	17	569	483	473	549	466	563
d1, Uniform Delay [s]	24.21	9.19	31.68	18.22	20.99	22.60	16.06	18.94	16.15
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.81	0.18	9.73	0.63	4.30	1.44	0.01	0.91	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

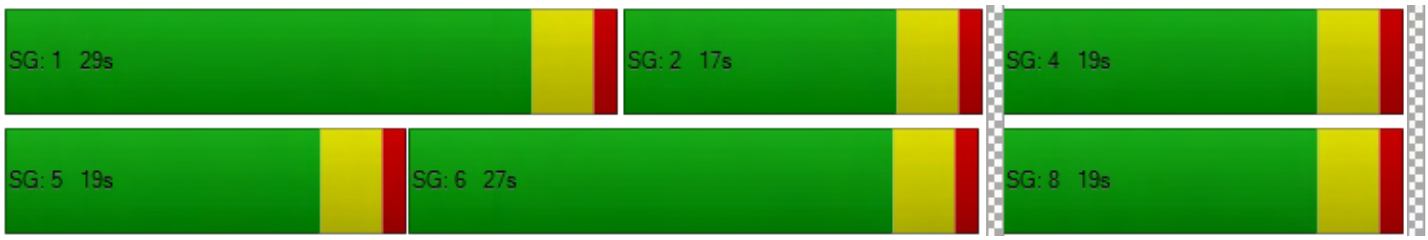
X, volume / capacity	0.83	0.31	0.30	0.48	0.85	0.64	0.01	0.52	0.02
d, Delay for Lane Group [s/veh]	29.02	9.37	41.41	18.85	25.29	24.04	16.07	19.85	16.16
Lane Group LOS	C	A	D	B	C	C	B	B	B
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	4.80	2.10	0.12	3.16	5.86	4.18	0.05	2.92	0.14
50th-Percentile Queue Length [ft/ln]	119.91	52.52	2.98	79.01	146.62	104.48	1.24	72.95	3.49
95th-Percentile Queue Length [veh/ln]	8.39	3.78	0.21	5.69	9.84	7.52	0.09	5.25	0.25
95th-Percentile Queue Length [ft/ln]	209.70	94.54	5.37	142.21	245.92	188.06	2.23	131.31	6.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.02	9.37	9.37	41.41	18.85	25.29	24.04	16.07	19.85	16.16	16.16	16.16
Movement LOS	C	A	A	D	B	C	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	19.55			22.85			22.11			16.16		
Approach LOS	B			C			C			B		
d_I, Intersection Delay [s/veh]	21.50											
Intersection LOS	C											
Intersection V/C	0.804											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Signalized	Delay (sec / veh):	42.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.922

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	347	320	0	0	330	26	15	0	264	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	27	27	0	0	53	8	34	0	59	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	388	360	0	0	396	35	50	0	334	1	0	1
Peak Hour Factor	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	116	0	0	128	11	16	0	108	0	0	0
Total Analysis Volume [veh/h]	501	465	0	0	512	45	65	0	432	1	0	1
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	42	36	0	45	39	0	0	39	0	0	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	25	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	36	74	0	38	38	34	34	34	34
g / C, Green / Cycle	0.30	0.61	0.00	0.32	0.32	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.28	0.25	0.00	0.27	0.03	0.05	0.27	0.00	0.00
s, saturation flow rate [veh/h]	1774	1863	1774	1863	1583	1410	1583	952	1583
c, Capacity [veh/h]	528	1142	1	588	500	443	454	63	454
d1, Uniform Delay [s]	41.28	11.99	0.00	38.78	28.94	33.41	42.04	59.75	30.59
k, delay calibration	0.11	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.60	1.08	0.00	16.11	0.36	0.15	11.19	0.10	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

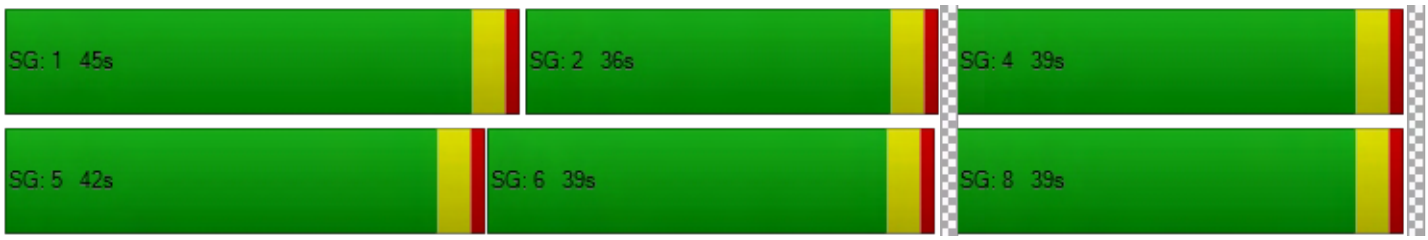
X, volume / capacity	0.95	0.41	0.00	0.87	0.09	0.15	0.95	0.02	0.00
d, Delay for Lane Group [s/veh]	50.88	13.07	0.00	54.88	29.30	33.56	53.23	59.85	30.59
Lane Group LOS	D	B	A	D	C	C	D	E	C
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	15.75	6.54	0.00	16.69	0.97	1.48	13.84	0.03	0.02
50th-Percentile Queue Length [ft/ln]	393.87	163.56	0.00	417.33	24.29	36.95	345.95	0.80	0.53
95th-Percentile Queue Length [veh/ln]	22.26	10.74	0.00	23.39	1.75	2.66	19.94	0.06	0.04
95th-Percentile Queue Length [ft/ln]	556.61	268.43	0.00	584.84	43.73	66.51	498.47	1.45	0.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.88	13.07	13.07	0.00	54.88	29.30	33.56	53.23	53.23	59.85	30.59	30.59
Movement LOS	D	B	B	A	D	C	C	D	D	E	C	C
d_A, Approach Delay [s/veh]	32.68			52.82			50.65			45.22		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	42.66											
Intersection LOS	D											
Intersection V/C	0.922											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME.vistro

Scenario 5 Existing Plus Ambient Growth Plus Project Evening Peak Hour - With Improvements

Report File: C:\...\PMEAPI.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Bradley Rd (NS) at Craig Ave (EW)	Signalized	HCM 2010	NB Thru	0.534	11.3	B
10	Haun Rd (NS) at Holland Road (EW)	Signalized	HCM 2010	SB Left	0.744	16.9	B
11	Haun Road (NS) at Garbani Road (EW)	Signalized	HCM 2010	EB Right	0.545	22.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	11.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.534

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	39	55	2	3	80	98	115	1	48	0	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	88	0	0	87	0	0	0	7	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	145	2	3	170	102	120	1	57	0	1	4
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	37	1	1	44	26	31	0	15	0	0	1
Total Analysis Volume [veh/h]	43	149	2	3	175	105	124	1	59	0	1	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	40	0	0	37	0	0	43	0	0	43	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	C	C
C, Cycle Length [s]	30	30	30	30	30
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	6	6
g / C, Green / Cycle	0.19	0.22	0.22	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.11	0.10	0.07	0.12	0.00
s, saturation flow rate [veh/h]	1839	1861	1583	1576	1277
c, Capacity [veh/h]	355	402	342	500	363
d1, Uniform Delay [s]	10.88	10.16	9.84	10.96	9.85
k, delay calibration	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.31	0.77	0.50	0.45	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

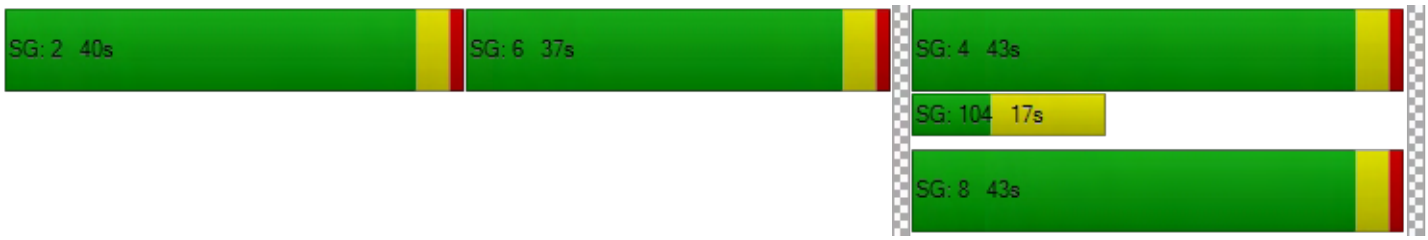
X, volume / capacity	0.55	0.44	0.31	0.37	0.01
d, Delay for Lane Group [s/veh]	12.19	10.93	10.35	11.41	9.86
Lane Group LOS	B	B	B	B	A
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.95	0.79	0.45	0.84	0.02
50th-Percentile Queue Length [ft/ln]	23.70	19.75	11.26	21.02	0.51
95th-Percentile Queue Length [veh/ln]	1.71	1.42	0.81	1.51	0.04
95th-Percentile Queue Length [ft/ln]	42.66	35.55	20.26	37.84	0.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.19	12.19	12.19	10.93	10.93	10.35	11.41	11.41	11.41	9.86	9.86	9.86
Movement LOS	B	B	B	B	B	B	B	B	B	A	A	A
d_A, Approach Delay [s/veh]	12.19			10.71			11.41			9.86		
Approach LOS	B			B			B			A		
d_I, Intersection Delay [s/veh]	11.33											
Intersection LOS	B											
Intersection V/C	0.534											

Sequence

Ring 1	2	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.744

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	241	255	2	4	258	293	245	2	118	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	120	0	0	119	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	251	385	2	4	387	305	255	2	123	0	0	4
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	102	1	1	103	81	68	1	33	0	0	1
Total Analysis Volume [veh/h]	267	410	2	4	412	324	271	2	131	0	0	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	65	32	0	64	31	0	0	24	0	0	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	C
C, Cycle Length [s]	50	50	50	50	50	50	50	50	50
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	23	0	14	14	14	14	14	14
g / C, Green / Cycle	0.19	0.47	0.01	0.28	0.28	0.28	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.15	0.22	0.00	0.22	0.20	0.19	0.00	0.08	0.00
s, saturation flow rate [veh/h]	1774	1861	1774	1863	1583	1407	1863	1583	1583
c, Capacity [veh/h]	342	873	14	530	450	481	524	446	518
d1, Uniform Delay [s]	19.06	8.99	24.52	16.34	16.00	17.84	12.84	13.98	12.86
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.90	0.40	11.41	2.51	2.18	1.04	0.00	0.36	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.47	0.29	0.78	0.72	0.56	0.00	0.29	0.01
d, Delay for Lane Group [s/veh]	22.96	9.38	35.93	18.85	18.18	18.88	12.84	14.35	12.87
Lane Group LOS	C	A	D	B	B	B	B	B	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.97	2.45	0.09	4.07	3.12	2.69	0.01	1.05	0.03
50th-Percentile Queue Length [ft/ln]	74.20	61.36	2.16	101.82	78.12	67.29	0.36	26.16	0.72
95th-Percentile Queue Length [veh/ln]	5.34	4.42	0.16	7.33	5.62	4.84	0.03	1.88	0.05
95th-Percentile Queue Length [ft/ln]	133.56	110.44	3.90	183.27	140.61	121.12	0.65	47.08	1.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.96	9.38	9.38	35.93	18.85	18.18	18.88	12.84	14.35	12.87	12.87	12.87
Movement LOS	C	A	A	D	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	14.72			18.65			17.38			12.87		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	16.90											
Intersection LOS	B											
Intersection V/C	0.744											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Signalized	Delay (sec / veh):	22.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	82	472	0	0	349	13	7	0	82	4	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	108	103	0	0	110	27	44	0	97	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	193	594	0	0	473	41	51	0	182	4	0	0
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	152	0	0	121	11	13	0	47	1	0	0
Total Analysis Volume [veh/h]	198	610	0	0	486	42	52	0	187	4	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	29	76	0	14	61	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	25	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	92	0	76	76	16	16	16	16
g / C, Green / Cycle	0.13	0.76	0.00	0.63	0.63	0.14	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.11	0.33	0.00	0.26	0.03	0.04	0.12	0.00	0.00
s, saturation flow rate [veh/h]	1774	1863	1774	1863	1583	1412	1583	1192	1863
c, Capacity [veh/h]	230	1419	2	1179	1002	236	217	71	256
d1, Uniform Delay [s]	51.24	5.07	0.00	10.96	8.32	47.82	50.74	59.19	0.00
k, delay calibration	0.11	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.02	0.95	0.00	1.07	0.08	0.47	9.55	0.33	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.43	0.00	0.41	0.04	0.22	0.86	0.06	0.00
d, Delay for Lane Group [s/veh]	60.25	6.02	0.00	12.02	8.40	48.29	60.28	59.52	0.00
Lane Group LOS	E	A	A	B	A	D	E	E	A
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.41	4.93	0.00	6.48	0.42	1.45	6.07	0.13	0.00
50th-Percentile Queue Length [ft/ln]	160.25	123.32	0.00	161.94	10.60	36.32	151.84	3.19	0.00
95th-Percentile Queue Length [veh/ln]	10.56	8.58	0.00	10.65	0.76	2.62	10.12	0.23	0.00
95th-Percentile Queue Length [ft/ln]	264.06	214.38	0.00	266.29	19.08	65.38	252.88	5.74	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.25	6.02	6.02	0.00	12.02	8.40	48.29	60.28	60.28	59.52	0.00	0.00
Movement LOS	E	A	A	A	B	A	D	E	E	E	A	A
d_A, Approach Delay [s/veh]	19.31			11.74			57.67			59.52		
Approach LOS	B			B			E			E		
d_I, Intersection Delay [s/veh]	22.69											
Intersection LOS	C											
Intersection V/C	0.545											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

EXISTING PLUS AMBIENT GROWTH PLUS CUMULATIVE (WITHOUT HOLLAND ROAD OVERPASS)

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME.vistro

Scenario 6 Existing Plus Ambient Growth Plus Cumulative Morning Peak Hour

Report File: C:\...\AMEAC.pdf

1/15/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	1.030	41.1	D
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	NB Left	0.940	60.4	E
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	NB Thru	0.987	32.9	D
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	WB Right	0.757	19.9	C
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.944	60.1	E
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	SB Right	1.100	69.3	F
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	WB Left	0.536	2,325.1	F
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.954	87.4	F
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.708	24.0	C
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Right	0.770	6.9	A
18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.752	16.9	B
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.735	3.6	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.967	47.7	D
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.532	9.7	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.843	33.9	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.854	46.2	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	41.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.030

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	109	200	378	166	239	58	73	1097	67	337	764	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	7	24	67	9	10	18	447	13	10	220	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	223	432	246	267	73	97	1632	85	374	1045	163
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	64	124	71	77	21	28	470	24	108	301	47
Total Analysis Volume [veh/h]	144	257	497	283	307	84	112	1878	98	430	1203	188
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	21	21	20	15	0	31	41	0	18	28	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	17	35	16	23	23	8	37	37	14	43	43
g / C, Green / Cycle	0.10	0.17	0.35	0.16	0.23	0.23	0.08	0.37	0.37	0.14	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.08	0.14	0.31	0.16	0.11	0.11	0.06	0.37	0.37	0.12	0.24	0.12
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1727	1774	3547	1816	3445	5074	1583
c, Capacity [veh/h]	177	319	556	284	431	399	143	1308	670	482	2174	678
d1, Uniform Delay [s]	44.09	39.86	30.69	41.98	33.16	33.19	45.15	31.52	31.57	42.26	21.41	18.54
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.58	19.24	19.39	24.09	3.65	3.98	9.13	10.99	16.67	5.90	0.22	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

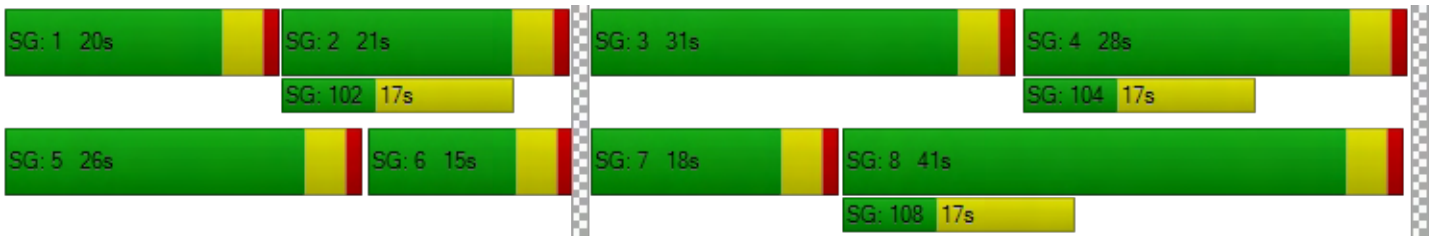
X, volume / capacity	0.81	0.81	0.89	1.00	0.47	0.47	0.79	1.00	1.00	0.89	0.55	0.28
d, Delay for Lane Group [s/veh]	52.66	59.09	50.08	66.08	36.81	37.17	54.28	42.51	48.23	48.16	21.63	18.75
Lane Group LOS	D	E	D	E	D	D	D	D	F	D	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.89	7.71	13.97	8.79	4.63	4.36	3.07	17.10	18.63	5.56	6.86	2.81
50th-Percentile Queue Length [ft/ln]	97.24	192.82	349.34	219.66	115.74	108.99	76.78	427.55	465.78	138.90	171.62	70.24
95th-Percentile Queue Length [veh/ln]	7.00	12.27	20.10	13.65	8.16	7.78	5.53	23.88	25.75	9.42	11.16	5.06
95th-Percentile Queue Length [ft/ln]	175.03	306.69	502.61	341.19	203.96	194.60	138.21	597.10	643.71	235.54	279.04	126.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.66	59.09	50.08	66.08	36.93	37.17	54.28	44.26	48.23	48.16	21.63	18.75
Movement LOS	D	E	D	E	D	D	D	D	D	D	C	B
d_A, Approach Delay [s/veh]	53.07			49.20			44.98			27.60		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	41.05											
Intersection LOS	D											
Intersection V/C	1.030											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	60.4
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.940

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	48	318	164	66	426	204	106	228	182	174	174	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	16	6	29	33	18	13	11	4	2	4	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	53	359	183	100	493	238	127	257	201	190	192	135
Peak Hour Factor	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	104	53	29	143	69	37	74	58	55	56	39
Total Analysis Volume [veh/h]	61	416	212	116	571	276	147	298	233	220	222	156
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	40	0	11	33	0	13	33	0	16	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	174	174	174	174	174	174	174	174	174	174
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	65	14	71	71	17	56	24	63	63
g / C, Green / Cycle	0.04	0.37	0.08	0.41	0.41	0.10	0.32	0.14	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.03	0.36	0.07	0.31	0.17	0.08	0.31	0.12	0.12	0.10
s, saturation flow rate [veh/h]	1774	1758	1774	1863	1583	1774	1729	1774	1863	1583
c, Capacity [veh/h]	78	654	138	755	642	169	556	243	677	575
d1, Uniform Delay [s]	82.65	53.58	79.52	44.51	37.38	77.92	57.98	74.23	40.17	39.25
k, delay calibration	0.11	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.33	9.97	12.89	1.57	0.46	12.53	9.90	11.87	0.28	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

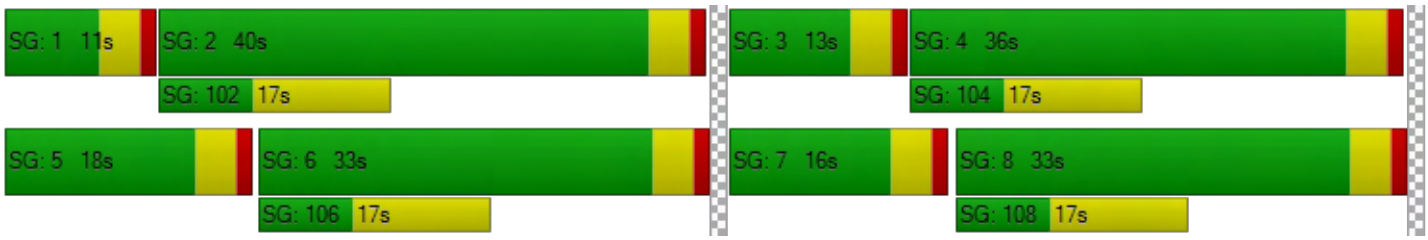
X, volume / capacity	0.78	0.96	0.84	0.76	0.43	0.87	0.95	0.90	0.33	0.27
d, Delay for Lane Group [s/veh]	97.98	63.55	92.41	46.08	37.84	90.46	67.88	86.11	40.45	39.51
Lane Group LOS	F	E	F	D	D	F	E	F	D	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.08	28.71	5.68	21.67	8.74	7.15	24.50	10.57	7.10	4.88
50th-Percentile Queue Length [ft/ln]	76.89	717.81	142.00	541.66	218.58	178.74	612.43	264.36	177.43	121.92
95th-Percentile Queue Length [veh/ln]	5.54	37.50	9.59	29.30	13.59	11.53	32.61	15.91	11.47	8.50
95th-Percentile Queue Length [ft/ln]	138.40	937.51	239.71	732.51	339.81	288.37	815.36	397.69	286.65	212.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	97.98	63.55	63.55	92.41	46.08	37.84	90.46	67.88	67.88	86.11	40.45	39.51
Movement LOS	F	E	E	F	D	D	F	E	E	F	D	D
d_A, Approach Delay [s/veh]	66.60			49.30			72.78			57.00		
Approach LOS	E			D			E			E		
d_I, Intersection Delay [s/veh]	60.38											
Intersection LOS	E											
Intersection V/C	0.940											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	32.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.987

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	105	296	0	2	252	175	103	2	51	1	6	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	3	0	0	1	17	11	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	323	0	2	273	206	122	2	58	1	6	25
Peak Hour Factor	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	108	0	1	91	69	41	1	19	0	2	8
Total Analysis Volume [veh/h]	155	432	0	3	365	276	163	3	78	1	8	33
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	595	550	618	513	480
Degree of Utilization, x	0.99	0.67	0.45	0.48	0.09

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	14.34	4.98	2.30	2.53	0.29
95th-Percentile Queue Length [ft]	358.60	124.48	57.48	63.30	7.16
Approach Delay [s/veh]	57.93	17.91		16.23	11.23
Approach LOS	F	C		C	B
Intersection Delay [s/veh]	32.94				
Intersection LOS	D				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	19.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.757

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	0	278	1	1	2	2	0	0	6	364
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	3	0	0	0	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	0	303	1	1	2	2	0	0	6	397
Peak Hour Factor	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	0	102	0	0	1	1	0	0	2	134
Total Analysis Volume [veh/h]	0	4	0	409	1	1	3	3	0	0	8	536
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	586	644	577	622	708
Degree of Utilization, x	0.01	0.64	0.01	0.01	0.76

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.02	4.57	0.03	0.04	7.05
95th-Percentile Queue Length [ft]	0.52	114.17	0.79	0.98	176.14
Approach Delay [s/veh]	9.19	17.89	9.30	21.64	
Approach LOS	A	C	A	C	
Intersection Delay [s/veh]	19.92				
Intersection LOS	C				

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	60.1
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.944

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	77	569	110	38	30	121	1432	206	709	1057	322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	32	12	157	7	4	6	17	526	77	150	268	25
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	178	95	772	126	45	38	148	2073	299	916	1410	373
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	25	204	33	12	10	39	547	79	242	372	98
Total Analysis Volume [veh/h]	188	100	814	133	47	40	156	2187	315	966	1487	393
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	22	22	13	21	0	55	67	0	38	50	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	259	259	259	259	259	259	259	259	259	259	259	259
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	31	115	12	27	27	14	120	120	79	185	185
g / C, Green / Cycle	0.06	0.12	0.44	0.05	0.10	0.10	0.05	0.46	0.46	0.31	0.72	0.72
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.29	0.04	0.02	0.03	0.05	0.43	0.20	0.28	0.35	0.38
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1595	3445	5074	1583	3445	3547	1681
c, Capacity [veh/h]	221	224	1241	164	193	166	188	2350	733	1058	2539	1204
d1, Uniform Delay [s]	119.97	105.90	56.64	122.16	106.57	106.82	121.24	65.59	46.59	86.37	16.06	16.94
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.35
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.90	1.39	0.59	9.14	0.61	0.80	9.06	2.08	0.40	3.53	0.15	1.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

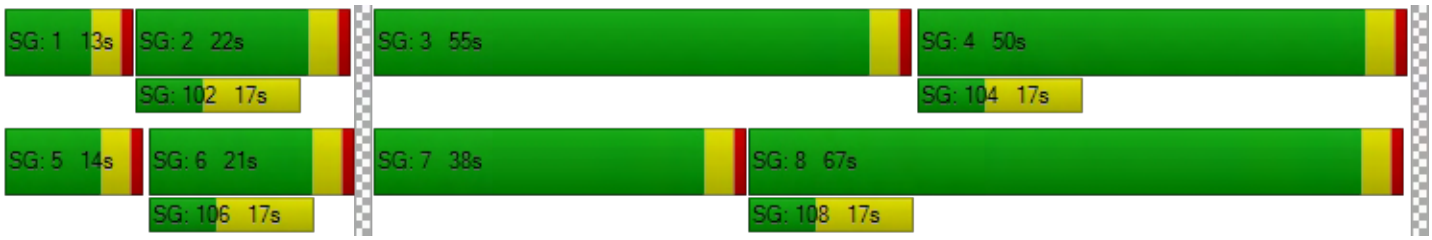
X, volume / capacity	0.85	0.45	0.66	0.81	0.23	0.25	0.83	0.93	0.43	0.91	0.49	0.53
d, Delay for Lane Group [s/veh]	128.87	107.29	57.24	131.29	107.18	107.61	130.30	67.67	46.99	89.90	16.21	18.14
Lane Group LOS	F	F	E	F	F	F	F	E	D	F	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.68	6.47	21.43	4.75	2.87	2.70	5.56	46.19	14.12	32.03	16.71	18.66
50th-Percentile Queue Length [ft/ln]	166.94	161.65	535.80	118.64	71.64	67.43	138.88	1154.81	352.99	800.69	417.82	466.59
95th-Percentile Queue Length [veh/ln]	10.92	10.64	29.02	8.32	5.16	4.85	9.42	57.34	20.28	41.31	23.42	25.75
95th-Percentile Queue Length [ft/ln]	272.89	265.90	725.61	207.96	128.95	121.37	235.52	1433.46	507.05	1032.72	585.43	643.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	128.87	107.29	57.24	131.29	107.20	107.61	130.30	67.67	46.99	89.90	16.53	18.14
Movement LOS	F	F	E	F	F	F	F	E	D	F	B	B
d_A, Approach Delay [s/veh]	74.00			121.84			68.90			41.66		
Approach LOS	E			F			E			D		
d_I, Intersection Delay [s/veh]	60.07											
Intersection LOS	E											
Intersection V/C	0.944											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	69.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.100

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	249	182	0	4	167	324	238	4	192	3	5	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	128	0	0	130	33	16	0	40	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	298	325	0	4	310	383	273	4	247	3	5	3
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	91	99	0	1	95	117	83	1	75	1	2	1
Total Analysis Volume [veh/h]	363	396	0	5	378	467	333	5	301	4	6	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	371	396	373	393	467	383	404	438	306
Degree of Utilization, x	0.98	1.01	0.01	0.96	1.10	0.87	0.01	0.69	0.05

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	11.20	12.52	0.04	11.04	16.16	8.50	0.04	5.09	0.14
95th-Percentile Queue Length [ft]	279.99	313.02	1.02	276.09	403.95	212.56	0.94	127.26	3.58
Approach Delay [s/veh]	76.75		86.22			39.12			15.32
Approach LOS	F		F			E			C
Intersection Delay [s/veh]	69.30								
Intersection LOS	F								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	2,325.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.536

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	347	320	0	0	330	26	15	0	264	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	155	0	0	171	0	0	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	379	501	0	0	527	28	16	0	288	1	0	1
Peak Hour Factor	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	122	162	0	0	170	9	5	0	93	0	0	0
Total Analysis Volume [veh/h]	490	647	0	0	681	36	21	0	372	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.55	0.01	0.00	0.00	0.01	0.00	1.40	0.00	0.83	0.54	0.00	0.00
d_M, Delay for Movement [s/veh]	14.02	0.00	0.00	8.84	0.00	0.00	733.29	244.36	40.94	2325.05	619.10	403.84
Movement LOS	B	A	A	A	A	A	F	F	E	F	F	F
95th-Percentile Queue Length [veh/ln]	3.49	0.00	0.00	0.00	0.00	0.00	3.21	7.89	7.89	0.77	0.77	0.77
95th-Percentile Queue Length [ft/ln]	87.14	0.00	0.00	0.00	0.00	0.00	80.13	197.16	197.16	19.13	19.13	19.13
d_A, Approach Delay [s/veh]	6.04			0.00			77.93			1364.45		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	17.89											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	87.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.954

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	23	112	24	528	45	39	66	423	9	53	341	485
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	6	41	83	36	24	24	54	58	294	45	63
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	127	67	653	85	66	95	511	68	351	413	587
Peak Hour Factor	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	39	21	202	26	20	29	158	21	108	128	181
Total Analysis Volume [veh/h]	41	157	83	807	105	82	117	632	84	434	511	726
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	26	0	11	29	0	24	42	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	244	244	244	244	244	244	244	244	244	244	244
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	23	72	72	18	71	71	62	114	114
g / C, Green / Cycle	0.09	0.09	0.09	0.30	0.30	0.07	0.29	0.29	0.25	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.02	0.08	0.05	0.28	0.28	0.07	0.20	0.20	0.24	0.14	0.46
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1757	1774	1863	1787	1774	3547	1583
c, Capacity [veh/h]	167	176	149	526	521	133	539	517	451	1662	742
d1, Uniform Delay [s]	102.48	109.33	105.65	83.90	84.22	111.87	76.68	76.70	89.91	40.27	63.65
k, delay calibration	0.11	0.11	0.11	0.16	0.16	0.11	0.11	0.11	0.11	0.11	0.44
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	14.24	3.20	12.17	13.73	16.62	1.50	1.57	12.70	0.10	26.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

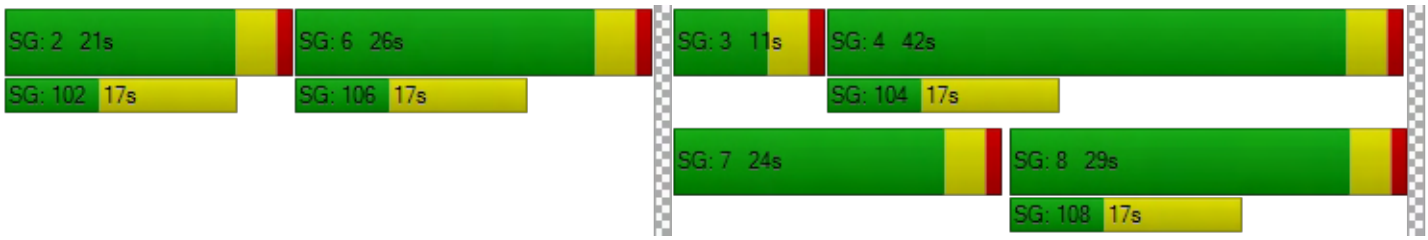
X, volume / capacity	0.24	0.89	0.56	0.94	0.95	0.88	0.68	0.68	0.96	0.31	0.98
d, Delay for Lane Group [s/veh]	103.23	123.56	108.85	96.07	97.94	128.49	78.18	78.27	102.61	40.37	89.67
Lane Group LOS	F	F	F	F	F	F	E	E	F	D	F
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.49	10.73	5.26	32.72	33.05	8.11	20.82	20.00	29.00	9.92	49.81
50th-Percentile Queue Length [ft/ln]	62.30	268.33	131.53	818.07	826.22	202.83	520.38	500.03	724.97	247.96	1245.14
95th-Percentile Queue Length [veh/ln]	4.49	16.11	9.02	42.10	42.48	12.78	28.30	27.34	37.83	15.08	61.38
95th-Percentile Queue Length [ft/ln]	112.15	402.65	225.57	1052.60	1061.92	319.61	707.44	683.40	945.76	377.08	1534.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	103.23	123.56	108.85	96.79	97.94	97.94	128.49	78.22	78.27	102.61	40.37	89.67
Movement LOS	F	F	F	F	F	F	F	E	E	F	D	F
d_A, Approach Delay [s/veh]	116.25			97.01			85.28			77.96		
Approach LOS	F			F			F			E		
d_I, Intersection Delay [s/veh]	87.43											
Intersection LOS	F											
Intersection V/C	0.954											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	24.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.708

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	333	0	439	0	1489	630	0	1666	1057
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.08	1.00	1.08	1.00	1.08	1.08	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	55	0	149	0	449	241	0	294	41
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	415	0	623	0	2057	921	0	2093	1183
Peak Hour Factor	1.0000	1.0000	1.0000	0.9340	1.0000	0.9340	1.0000	0.9340	0.9340	1.0000	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	111	0	167	0	551	0	0	560	0
Total Analysis Volume [veh/h]	0	0	0	444	0	667	0	2202	0	0	2241	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	50	0	0	0	90	0	0	90	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		172	172	172	172	172	172	172
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		44	44	44	120	120	120	120
g / C, Green / Cycle		0.26	0.26	0.26	0.70	0.70	0.70	0.70
(v / s)_i Volume / Saturation Flow Rate		0.21	0.23	0.23	0.33	0.00	0.44	0.00
s, saturation flow rate [veh/h]		1774	1618	1583	6765	1583	5074	1583
c, Capacity [veh/h]		458	417	408	4706	1101	3529	1101
d1, Uniform Delay [s]		59.90	61.46	61.86	11.83	0.00	14.29	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.46	6.50	7.80	0.07	0.00	0.19	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.81	0.89	0.91	0.47	0.00	0.63	0.00
d, Delay for Lane Group [s/veh]		63.36	67.96	69.66	11.90	0.00	14.48	0.00
Lane Group LOS		E	E	E	B	A	B	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		15.70	16.41	16.64	9.54	0.00	15.66	0.00
50th-Percentile Queue Length [ft/ln]		392.44	410.24	416.08	238.41	0.00	391.42	0.00
95th-Percentile Queue Length [veh/ln]		22.20	23.05	23.33	14.60	0.00	22.15	0.00
95th-Percentile Queue Length [ft/ln]		554.89	576.33	583.34	365.03	0.00	553.65	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	64.12	0.00	68.91	0.00	11.90	0.00	0.00	14.48	0.00
Movement LOS				E		E		B	A		B	A
d_A, Approach Delay [s/veh]	0.00			67.00			11.90			14.48		
Approach LOS	A			E			B			B		
d_I, Intersection Delay [s/veh]	23.96											
Intersection LOS	C											
Intersection V/C	0.708											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	6.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.770

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	322	0	134	0	501	379	0	592	385
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.08	1.00	1.08	1.00	1.08	1.08	1.04	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	170	0	97	97	0	262	108
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	348	0	315	0	638	506	0	901	524
Peak Hour Factor	1.0000	1.0000	1.0000	0.9250	1.0000	0.9250	1.0000	0.9250	0.9250	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	94	0	85	0	172	137	0	244	142
Total Analysis Volume [veh/h]	0	0	0	376	0	341	0	690	547	0	974	566
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	28	0	0	0	72	0	0	72	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		32	32	32	32	32	32
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		7	7	16	16	16	16
g / C, Green / Cycle		0.24	0.24	0.51	0.51	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate		0.11	0.12	0.19	0.35	0.27	0.36
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		815	663	1817	811	1817	811
d1, Uniform Delay [s]		10.43	10.58	4.71	5.79	5.22	5.90
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.41	0.62	0.13	0.99	0.25	1.10
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

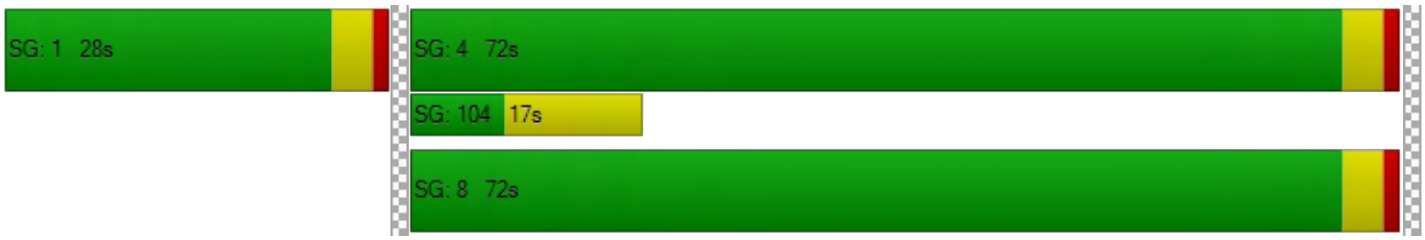
X, volume / capacity		0.46	0.51	0.38	0.67	0.54	0.70
d, Delay for Lane Group [s/veh]		10.83	11.19	4.84	6.78	5.47	7.00
Lane Group LOS		B	B	A	A	A	A
Critical Lane Group		No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		0.86	0.80	0.64	1.41	1.02	1.50
50th-Percentile Queue Length [ft/ln]		21.46	20.11	16.04	35.24	25.40	37.47
95th-Percentile Queue Length [veh/ln]		1.55	1.45	1.15	2.54	1.83	2.70
95th-Percentile Queue Length [ft/ln]		38.64	36.19	28.87	63.42	45.73	67.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	10.83	0.00	11.19	0.00	4.84	6.78	0.00	5.47	7.00
Movement LOS				B		B		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			11.01			5.69			6.03		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	6.93											
Intersection LOS	A											
Intersection V/C	0.770											

Sequence

Ring 1	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.752

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	402	0	541	0	0	0	0	1456	345	0	2313	491
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.00	1.08	1.00	1.00	1.00	1.00	1.08	1.08	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	122	0	18	0	0	0	0	203	301	0	213	150
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	556	0	602	0	0	0	0	1775	674	0	2711	680
Peak Hour Factor	0.9350	1.0000	0.9350	1.0000	1.0000	1.0000	1.0000	0.9350	0.9350	1.0000	0.9350	0.9350
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	149	0	161	0	0	0	0	475	0	0	725	0
Total Analysis Volume [veh/h]	595	0	644	0	0	0	0	1898	0	0	2899	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	83	0	0	0	0	0	0	57	0	0	57	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	96	96	96		96	96	96	96
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	29		59	59	59	59
g / C, Green / Cycle	0.31	0.31	0.31		0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.23	0.25	0.26		0.37	0.00	0.43	0.00
s, saturation flow rate [veh/h]	1774	1662	1583		5074	1583	6765	1583
c, Capacity [veh/h]	543	509	485		3099	967	4132	967
d1, Uniform Delay [s]	30.19	30.82	31.34		11.64	0.00	12.75	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.23	3.18	4.34		0.20	0.00	0.22	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.81	0.85		0.61	0.00	0.70	0.00
d, Delay for Lane Group [s/veh]	32.42	34.00	35.68		11.84	0.00	12.97	0.00
Lane Group LOS	C	C	D		B	A	B	A
Critical Lane Group	No	No	Yes		No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.75	9.04	9.32		7.63	0.00	9.57	0.00
50th-Percentile Queue Length [ft/ln]	218.80	226.02	233.00		190.83	0.00	239.23	0.00
95th-Percentile Queue Length [veh/ln]	13.60	13.97	14.33		12.16	0.00	14.64	0.00
95th-Percentile Queue Length [ft/ln]	340.10	349.30	358.17		304.11	0.00	366.06	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.91	0.00	35.08	0.00	0.00	0.00	0.00	11.84	0.00	0.00	12.97	0.00
Movement LOS	C		D					B	A		B	A
d_A, Approach Delay [s/veh]	34.04			0.00			11.84			12.97		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	16.94											
Intersection LOS	B											
Intersection V/C	0.752											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	3.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	372	0	0	235	83	722	0	0	794	465
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.08	1.00	1.00	1.08	1.08	1.08	1.00	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	31	0	0	187	40	57	0	0	183	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	433	0	0	441	130	837	0	0	1041	502
Peak Hour Factor	0.9380	1.0000	0.9380	1.0000	1.0000	0.9380	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	115	0	0	118	35	223	0	0	277	134
Total Analysis Volume [veh/h]	0	0	462	0	0	470	139	892	0	0	1110	535
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	22	100	0	0	78	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			28	28	28	28
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			5	24	15	15
g / C, Green / Cycle			0.17	0.86	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate			0.08	0.25	0.31	0.34
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			298	3036	1929	861
d1, Uniform Delay [s]			10.43	0.38	4.21	4.36
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			1.13	0.05	0.27	0.74
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.47	0.29	0.58	0.62
d, Delay for Lane Group [s/veh]			11.56	0.44	4.48	5.10
Lane Group LOS			B	A	A	A
Critical Lane Group			Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]			0.62	0.02	0.58	0.68
50th-Percentile Queue Length [ft/ln]			15.61	0.56	14.48	17.07
95th-Percentile Queue Length [veh/ln]			1.12	0.04	1.04	1.23
95th-Percentile Queue Length [ft/ln]			28.10	1.01	26.06	30.72

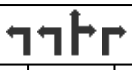
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	11.56	0.44	0.00	0.00	4.48	5.10
Movement LOS							B	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			1.94			4.68		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.62											
Intersection LOS	A											
Intersection V/C	0.735											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	47.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.967

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	580	31	97	77	64	175	75	1252	658	137	2049	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	102	18	1	9	8	38	51	133	37	1	223	13
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	728	51	106	92	77	227	132	1485	748	149	2436	57
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	190	13	28	24	20	59	34	388	195	39	636	15
Total Analysis Volume [veh/h]	761	53	111	96	80	237	138	1552	782	156	2545	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	35	21	0	35	21	0	11	73	0	11	73	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	41	41	7	17	17	7	69	69	7	69	69
g / C, Green / Cycle	0.22	0.29	0.29	0.05	0.12	0.12	0.05	0.49	0.49	0.05	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.22	0.03	0.07	0.03	0.10	0.10	0.04	0.31	0.49	0.05	0.48	0.49
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1708	1583	3445	5074	1583	3445	3547	1841
c, Capacity [veh/h]	763	549	467	168	209	194	172	2496	779	172	1745	906
d1, Uniform Delay [s]	54.47	35.83	37.44	65.15	59.68	59.69	65.82	26.03	35.57	66.18	34.88	35.19
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.16	0.11	0.11	0.15
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.58	0.35	1.20	3.02	25.23	26.98	8.28	0.26	19.19	15.70	6.34	14.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.00	0.10	0.24	0.57	0.79	0.79	0.80	0.62	1.00	0.90	0.98	0.99
d, Delay for Lane Group [s/veh]	69.05	36.18	38.64	68.17	84.91	86.68	74.10	26.29	54.76	81.87	41.22	49.35
Lane Group LOS	E	D	D	E	F	F	E	C	F	F	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	14.92	1.39	3.09	1.75	7.15	6.73	2.65	12.62	30.00	3.16	29.35	32.97
50th-Percentile Queue Length [ft/ln]	373.12	34.82	77.16	43.87	178.77	168.30	66.17	315.57	750.06	78.97	733.72	824.14
95th-Percentile Queue Length [veh/ln]	21.26	2.51	5.56	3.16	11.54	10.99	4.76	18.45	39.11	5.69	38.23	42.38
95th-Percentile Queue Length [ft/ln]	531.51	62.68	138.89	78.96	288.41	274.68	119.10	461.24	977.73	142.14	955.84	1059.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	69.05	36.18	38.64	68.17	84.91	86.06	74.10	26.29	54.76	81.87	43.89	49.35
Movement LOS	E	D	D	E	F	F	E	C	F	F	D	D
d_A, Approach Delay [s/veh]	63.52			81.67			37.96			46.15		
Approach LOS	E			F			D			D		
d_I, Intersection Delay [s/veh]	47.75											
Intersection LOS	D											
Intersection V/C	0.967											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.532

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			Yes			Yes	

Volumes

Name												
Base Volume Input [veh/h]	0	509	39	92	302	0	0	0	0	119	0	178
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.08	1.08	1.08	1.08	1.00	1.08	1.08	1.08	1.08	1.00	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	99	10	0	33	0	0	0	0	43	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	649	52	99	359	0	0	0	0	172	0	192
Peak Hour Factor	1.0000	0.9190	0.9190	0.9190	0.9190	1.0000	1.0000	1.0000	1.0000	0.9190	1.0000	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	177	14	27	98	0	0	0	0	47	0	52
Total Analysis Volume [veh/h]	0	706	57	108	391	0	0	0	0	187	0	209
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	54	0	20	74	0	0	0	0	26	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	33	33	33	33		33	33	33
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	4	18		7	7	7
g / C, Green / Cycle	0.30	0.30	0.13	0.55		0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.20	0.04	0.06	0.11		0.08	0.08	0.08
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1647	1583
c, Capacity [veh/h]	1054	471	239	1961		366	340	326
d1, Uniform Delay [s]	10.23	8.50	13.22	3.73		11.35	11.36	11.36
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.74	0.11	1.33	0.05		0.66	0.71	0.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.12	0.45	0.20		0.38	0.38	0.38
d, Delay for Lane Group [s/veh]	10.97	8.61	14.55	3.78		12.01	12.07	12.10
Lane Group LOS	B	A	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.69	0.23	0.67	0.28		0.74	0.69	0.67
50th-Percentile Queue Length [ft/ln]	42.19	5.67	16.79	7.12		18.45	17.29	16.71
95th-Percentile Queue Length [veh/ln]	3.04	0.41	1.21	0.51		1.33	1.24	1.20
95th-Percentile Queue Length [ft/ln]	75.94	10.20	30.22	12.82		33.20	31.12	30.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.97	8.61	14.55	3.78	0.00	0.00	0.00	0.00	12.03	0.00	12.09
Movement LOS		B	A	B	A					B		B
d_A, Approach Delay [s/veh]	10.80			6.11			0.00			12.06		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	9.69											
Intersection LOS	A											
Intersection V/C	0.532											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	33.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.843

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	310	152	88	40	180	369	249	624	277	24	640	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	2	2	0	5	79	22	52	14	8	93	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	346	166	97	43	199	478	291	726	313	34	784	50
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	94	45	26	12	54	129	79	197	85	9	212	14
Total Analysis Volume [veh/h]	375	180	105	47	216	518	315	787	339	37	849	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	40	0	19	42	0	17	30	0	11	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	92	92	92	92	92	92	92	92	92	92	92	92
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	41	41	5	33	33	11	26	26	4	19	19
g / C, Green / Cycle	0.14	0.44	0.44	0.05	0.36	0.36	0.12	0.28	0.28	0.05	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.11	0.05	0.07	0.03	0.12	0.33	0.09	0.22	0.21	0.01	0.17	0.17
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1806
c, Capacity [veh/h]	480	1576	704	95	667	567	416	999	446	161	737	375
d1, Uniform Delay [s]	38.26	14.97	15.22	42.39	21.45	28.18	39.18	30.52	30.22	42.30	34.75	34.78
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.80	0.03	0.10	3.99	0.28	6.21	2.85	1.42	2.69	0.72	2.20	4.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

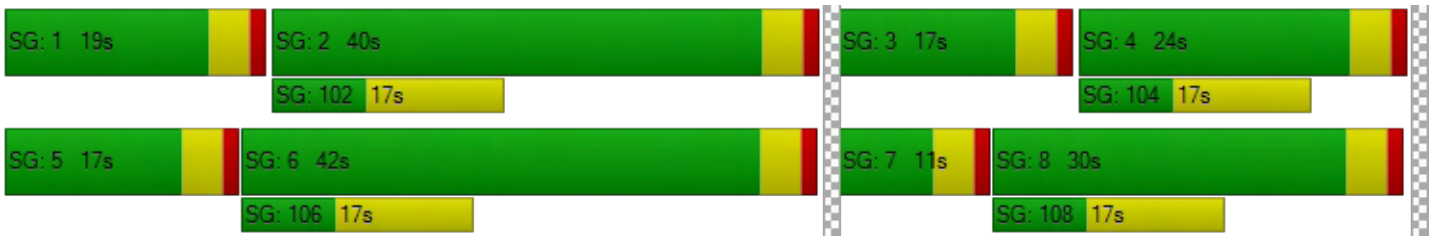
X, volume / capacity	0.78	0.11	0.15	0.50	0.32	0.91	0.76	0.79	0.76	0.23	0.81	0.81
d, Delay for Lane Group [s/veh]	41.06	15.00	15.32	46.38	21.72	34.39	42.03	31.94	32.91	43.02	36.96	39.09
Lane Group LOS	D	B	B	D	C	C	D	C	C	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.20	1.08	1.29	1.13	3.35	11.38	3.56	8.02	7.00	0.42	6.46	6.83
50th-Percentile Queue Length [ft/ln]	105.10	26.98	32.27	28.32	83.80	284.44	88.94	200.39	175.05	10.44	161.48	170.71
95th-Percentile Queue Length [veh/ln]	7.57	1.94	2.32	2.04	6.03	16.91	6.40	12.66	11.34	0.75	10.63	11.11
95th-Percentile Queue Length [ft/ln]	189.17	48.56	58.08	50.98	150.83	422.74	160.09	316.47	283.54	18.79	265.68	277.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.06	15.00	15.32	46.38	21.72	34.39	42.03	31.94	32.91	43.02	37.59	39.09
Movement LOS	D	B	B	D	C	C	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	29.86			31.61			34.37			37.89		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	33.89											
Intersection LOS	C											
Intersection V/C	0.843											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	46.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.854

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	214	176	128	79	240	408	236	1002	169	191	1415	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	81	66	48	10	25	22	8	106	26	34	127	20
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	312	256	186	95	284	463	263	1188	209	240	1655	74
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	84	69	50	26	76	124	71	319	56	64	444	20
Total Analysis Volume [veh/h]	335	275	200	102	305	497	282	1276	224	258	1778	79
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	21	21	19	25	25	17	48	0	12	43	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	161	161	161	161	161	161	161	161	161	161	161	161
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	31	54	11	24	59	31	83	83	19	71	71
g / C, Green / Cycle	0.11	0.20	0.34	0.07	0.15	0.37	0.19	0.52	0.52	0.12	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.13	0.06	0.09	0.31	0.08	0.41	0.42	0.07	0.35	0.05
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1769	3445	5074	1583
c, Capacity [veh/h]	394	694	534	124	537	583	662	965	916	402	2247	701
d1, Uniform Delay [s]	69.99	56.47	40.48	73.90	63.43	46.82	57.26	31.47	32.27	67.92	38.49	26.31
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.14	0.15	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.23	0.37	0.44	12.43	0.95	3.64	0.44	1.80	2.49	1.71	0.65	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

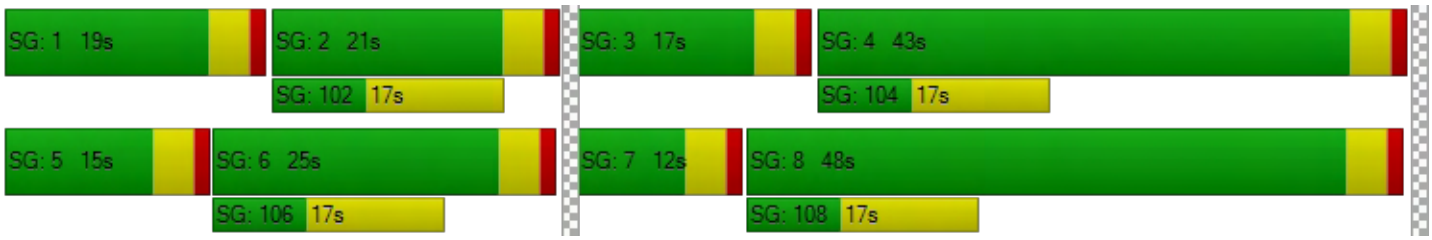
X, volume / capacity	0.85	0.40	0.37	0.82	0.57	0.85	0.43	0.78	0.81	0.64	0.79	0.11
d, Delay for Lane Group [s/veh]	75.22	56.84	40.92	86.32	64.38	50.46	57.69	33.28	34.76	69.63	39.14	26.38
Lane Group LOS	E	E	D	F	E	D	E	C	C	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.10	4.96	6.18	4.62	5.92	18.95	5.14	24.22	24.58	5.20	20.22	1.84
50th-Percentile Queue Length [ft/ln]	177.41	124.09	154.62	115.38	147.92	473.76	128.58	605.57	614.53	129.96	505.60	46.11
95th-Percentile Queue Length [veh/ln]	11.47	8.62	10.26	8.14	9.91	26.09	8.86	32.29	32.71	8.94	27.60	3.32
95th-Percentile Queue Length [ft/ln]	286.63	215.43	256.58	203.45	247.64	652.24	221.56	807.35	817.81	223.44	689.98	83.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	75.22	56.84	40.92	86.32	64.38	50.46	57.69	33.88	34.76	69.63	39.14	26.38
Movement LOS	E	E	D	F	E	D	E	C	C	E	D	C
d_A, Approach Delay [s/veh]	60.51			59.20			37.76			42.38		
Approach LOS	E			E			D			D		
d_I, Intersection Delay [s/veh]	46.24											
Intersection LOS	D											
Intersection V/C	0.854											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME.vistro

Scenario 6 Existing Plus Ambient Growth Plus Cumulative Evening Peak Hour

Report File: C:\...\PMEAC WO.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.967	46.3	D
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.720	19.7	B
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	EB Left	0.290	9.0	A
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	SB Left	0.178	8.1	A
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	WB Left	1.102	134.4	F
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	NB Thru	1.490	147.0	F
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	WB Left	0.138	147.6	F
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.943	69.0	E
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.944	29.4	C
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.748	7.1	A
18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.928	45.4	D
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.808	4.3	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	1.085	59.8	E
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.527	9.4	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.832	35.9	D
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.944	38.4	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	46.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.967

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	85	113	160	225	157	104	120	1108	48	284	1227	282
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	24	29	140	22	23	16	442	18	37	607	155
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	115	146	202	383	192	135	146	1639	70	344	1932	460
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	38	52	98	49	35	38	421	18	88	496	118
Total Analysis Volume [veh/h]	118	150	208	394	197	139	150	1684	72	354	1986	473
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	32	21	21	25	14	0	12	39	0	15	42	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	17	32	21	30	30	8	35	35	11	38	38
g / C, Green / Cycle	0.08	0.17	0.32	0.21	0.30	0.30	0.08	0.35	0.35	0.11	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.07	0.08	0.13	0.22	0.10	0.10	0.08	0.33	0.33	0.10	0.39	0.30
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1610	1774	3547	1824	3445	5074	1583
c, Capacity [veh/h]	150	320	509	373	554	479	142	1235	635	379	1919	599
d1, Uniform Delay [s]	44.92	37.33	26.49	39.52	27.33	27.36	46.02	31.56	31.59	44.15	31.10	27.58
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.83	4.87	2.42	38.70	1.55	1.81	50.68	4.16	7.51	10.62	20.29	2.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

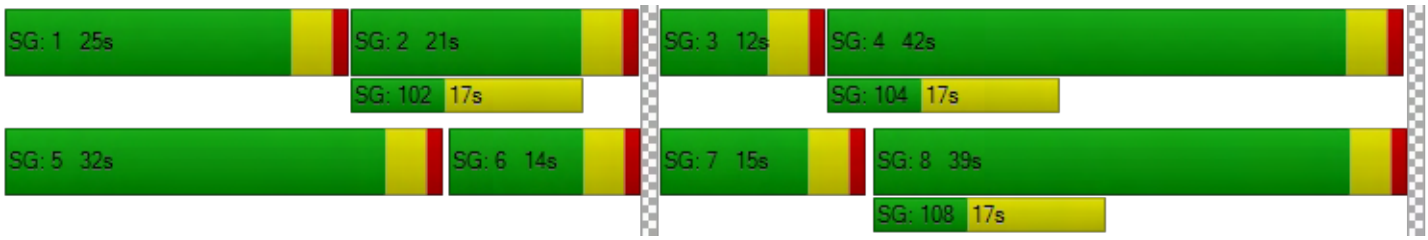
X, volume / capacity	0.79	0.47	0.41	1.06	0.32	0.33	1.06	0.94	0.94	0.93	1.03	0.79
d, Delay for Lane Group [s/veh]	53.75	42.20	28.91	78.22	28.88	29.17	96.70	35.72	39.10	54.77	51.40	29.96
Lane Group LOS	D	D	C	F	C	C	F	D	D	D	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.22	3.72	4.17	13.00	3.55	3.13	5.50	13.80	14.82	4.87	18.39	10.09
50th-Percentile Queue Length [ft/ln]	80.48	93.00	104.23	324.93	88.68	78.22	137.58	344.92	370.52	121.70	459.77	252.18
95th-Percentile Queue Length [veh/ln]	5.79	6.70	7.50	19.48	6.39	5.63	9.52	19.89	21.13	8.49	26.03	15.30
95th-Percentile Queue Length [ft/ln]	144.86	167.41	187.61	486.99	159.63	140.80	238.01	497.21	528.36	212.17	650.75	382.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.75	42.20	28.91	78.22	28.91	29.17	96.70	36.77	39.10	54.77	51.40	29.96
Movement LOS	D	D	C	F	C	C	F	D	D	D	F	C
d_A, Approach Delay [s/veh]	39.25			55.57			41.58			48.22		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	46.27											
Intersection LOS	D											
Intersection V/C	0.967											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.720

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	124	68	87	175	67	61	180	48	64	268	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	47	2	65	38	30	34	18	2	6	22	77
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	181	75	159	227	102	100	212	54	75	311	221
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	48	20	42	60	27	26	56	14	20	82	58
Total Analysis Volume [veh/h]	30	192	79	168	240	108	106	224	57	79	329	234
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	30	0	21	40	0	15	37	0	12	34	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	49	49	49	49	49	49	49	49	49	49
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	10	6	14	14	5	12	5	12	12
g / C, Green / Cycle	0.05	0.20	0.13	0.28	0.28	0.11	0.25	0.10	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.02	0.15	0.09	0.13	0.07	0.06	0.16	0.04	0.18	0.15
s, saturation flow rate [veh/h]	1774	1772	1774	1863	1583	1774	1798	1774	1863	1583
c, Capacity [veh/h]	87	350	230	518	440	195	453	169	441	375
d1, Uniform Delay [s]	22.58	18.66	20.53	14.68	13.72	20.66	16.28	21.02	17.36	16.77
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.36	3.70	4.43	0.65	0.29	2.33	1.40	2.00	2.53	1.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

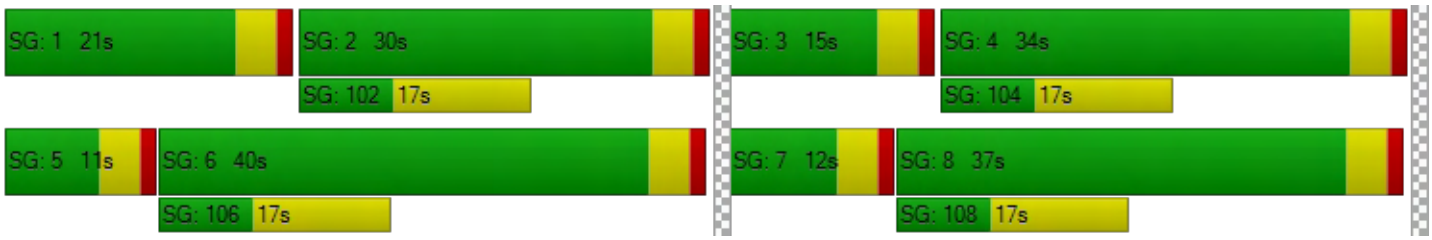
X, volume / capacity	0.35	0.77	0.73	0.46	0.25	0.54	0.62	0.47	0.75	0.62
d, Delay for Lane Group [s/veh]	24.94	22.36	24.96	15.32	14.01	22.99	17.68	23.02	19.89	18.48
Lane Group LOS	C	C	C	B	B	C	B	C	B	B
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.36	2.92	1.94	2.00	0.84	1.16	2.60	0.87	3.30	2.23
50th-Percentile Queue Length [ft/ln]	9.07	73.09	48.48	49.97	20.92	29.06	64.96	21.76	82.46	55.78
95th-Percentile Queue Length [veh/ln]	0.65	5.26	3.49	3.60	1.51	2.09	4.68	1.57	5.94	4.02
95th-Percentile Queue Length [ft/ln]	16.32	131.55	87.26	89.94	37.66	52.31	116.93	39.18	148.44	100.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.94	22.36	22.36	24.96	15.32	14.01	22.99	17.68	17.68	23.02	19.89	18.48
Movement LOS	C	C	C	C	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	22.61			18.19			19.14			19.76		
Approach LOS	C			B			B			B		
d_I, Intersection Delay [s/veh]	19.65											
Intersection LOS	B											
Intersection V/C	0.720											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.290

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	39	55	2	3	80	98	115	1	48	0	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	6	0	0	7	24	26	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	65	2	3	93	130	150	1	63	0	1	4
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	17	1	1	24	34	39	0	16	0	0	1
Total Analysis Volume [veh/h]	54	67	2	3	96	134	155	1	65	0	1	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	726	686	795	761	784
Degree of Utilization, x	0.17	0.14	0.17	0.29	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.61	0.50	0.60	1.21	0.02
95th-Percentile Queue Length [ft]	15.18	12.56	15.09	30.15	0.48
Approach Delay [s/veh]	8.97	8.44		9.65	7.62
Approach LOS	A	A		A	A
Intersection Delay [s/veh]	9.00				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	8.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.178

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	2	87	2	0	0	2	0	0	2	96
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	12	0	0	0	0	0	0	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	2	106	2	0	0	2	0	0	2	115
Peak Hour Factor	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	1	35	1	0	0	1	0	0	1	38
Total Analysis Volume [veh/h]	0	4	3	140	3	0	0	3	0	0	3	152
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	860	803	790	736	858
Degree of Utilization, x	0.01	0.18	0.00	0.00	0.18

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.02	0.65	0.01	0.01	0.64
95th-Percentile Queue Length [ft]	0.62	16.13	0.29	0.31	16.03
Approach Delay [s/veh]	7.22	8.45	7.58	7.79	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	8.08				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	134.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.102

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	344	91	813	337	126	109	132	1152	260	889	1249	218
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	169	13	325	39	17	26	20	494	134	315	670	30
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	541	111	1203	403	153	144	163	1738	415	1275	2019	265
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	138	28	308	103	39	37	42	445	106	326	517	68
Total Analysis Volume [veh/h]	554	114	1231	412	157	147	167	1779	425	1305	2067	271
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	27	27	20	21	0	38	45	0	48	55	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	378	378	378	378	378	378	378	378	378	378	378	378
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	64	74	198	48	58	58	21	120	120	120	219	219
g / C, Green / Cycle	0.17	0.20	0.52	0.13	0.15	0.15	0.05	0.32	0.32	0.32	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.16	0.06	0.44	0.12	0.08	0.09	0.05	0.35	0.27	0.38	0.43	0.46
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1583	3445	5074	1583	3445	3547	1758
c, Capacity [veh/h]	581	365	1469	437	287	244	188	1611	503	1093	2058	1020
d1, Uniform Delay [s]	155.63	130.07	76.32	163.65	147.59	148.98	177.48	128.97	120.34	128.97	58.64	61.42
k, delay calibration	0.11	0.11	0.25	0.11	0.11	0.11	0.11	0.11	0.37	0.18	0.24	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.48	0.48	3.04	10.50	1.62	2.38	13.00	49.49	12.27	90.48	1.22	6.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

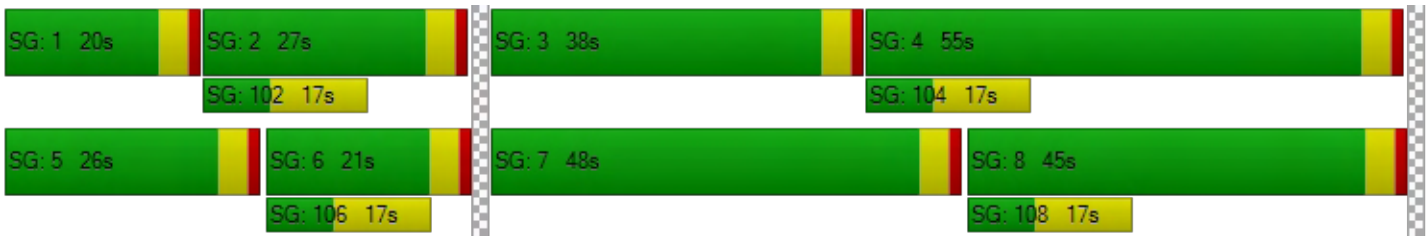
X, volume / capacity	0.95	0.31	0.84	0.94	0.55	0.60	0.89	1.10	0.85	1.19	0.74	0.79
d, Delay for Lane Group [s/veh]	165.11	130.55	79.36	174.15	149.21	151.36	190.48	178.47	132.61	219.45	59.86	67.62
Lane Group LOS	F	F	E	F	F	F	F	F	F	F	E	E
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	28.63	9.95	52.32	21.42	14.86	14.09	8.80	61.50	41.69	68.86	56.00	62.99
50th-Percentile Queue Length [ft/ln]	715.72	248.76	1308.03	535.44	371.57	352.17	219.99	1537.57	1042.27	1721.53	1400.05	1574.64
95th-Percentile Queue Length [veh/ln]	37.40	15.12	64.18	29.01	21.19	20.24	13.66	79.74	52.28	92.69	68.27	76.00
95th-Percentile Queue Length [ft/ln]	935.09	378.09	1604.59	725.19	529.64	506.05	341.61	1993.38	1307.00	2317.24	1706.87	1900.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	165.11	130.55	79.36	174.15	149.21	151.36	190.48	178.47	132.61	219.45	61.87	67.62
Movement LOS	F	F	E	F	F	F	F	F	F	F	E	E
d_A, Approach Delay [s/veh]	107.45			164.00			171.09			118.74		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	134.40											
Intersection LOS	F											
Intersection V/C	1.102											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	147.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.490

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	241	255	2	4	258	293	245	2	118	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	129	285	0	0	268	30	50	0	125	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	389	560	2	4	547	346	315	2	252	0	0	4
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	149	1	1	145	92	84	1	67	0	0	1
Total Analysis Volume [veh/h]	414	596	2	4	582	368	335	2	268	0	0	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	414	598	377	582	430	387	409	444	322
Degree of Utilization, x	1.09	1.49	0.01	1.47	0.86	0.87	0.00	0.60	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	14.76	31.66	0.03	30.31	8.49	8.41	0.01	3.88	0.04
95th-Percentile Queue Length [ft]	369.03	791.62	0.80	757.80	212.22	210.34	0.37	97.09	0.94
Approach Delay [s/veh]	193.96		167.54			37.13			14.32
Approach LOS	F		F			E			B
Intersection Delay [s/veh]	147.05								
Intersection LOS	F								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	147.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.138

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	82	472	0	0	349	13	7	0	82	4	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	416	0	0	395	0	0	0	12	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	926	0	0	772	14	8	0	101	4	0	0
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	238	0	0	198	4	2	0	26	1	0	0
Total Analysis Volume [veh/h]	103	951	0	0	793	14	8	0	104	4	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.01	0.00	0.00	0.01	0.00	0.18	0.00	0.27	0.14	0.00	0.00
d_M, Delay for Movement [s/veh]	10.03	0.00	0.00	9.98	0.00	0.00	104.86	72.36	17.62	147.58	89.13	35.25
Movement LOS	B	A	A	A	A	A	F	F	C	F	F	E
95th-Percentile Queue Length [veh/ln]	0.43	0.00	0.00	0.00	0.00	0.00	0.59	1.06	1.06	0.42	0.42	0.42
95th-Percentile Queue Length [ft/ln]	10.75	0.00	0.00	0.00	0.00	0.00	14.82	26.61	26.61	10.54	10.54	10.54
d_A, Approach Delay [s/veh]	0.98			0.00			23.85			147.58		
Approach LOS	A			A			C			F		
d_I, Intersection Delay [s/veh]	2.17											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	69.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.943

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	51	32	319	19	43	39	435	20	55	441	467
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	52	32	261	141	6	54	54	139	8	39	134	182
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	87	296	486	27	100	96	609	30	98	610	686
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	22	76	125	7	26	25	156	8	25	156	176
Total Analysis Volume [veh/h]	90	89	304	498	28	103	98	625	31	101	626	704
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	47	0	11	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	214	214	214	214	214	214	214	214	214	214	214
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	44	44	44	42	42	14	98	98	14	99	99
g / C, Green / Cycle	0.20	0.20	0.20	0.19	0.19	0.06	0.46	0.46	0.07	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.19	0.18	0.18	0.06	0.18	0.18	0.06	0.18	0.44
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1713	1774	1863	1832	1774	3547	1583
c, Capacity [veh/h]	363	381	324	345	333	115	856	841	118	1635	730
d1, Uniform Delay [s]	71.48	71.26	83.98	84.85	84.90	99.27	38.12	38.13	99.08	37.83	56.10
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.33
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.35	0.31	12.54	10.59	11.16	15.56	0.29	0.29	15.50	0.15	19.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

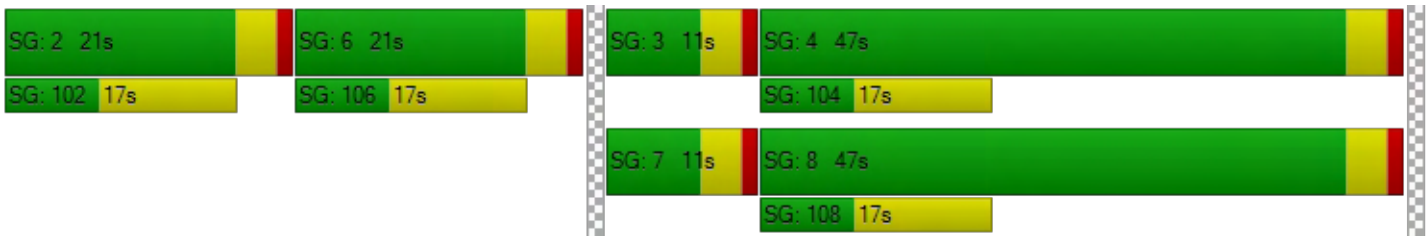
X, volume / capacity	0.25	0.23	0.94	0.93	0.93	0.85	0.39	0.39	0.85	0.38	0.96
d, Delay for Lane Group [s/veh]	71.83	71.57	96.52	95.44	96.06	114.83	38.41	38.42	114.58	37.98	75.80
Lane Group LOS	E	E	F	F	F	F	D	D	F	D	E
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.25	4.19	17.86	18.58	18.05	5.97	11.85	11.66	6.15	11.13	41.01
50th-Percentile Queue Length [ft/ln]	106.29	104.73	446.51	464.55	451.28	149.35	296.19	291.62	153.80	278.34	1025.37
95th-Percentile Queue Length [veh/ln]	7.63	7.54	24.79	25.65	25.02	9.98	17.49	17.27	10.22	16.61	51.52
95th-Percentile Queue Length [ft/ln]	190.84	188.52	619.78	641.28	625.47	249.56	437.31	431.65	255.49	415.15	1287.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	71.83	71.57	96.52	95.66	96.06	96.06	114.83	38.41	38.42	114.58	37.98	75.80
Movement LOS	E	E	F	F	F	F	F	D	D	F	D	E
d_A, Approach Delay [s/veh]	87.32			95.74			48.35			61.99		
Approach LOS	F			F			D			E		
d_I, Intersection Delay [s/veh]	69.02											
Intersection LOS	E											
Intersection V/C	0.943											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	29.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.944

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	419	0	582	0	1721	464	0	1844	466
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.08	1.00	1.08	1.00	1.08	1.08	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	209	0	382	0	615	243	0	633	35
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	662	0	1011	0	2474	744	0	2625	538
Peak Hour Factor	1.0000	1.0000	1.0000	0.9870	1.0000	0.9870	1.0000	0.9870	0.9870	1.0000	0.9870	0.9870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	168	0	256	0	627	0	0	665	0
Total Analysis Volume [veh/h]	0	0	0	671	0	1024	0	2507	0	0	2660	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	58	0	0	0	82	0	0	82	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		48	48	48	64	64	64	64
g / C, Green / Cycle		0.40	0.40	0.40	0.53	0.53	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate		0.32	0.35	0.36	0.37	0.00	0.52	0.00
s, saturation flow rate [veh/h]		1774	1616	1583	6765	1583	5074	1583
c, Capacity [veh/h]		711	647	634	3605	844	2704	844
d1, Uniform Delay [s]		31.73	33.25	33.62	20.86	0.00	27.60	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.08	3.86	4.57	0.25	0.00	5.11	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

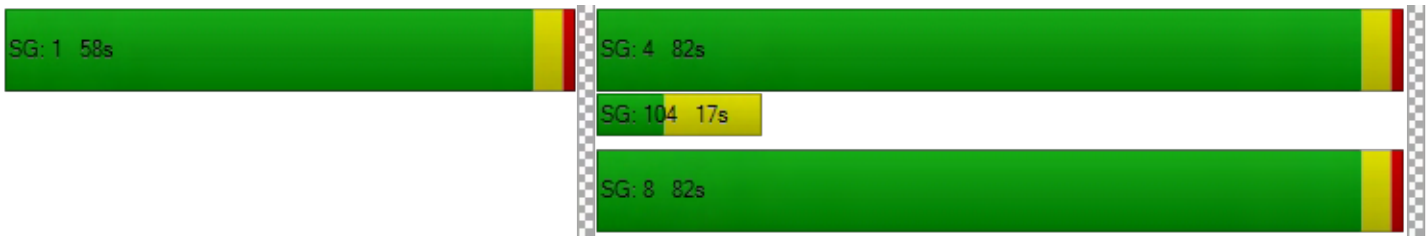
X, volume / capacity		0.79	0.87	0.89	0.70	0.00	0.98	0.00
d, Delay for Lane Group [s/veh]		33.80	37.11	38.19	21.10	0.00	32.71	0.00
Lane Group LOS		C	D	D	C	A	C	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		14.61	15.57	15.85	12.72	0.00	24.97	0.00
50th-Percentile Queue Length [ft/ln]		365.24	389.36	396.31	317.99	0.00	624.28	0.00
95th-Percentile Queue Length [veh/ln]		20.88	22.05	22.38	18.57	0.00	33.17	0.00
95th-Percentile Queue Length [ft/ln]		521.95	551.17	559.56	464.21	0.00	829.17	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	34.32	0.00	37.70	0.00	21.10	0.00	0.00	32.71	0.00
Movement LOS				C		D		C	A		C	A
d_A, Approach Delay [s/veh]	0.00			36.37			21.10			32.71		
Approach LOS	A			D			C			C		
d_I, Intersection Delay [s/veh]	29.37											
Intersection LOS	C											
Intersection V/C	0.944											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	7.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.748

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	392	0	155	0	497	238	0	680	413
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.08	1.00	1.08	1.00	1.08	1.08	1.04	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	80	0	380	254	0	360	88
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	423	0	247	0	917	511	0	1094	534
Peak Hour Factor	1.0000	1.0000	1.0000	0.9470	1.0000	0.9470	1.0000	0.9470	0.9470	0.9470	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	112	0	65	0	242	135	0	289	141
Total Analysis Volume [veh/h]	0	0	0	447	0	261	0	968	540	0	1155	564
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	29	0	0	0	71	0	0	71	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		34	34	34	34	34	34
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		8	8	18	18	18	18
g / C, Green / Cycle		0.23	0.23	0.53	0.53	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate		0.13	0.09	0.27	0.34	0.33	0.36
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		810	659	1888	843	1888	843
d1, Uniform Delay [s]		11.56	11.09	5.18	5.71	5.58	5.85
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.59	0.39	0.22	0.82	0.32	0.93
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

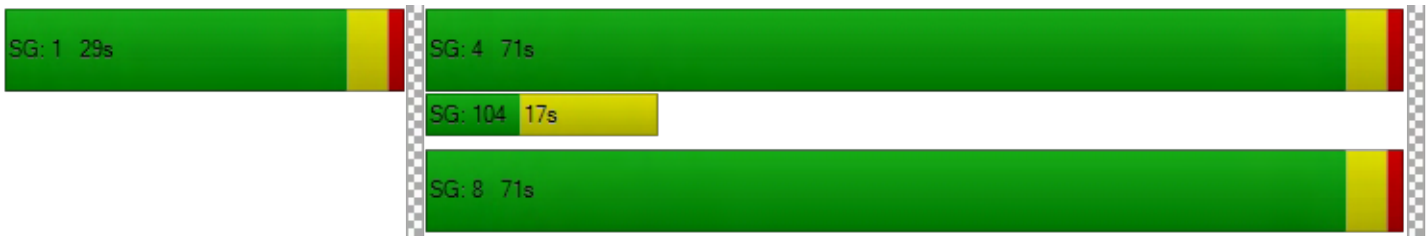
X, volume / capacity		0.55	0.40	0.51	0.64	0.61	0.67
d, Delay for Lane Group [s/veh]		12.15	11.48	5.39	6.53	5.91	6.77
Lane Group LOS		B	B	A	A	A	A
Critical Lane Group		Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		1.20	0.67	1.10	1.48	1.43	1.59
50th-Percentile Queue Length [ft/ln]		29.88	16.70	27.57	36.98	35.76	39.84
95th-Percentile Queue Length [veh/ln]		2.15	1.20	1.98	2.66	2.57	2.87
95th-Percentile Queue Length [ft/ln]		53.79	30.06	49.62	66.57	64.37	71.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	12.15	0.00	11.48	0.00	5.39	6.53	0.00	5.91	6.77
Movement LOS				B		B		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			11.90			5.80			6.19		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	7.07											
Intersection LOS	A											
Intersection V/C	0.748											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	45.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.928

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	517	0	746	0	0	0	0	1885	382	0	1690	480
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.00	1.08	1.00	1.00	1.00	1.00	1.08	1.08	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	326	0	52	0	0	0	0	547	277	0	342	133
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	884	0	858	0	0	0	0	2583	690	0	2167	651
Peak Hour Factor	0.9810	1.0000	0.9810	1.0000	1.0000	1.0000	1.0000	0.9810	0.9810	1.0000	0.9810	0.9810
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	225	0	219	0	0	0	0	658	0	0	552	0
Total Analysis Volume [veh/h]	901	0	875	0	0	0	0	2633	0	0	2209	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	59	0	0	0	0	0	0	81	0	0	81	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	211	211	211		211	211	211	211
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	84	84	84		119	119	119	119
g / C, Green / Cycle	0.40	0.40	0.40		0.56	0.56	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.33	0.35	0.37		0.52	0.00	0.33	0.00
s, saturation flow rate [veh/h]	1774	1677	1583		5074	1583	6765	1583
c, Capacity [veh/h]	708	670	632		2857	891	3809	891
d1, Uniform Delay [s]	57.29	58.99	60.96		41.97	0.00	29.98	0.00
k, delay calibration	0.17	0.20	0.22		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.16	7.07	12.98		1.54	0.00	0.14	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

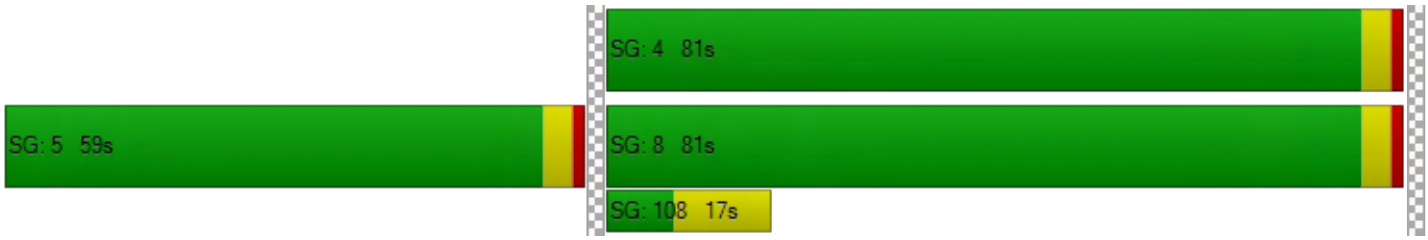
X, volume / capacity	0.84	0.88	0.94		0.92	0.00	0.58	0.00
d, Delay for Lane Group [s/veh]	61.44	66.05	73.94		43.50	0.00	30.12	0.00
Lane Group LOS	E	E	E		D	A	C	A
Critical Lane Group	No	No	Yes		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	29.61	30.96	32.92		41.92	0.00	18.70	0.00
50th-Percentile Queue Length [ft/ln]	740.26	774.04	822.97		1048.07	0.00	467.45	0.00
95th-Percentile Queue Length [veh/ln]	38.53	40.09	42.33		52.54	0.00	25.79	0.00
95th-Percentile Queue Length [ft/ln]	963.36	1002.18	1058.21		1313.54	0.00	644.74	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.02	0.00	71.39	0.00	0.00	0.00	0.00	43.50	0.00	0.00	30.12	0.00
Movement LOS	E		E					D	A		C	A
d_A, Approach Delay [s/veh]	67.15			0.00			43.50			30.12		
Approach LOS	E			A			D			C		
d_I, Intersection Delay [s/veh]	45.38											
Intersection LOS	D											
Intersection V/C	0.928											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	4.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.808

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	490	0	0	345	70	831	0	0	759	395
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.08	1.00	1.00	1.08	1.08	1.08	1.00	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	151	0	0	175	194	186	0	0	273	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	680	0	0	548	270	1083	0	0	1093	427
Peak Hour Factor	0.9650	1.0000	0.9650	1.0000	1.0000	0.9650	0.9650	0.9650	1.0000	1.0000	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	176	0	0	142	70	281	0	0	283	111
Total Analysis Volume [veh/h]	0	0	705	0	0	568	280	1122	0	0	1133	442
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	64	100	0	0	36	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			29	29	29	29
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			6	25	15	15
g / C, Green / Cycle			0.22	0.86	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate			0.16	0.32	0.32	0.28
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			384	3064	1815	810
d1, Uniform Delay [s]			10.72	0.40	5.15	4.87
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			2.67	0.07	0.36	0.57
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.73	0.37	0.62	0.55
d, Delay for Lane Group [s/veh]			13.40	0.47	5.51	5.44
Lane Group LOS			B	A	A	A
Critical Lane Group			Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]			1.45	0.03	1.00	0.80
50th-Percentile Queue Length [ft/ln]			36.24	0.78	25.04	20.03
95th-Percentile Queue Length [veh/ln]			2.61	0.06	1.80	1.44
95th-Percentile Queue Length [ft/ln]			65.24	1.40	45.07	36.05

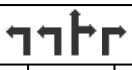
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	13.40	0.47	0.00	0.00	5.51	5.44
Movement LOS							B	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			3.05			5.49		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.34											
Intersection LOS	A											
Intersection V/C	0.808											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	59.8
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.085

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	693	108	189	28	78	147	145	1761	633	174	1352	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	90	19	1	25	25	103	104	359	136	1	282	24
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	838	136	205	55	109	262	261	2261	820	189	1742	53
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	217	35	53	14	28	68	68	585	212	49	451	14
Total Analysis Volume [veh/h]	867	141	212	57	113	271	270	2341	849	196	1803	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	36	23	0	34	21	0	35	71	0	12	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	32	43	43	6	17	17	13	67	67	8	61	61
g / C, Green / Cycle	0.23	0.31	0.31	0.04	0.12	0.12	0.10	0.48	0.48	0.06	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.25	0.08	0.13	0.02	0.12	0.12	0.08	0.46	0.54	0.06	0.34	0.35
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1730	1583	3445	5074	1583	3445	3547	1835
c, Capacity [veh/h]	787	571	485	154	212	194	332	2422	756	197	1554	804
d1, Uniform Delay [s]	54.02	36.43	38.87	64.98	60.96	60.96	62.05	35.52	36.60	65.99	33.74	33.78
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.20	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	50.30	1.03	2.84	1.48	48.85	51.64	4.85	3.73	63.15	28.43	0.92	1.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

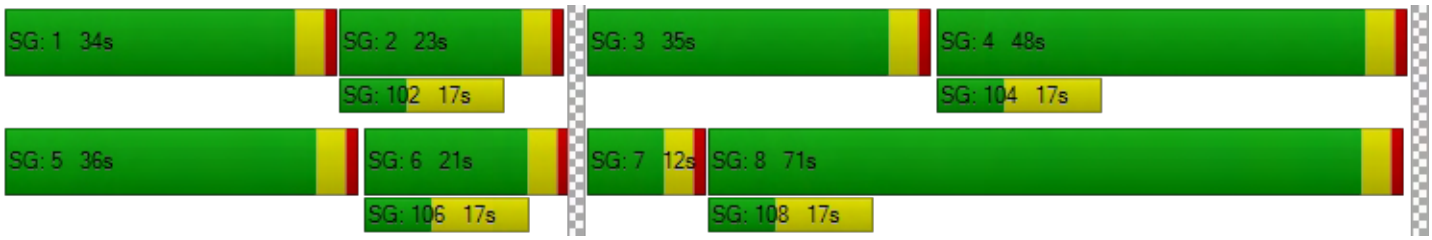
X, volume / capacity	1.10	0.25	0.44	0.37	0.94	0.95	0.81	0.97	1.12	0.99	0.79	0.79
d, Delay for Lane Group [s/veh]	104.31	37.46	41.72	66.46	109.80	112.61	66.90	39.25	99.75	94.42	34.66	35.56
Lane Group LOS	F	D	D	E	F	F	E	D	F	F	C	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	19.34	3.84	6.28	1.02	9.97	9.28	4.95	26.08	38.44	4.29	17.89	18.77
50th-Percentile Queue Length [ft/ln]	483.60	96.02	157.10	25.62	249.13	231.96	123.75	651.96	961.09	107.23	447.19	469.22
95th-Percentile Queue Length [veh/ln]	28.03	6.91	10.40	1.84	15.14	14.27	8.60	34.45	53.07	7.69	24.82	25.87
95th-Percentile Queue Length [ft/ln]	700.63	172.84	259.88	46.12	378.56	356.85	214.97	861.34	1326.68	192.15	620.60	646.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	104.31	37.46	41.72	66.46	109.80	111.74	66.90	39.25	99.75	94.42	34.95	35.56
Movement LOS	F	D	D	E	F	F	E	D	F	F	C	D
d_A, Approach Delay [s/veh]	85.71			105.37			56.25			40.64		
Approach LOS	F			F			E			D		
d_I, Intersection Delay [s/veh]	59.81											
Intersection LOS	E											
Intersection V/C	1.085											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.527

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	410	88	191	431	0	0	0	0	71	0	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.08	1.08	1.08	1.08	1.00	1.08	1.08	1.08	1.08	1.00	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	63	80	0	109	0	0	0	0	46	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	506	175	206	574	0	0	0	0	123	0	135
Peak Hour Factor	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	136	47	56	155	0	0	0	0	33	0	36
Total Analysis Volume [veh/h]	0	546	189	222	619	0	0	0	0	133	0	146
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	62	0	17	79	0	0	0	0	21	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	33	33	33	33		33	33	33
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	6	18		6	6	6
g / C, Green / Cycle	0.25	0.25	0.19	0.56		0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.15	0.12	0.13	0.17		0.06	0.06	0.06
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1651	1583
c, Capacity [veh/h]	900	402	330	1990		349	325	311
d1, Uniform Delay [s]	10.87	10.44	12.50	3.85		11.28	11.29	11.29
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.66	0.86	2.38	0.09		0.43	0.47	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.47	0.67	0.31		0.28	0.28	0.29
d, Delay for Lane Group [s/veh]	11.53	11.30	14.88	3.94		11.72	11.76	11.79
Lane Group LOS	B	B	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.36	0.94	1.38	0.45		0.50	0.48	0.46
50th-Percentile Queue Length [ft/ln]	33.92	23.57	34.41	11.27		12.61	11.97	11.60
95th-Percentile Queue Length [veh/ln]	2.44	1.70	2.48	0.81		0.91	0.86	0.84
95th-Percentile Queue Length [ft/ln]	61.06	42.43	61.93	20.28		22.70	21.54	20.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	11.53	11.30	14.88	3.94	0.00	0.00	0.00	0.00	11.73	0.00	11.78
Movement LOS		B	B	B	A					B		B
d_A, Approach Delay [s/veh]	11.47			6.83			0.00			11.76		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	9.41											
Intersection LOS	A											
Intersection V/C	0.527											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	35.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.832

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	392	287	189	59	167	279	271	777	283	60	508	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	32	6	8	0	3	93	134	172	31	5	148	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	455	316	212	64	183	394	427	1011	337	70	697	58
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	81	54	16	47	101	109	259	86	18	179	15
Total Analysis Volume [veh/h]	466	324	217	66	188	404	438	1036	345	72	714	59
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	21	0	33	35	0	19	35	0	11	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	103	103	103	103	103	103	103	103	103	103	103	103
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	40	40	6	29	29	16	35	35	6	25	25
g / C, Green / Cycle	0.16	0.39	0.39	0.06	0.28	0.28	0.16	0.34	0.34	0.06	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.14	0.09	0.14	0.04	0.10	0.26	0.13	0.29	0.22	0.02	0.14	0.15
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1791
c, Capacity [veh/h]	566	1379	616	102	526	447	536	1205	538	204	863	436
d1, Uniform Delay [s]	41.78	21.26	22.39	47.72	29.65	35.79	42.25	31.87	28.84	46.77	34.64	34.68
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.08	0.09	0.34	6.66	0.41	7.07	3.11	1.92	1.28	1.04	0.66	1.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

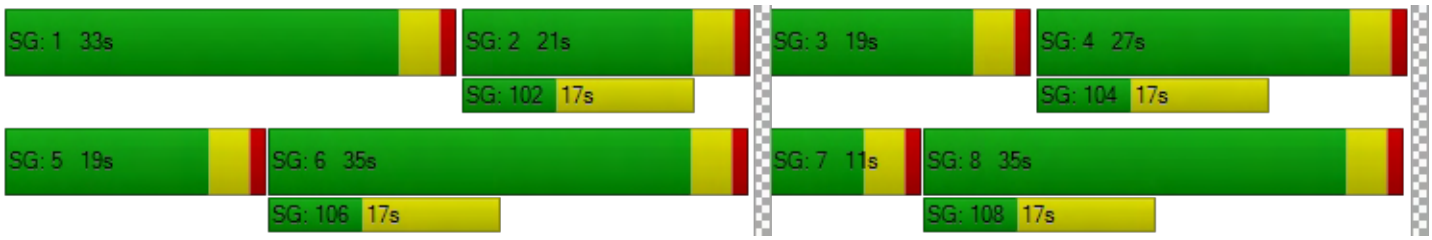
X, volume / capacity	0.82	0.23	0.35	0.65	0.36	0.90	0.82	0.86	0.64	0.35	0.59	0.60
d, Delay for Lane Group [s/veh]	44.86	21.35	22.73	54.39	30.07	42.87	45.37	33.79	30.13	47.81	35.29	36.00
Lane Group LOS	D	C	C	D	C	D	D	C	C	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.93	2.63	3.75	1.85	3.77	10.49	5.59	12.08	7.28	0.92	5.72	5.90
50th-Percentile Queue Length [ft/ln]	148.17	65.76	93.63	46.13	94.13	262.22	139.69	301.98	181.99	22.90	142.98	147.56
95th-Percentile Queue Length [veh/ln]	9.92	4.73	6.74	3.32	6.78	15.80	9.46	17.78	11.70	1.65	9.64	9.89
95th-Percentile Queue Length [ft/ln]	247.98	118.36	168.53	83.03	169.44	395.00	236.61	444.48	292.61	41.22	241.03	247.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.86	21.35	22.73	54.39	30.07	42.87	45.37	33.79	30.13	47.81	35.49	36.00
Movement LOS	D	C	C	D	C	D	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	32.53			40.36			35.88			36.58		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	35.92											
Intersection LOS	D											
Intersection V/C	0.832											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	38.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.944

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	105	177	226	200	219	114	121	958	60	312	1197	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	112	79	71	26	119	32	43	170	162	89	153	18
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	225	270	315	242	356	155	174	1205	227	426	1446	196
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	70	82	63	93	40	45	313	59	111	376	51
Total Analysis Volume [veh/h]	234	281	328	252	370	161	181	1254	236	443	1505	204
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	22	22	17	21	21	40	46	0	15	21	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	126	126	126	126	126	126	126	126	126	126	126	126
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	13	37	20	22	39	13	57	57	20	64	64
g / C, Green / Cycle	0.09	0.11	0.30	0.16	0.18	0.31	0.10	0.45	0.45	0.16	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.07	0.08	0.21	0.14	0.10	0.10	0.05	0.41	0.42	0.13	0.30	0.13
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1763	3445	5074	1583
c, Capacity [veh/h]	303	373	469	284	629	492	350	836	791	548	2569	802
d1, Uniform Delay [s]	56.37	54.91	39.49	51.93	47.71	33.40	53.80	32.25	32.89	51.26	21.88	17.67
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.20	3.08	1.91	9.13	0.88	0.38	1.18	3.97	5.46	2.90	0.21	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

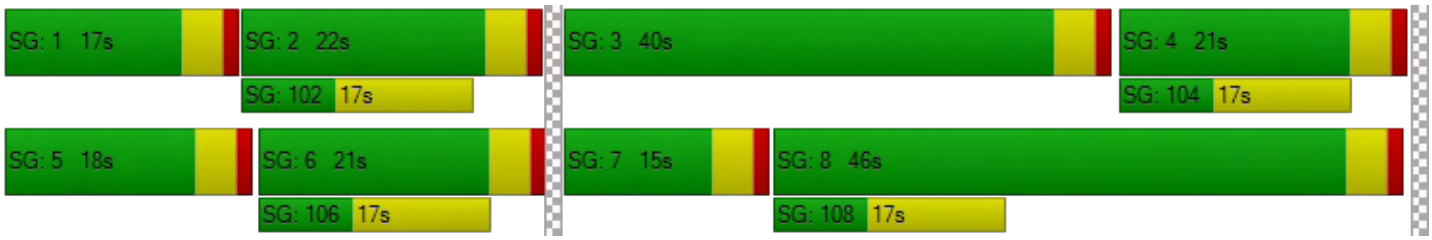
X, volume / capacity	0.77	0.75	0.70	0.89	0.59	0.33	0.52	0.90	0.93	0.81	0.59	0.25
d, Delay for Lane Group [s/veh]	60.57	58.00	41.40	61.06	48.58	33.78	54.99	36.22	38.35	54.16	22.09	17.83
Lane Group LOS	E	E	D	E	D	C	D	D	D	D	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.83	4.50	9.26	8.52	5.44	3.86	2.79	21.78	21.91	6.98	10.33	3.41
50th-Percentile Queue Length [ft/ln]	95.67	112.61	231.57	212.98	135.88	96.62	69.73	544.62	547.65	174.48	258.35	85.33
95th-Percentile Queue Length [veh/ln]	6.89	7.99	14.25	13.31	9.26	6.96	5.02	29.44	29.58	11.31	15.61	6.14
95th-Percentile Queue Length [ft/ln]	172.21	199.63	356.35	332.65	231.46	173.91	125.52	735.99	739.55	282.80	390.15	153.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.57	58.00	41.40	61.06	48.58	33.78	54.99	37.06	38.35	54.16	22.09	17.83
Movement LOS	E	E	D	E	D	C	D	D	D	D	C	B
d_A, Approach Delay [s/veh]	52.25			49.56			39.19			28.29		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	38.40											
Intersection LOS	D											
Intersection V/C	0.944											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PLUS CUMULATIVE (WITHOUT HOLLAND ROAD OVERPASS)

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME.vistro

Scenario 6 Existing Plus Ambient Growth Plus Project Plus Cumulative Morning Peak Hour

Report File: C:\...\AMEAPC WO.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Thru	1.043	43.5	D
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	NB Left	0.956	81.6	F
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	NB Thru	1.164	58.4	F
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	WB Right	0.920	35.9	E
5	Sherman Rd (NS) at MFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	8.9	A
6	Sherman Rd (NS) at SFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	8.9	A
7	MFR Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Left	0.019	17.4	C
8	Commercial Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Right	0.011	10.9	B
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.972	67.3	E
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	NB Thru	1.343	109.4	F
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	WB Right	0.002	10,000.0	F
12	Haun Rd (NS) at North Project Access (EW)	Signalized	HCM 2010	EB Left	0.602	3.3	A
13	Haun Rd (NS) at Central Project Access (EW)	Signalized	HCM 2010	EB Left	0.591	6.5	A
14	Haun Rd (NS) at South Project Access (EW)	Two-way stop	HCM 2010	EB Right	0.038	17.0	C
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Right	1.045	114.0	F
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.722	24.8	C
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Right	0.807	7.1	A

18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.750	18.2	B
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.729	3.6	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.974	48.8	D
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.532	9.7	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.848	34.8	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.862	47.6	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	43.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.043

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	109	200	378	166	239	58	73	1097	67	337	764	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	25	20	24	76	20	10	18	454	26	10	224	51
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	143	236	432	255	278	73	97	1639	98	374	1049	169
Peak Hour Factor	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	68	124	73	80	21	28	472	28	108	302	49
Total Analysis Volume [veh/h]	165	272	497	293	320	84	112	1886	113	430	1207	194
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	21	21	21	16	0	30	41	0	17	28	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	17	34	17	23	23	8	37	37	13	42	42
g / C, Green / Cycle	0.11	0.17	0.34	0.17	0.23	0.23	0.08	0.37	0.37	0.13	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.09	0.15	0.31	0.17	0.11	0.11	0.06	0.37	0.37	0.12	0.24	0.12
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1731	1774	3547	1810	3445	5074	1583
c, Capacity [veh/h]	200	319	540	302	426	396	142	1308	667	448	2124	663
d1, Uniform Delay [s]	43.43	40.23	31.64	41.27	33.51	33.54	45.15	31.57	31.57	43.25	22.19	19.27
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.39	24.06	23.29	18.16	4.00	4.34	9.15	14.06	20.22	12.33	0.24	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

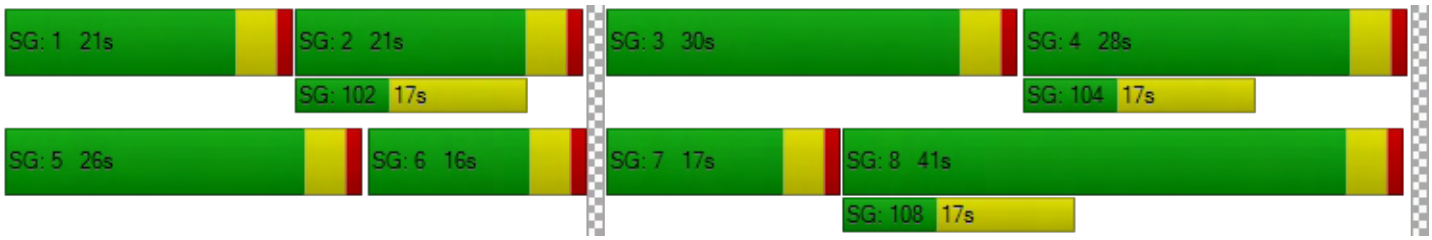
X, volume / capacity	0.83	0.85	0.92	0.97	0.49	0.49	0.79	1.01	1.02	0.96	0.57	0.29
d, Delay for Lane Group [s/veh]	51.82	64.30	54.93	59.43	37.51	37.88	54.31	45.62	51.79	55.58	22.43	19.51
Lane Group LOS	D	E	D	E	D	D	D	F	F	E	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.43	8.55	14.67	8.60	4.84	4.56	3.07	17.72	19.23	6.00	7.04	2.97
50th-Percentile Queue Length [ft/ln]	110.65	213.77	366.86	215.05	120.93	113.99	76.81	443.03	480.63	149.91	176.08	74.36
95th-Percentile Queue Length [veh/ln]	7.88	13.35	20.96	13.41	8.44	8.06	5.53	24.79	26.70	10.01	11.40	5.35
95th-Percentile Queue Length [ft/ln]	196.91	333.67	523.91	335.30	211.10	201.54	138.25	619.84	667.61	250.30	284.89	133.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.82	64.30	54.93	59.43	37.64	37.88	54.31	47.47	51.79	55.58	22.43	19.51
Movement LOS	D	E	D	E	D	D	D	D	D	E	C	B
d_A, Approach Delay [s/veh]	57.11			46.83			48.06			29.90		
Approach LOS	E			D			D			C		
d_I, Intersection Delay [s/veh]	43.46											
Intersection LOS	D											
Intersection V/C	1.043											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	81.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.956

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	48	318	164	66	426	204	106	228	182	174	174	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	58	9	29	73	18	13	11	11	6	4	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	401	186	100	533	238	127	257	208	194	192	135
Peak Hour Factor	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	116	54	29	154	69	37	74	60	56	56	39
Total Analysis Volume [veh/h]	74	465	216	116	618	276	147	298	241	225	222	156
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	40	0	11	40	0	13	33	0	16	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	232	232	232	232	232	232	232	232	232	232
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	92	17	98	98	21	75	32	85	85
g / C, Green / Cycle	0.05	0.40	0.07	0.42	0.42	0.09	0.32	0.14	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.04	0.39	0.07	0.33	0.17	0.08	0.31	0.13	0.12	0.10
s, saturation flow rate [veh/h]	1774	1764	1774	1863	1583	1774	1727	1774	1863	1583
c, Capacity [veh/h]	89	700	132	785	667	164	558	242	684	582
d1, Uniform Delay [s]	109.35	68.82	106.47	58.24	47.13	104.39	77.43	99.20	52.80	51.59
k, delay calibration	0.11	0.29	0.11	0.21	0.11	0.11	0.18	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	17.23	20.19	16.17	3.47	0.41	15.64	16.31	14.42	0.27	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

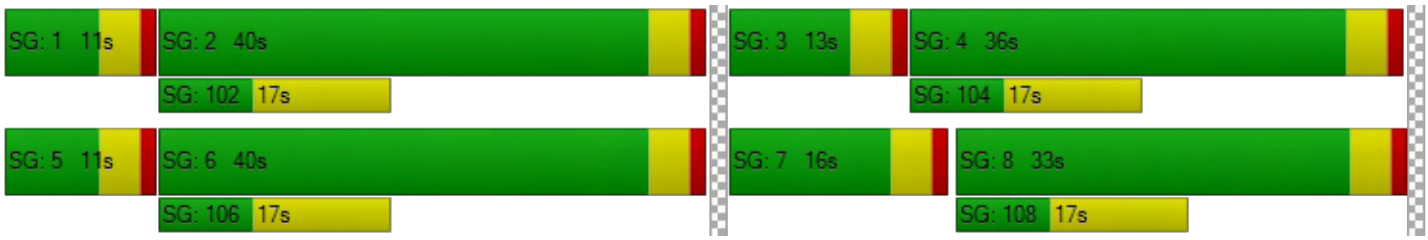
X, volume / capacity	0.83	0.97	0.88	0.79	0.41	0.90	0.97	0.93	0.32	0.27
d, Delay for Lane Group [s/veh]	126.58	89.01	122.63	61.71	47.55	120.03	93.74	113.62	53.08	51.84
Lane Group LOS	F	F	F	E	D	F	F	F	D	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.93	43.87	7.64	32.61	11.59	9.63	34.48	14.58	9.61	6.60
50th-Percentile Queue Length [ft/ln]	123.35	1096.66	191.09	815.23	289.72	240.79	862.06	364.39	240.23	165.04
95th-Percentile Queue Length [veh/ln]	8.58	54.73	12.18	41.97	17.17	14.72	44.11	20.84	14.69	10.82
95th-Percentile Queue Length [ft/ln]	214.42	1368.21	304.44	1049.35	429.29	368.03	1102.82	520.92	367.32	270.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	126.58	89.01	89.01	122.63	61.71	47.55	120.03	93.74	93.74	113.62	53.08	51.84
Movement LOS	F	F	F	F	E	D	F	F	F	F	D	D
d_A, Approach Delay [s/veh]	92.69			64.84			99.37			75.35		
Approach LOS	F			E			F			E		
d_I, Intersection Delay [s/veh]	81.56											
Intersection LOS	F											
Intersection V/C	0.956											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	58.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.164

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	105	296	0	2	252	175	103	2	51	1	6	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	67	0	0	55	17	11	0	8	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	387	0	2	327	206	122	2	63	1	6	25
Peak Hour Factor	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	130	0	1	109	69	41	1	21	0	2	8
Total Analysis Volume [veh/h]	163	518	0	3	438	276	163	3	84	1	8	33
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	681	554	622	516	477
Degree of Utilization, x	1.16	0.80	0.44	0.49	0.09

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	23.04	7.60	2.28	2.62	0.29
95th-Percentile Queue Length [ft]	576.12	189.92	56.88	65.50	7.21
Approach Delay [s/veh]	113.57	23.36		16.39	11.28
Approach LOS	F	C		C	B
Intersection Delay [s/veh]	58.38				
Intersection LOS	F				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	35.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.920

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	0	278	1	1	2	2	0	0	6	364
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	35	15	56	13	0	0	0	0	5	0	41
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	38	15	356	14	1	2	2	0	5	6	434
Peak Hour Factor	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	5	120	5	0	1	1	0	2	2	147
Total Analysis Volume [veh/h]	0	51	20	481	19	1	3	3	0	7	8	586
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	545	593	498	545	637
Degree of Utilization, x	0.13	0.84	0.01	0.03	0.92

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.45	9.09	0.04	0.08	11.99
95th-Percentile Queue Length [ft]	11.15	227.34	0.91	2.12	299.79
Approach Delay [s/veh]	10.60	33.44	10.32	41.24	
Approach LOS	B	D	B	E	
Intersection Delay [s/veh]	35.92				
Intersection LOS	E				

Intersection Level Of Service Report
Intersection 5: Sherman Rd (NS) at MFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	3	0	0	1	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	40	0	4	14	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	4	15	0	10
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	1	4	0	3
Total Analysis Volume [veh/h]	45	0	4	16	0	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.31	0.00	8.90	8.55
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.19	0.19	0.81	0.81
d_A, Approach Delay [s/veh]	0.00		1.46		8.55	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.62					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Sherman Rd (NS) at SFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	3	0	0	1	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	40	0	9	5	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	9	6	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	2	2	0	0
Total Analysis Volume [veh/h]	45	0	9	6	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.32	0.00	8.87	8.51
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.43	0.43	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		4.39		8.69	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.10					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: MFR Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	280	0	0	373
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	51	69	2	15	40
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	51	371	2	15	443
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	13	98	1	4	117
Total Analysis Volume [veh/h]	6	54	391	2	16	466
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.08	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	17.36	11.17	0.00	0.00	8.13	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.34	0.34	0.00	0.00	0.04	0.02
95th-Percentile Queue Length [ft/ln]	8.45	8.45	0.00	0.00	0.98	0.49
d_A, Approach Delay [s/veh]	11.79		0.00		0.27	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.90					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Commercial Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	280	0	0	373
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.08	1.08	1.08	1.00	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	112	8	0	55
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	7	414	8	0	458
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	109	2	0	121
Total Analysis Volume [veh/h]	0	7	436	8	0	482
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

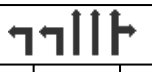
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	10.90	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.86	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.90		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	67.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.972

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	77	569	110	38	30	121	1432	206	709	1057	322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	12	243	7	4	6	17	526	92	209	268	25
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	188	95	858	126	45	38	148	2073	314	975	1410	373
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	25	226	33	12	10	39	547	83	257	372	98
Total Analysis Volume [veh/h]	198	100	905	133	47	40	156	2187	331	1028	1487	393
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	22	22	11	21	0	55	65	0	42	52	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	275	275	275	275	275	275	275	275	275	275	275	275
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	36	130	13	31	31	15	120	120	90	195	195
g / C, Green / Cycle	0.07	0.13	0.47	0.05	0.11	0.11	0.05	0.44	0.44	0.33	0.71	0.71
(v / s)_i Volume / Saturation Flow Rate	0.06	0.05	0.32	0.04	0.02	0.03	0.05	0.43	0.21	0.30	0.35	0.38
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1595	3445	5074	1583	3445	3547	1682
c, Capacity [veh/h]	229	247	1326	162	211	181	186	2213	691	1123	2512	1191
d1, Uniform Delay [s]	127.18	109.36	56.40	129.92	110.84	111.10	128.95	76.86	55.29	89.08	17.96	19.03
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.40
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.37	1.07	0.63	9.72	0.50	0.65	9.62	6.57	0.52	3.44	0.15	1.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

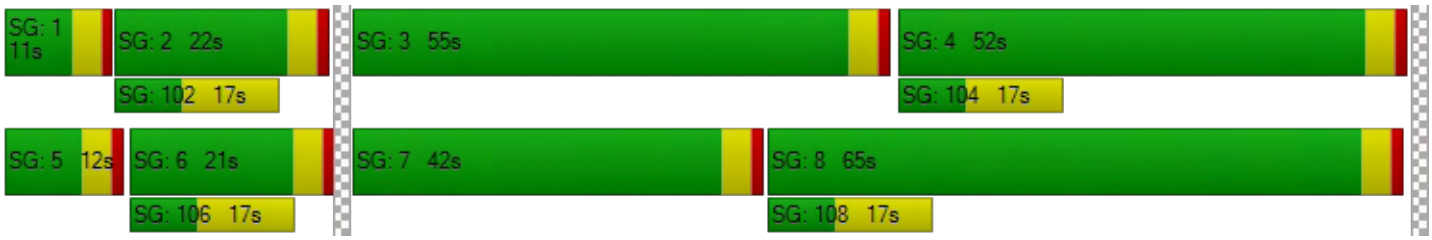
X, volume / capacity	0.86	0.40	0.68	0.82	0.21	0.23	0.84	0.99	0.48	0.92	0.49	0.54
d, Delay for Lane Group [s/veh]	136.55	110.43	57.03	139.64	111.34	111.76	138.58	83.43	55.81	92.52	18.11	20.44
Lane Group LOS	F	F	E	F	F	F	F	F	E	F	B	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.49	6.77	25.09	5.05	3.01	2.84	5.92	52.81	16.91	36.15	18.39	20.85
50th-Percentile Queue Length [ft/ln]	187.15	169.25	627.34	126.37	75.35	70.90	147.94	1320.36	422.76	903.85	459.86	521.22
95th-Percentile Queue Length [veh/ln]	11.97	11.04	33.31	8.74	5.43	5.10	9.91	64.73	23.65	46.02	25.43	28.34
95th-Percentile Queue Length [ft/ln]	299.33	275.92	832.73	218.56	135.63	127.62	247.67	1618.32	591.36	1150.38	635.70	708.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	136.55	110.43	57.03	139.64	111.36	111.76	138.58	83.43	55.81	92.52	18.51	20.44
Movement LOS	F	F	E	F	F	F	F	F	E	F	B	C
d_A, Approach Delay [s/veh]	74.56			128.53			83.23			44.94		
Approach LOS	E			F			F			D		
d_I, Intersection Delay [s/veh]	67.26											
Intersection LOS	E											
Intersection V/C	0.972											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	109.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.343

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	249	182	0	4	167	324	238	4	192	3	5	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	232	0	0	207	33	16	0	40	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	298	429	0	4	387	383	273	4	247	3	5	3
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	91	131	0	1	118	117	83	1	75	1	2	1
Total Analysis Volume [veh/h]	363	523	0	5	472	467	333	5	301	4	6	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	370	523	371	472	467	380	401	434	301
Degree of Utilization, x	0.98	1.34	0.01	1.21	1.10	0.88	0.01	0.69	0.05

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	11.27	24.66	0.04	19.28	16.26	8.65	0.04	5.19	0.15
95th-Percentile Queue Length [ft]	281.64	616.41	1.02	482.10	406.47	216.35	0.95	129.65	3.64
Approach Delay [s/veh]	146.46		122.84			40.22			15.54
Approach LOS	F		F			E			C
Intersection Delay [s/veh]	109.40								
Intersection LOS	F								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	347	320	0	0	330	26	15	0	264	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	220	0	0	250	13	49	0	70	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	417	566	0	0	606	41	65	0	355	1	0	1
Peak Hour Factor	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	135	183	0	0	196	13	21	0	115	0	0	0
Total Analysis Volume [veh/h]	539	731	0	0	783	53	84	0	459	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.68	0.01	0.00	0.00	0.01	0.00	11.08	0.00	1.17	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	18.37	0.00	0.00	9.12	0.00	0.00	5487.51	563.14	130.09	10000.0	10000.0	10000.0
Movement LOS	C	A	A	A	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh/ln]	5.36	0.00	0.00	0.00	0.00	0.00	12.15	17.82	17.82	1.00	1.00	1.00
95th-Percentile Queue Length [ft/ln]	134.01	0.00	0.00	0.00	0.00	0.00	303.64	445.44	445.44	25.00	25.00	25.00
d_A, Approach Delay [s/veh]	7.80			0.00			958.86			10000.00		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	207.68											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: Haun Rd (NS) at North Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	3.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.602

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	237	275	44	24	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	957	918	44	24	10
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	252	242	12	6	3
Total Analysis Volume [veh/h]	17	1007	966	46	25	11
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	109	109	0	11	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	24	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	107	107	107	107	5
g / C, Green / Cycle	0.89	0.89	0.89	0.89	0.04
(v / s)_i Volume / Saturation Flow Rate	0.03	0.54	0.27	0.28	0.02
s, saturation flow rate [veh/h]	555	1863	1863	1833	1711
c, Capacity [veh/h]	521	1661	1661	1635	72
d1, Uniform Delay [s]	1.78	1.54	0.97	0.98	56.33
k, delay calibration	0.50	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.12	1.65	0.47	0.49	5.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.61	0.30	0.31	0.50
d, Delay for Lane Group [s/veh]	1.89	3.19	1.44	1.47	61.69
Lane Group LOS	A	A	A	A	E
Critical Lane Group	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.07	2.33	0.72	0.72	1.18
50th-Percentile Queue Length [ft/ln]	1.63	58.31	17.90	18.10	29.41
95th-Percentile Queue Length [veh/ln]	0.12	4.20	1.29	1.30	2.12
95th-Percentile Queue Length [ft/ln]	2.93	104.95	32.22	32.59	52.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	1.89	3.19	1.46	1.47	61.69	61.69
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	3.17		1.46		61.69	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	3.35					
Intersection LOS	A					
Intersection V/C	0.602					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Haun Rd (NS) at Central Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	6.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.591

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	62	182	208	77	71	57
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	62	902	851	77	71	57
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	237	224	20	19	15
Total Analysis Volume [veh/h]	65	949	896	81	75	60
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	30	30	0	90	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	19	19	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	105	105	105	105	7	7
g / C, Green / Cycle	0.87	0.87	0.87	0.87	0.06	0.06
(v / s)_i Volume / Saturation Flow Rate	0.11	0.51	0.26	0.27	0.04	0.04
s, saturation flow rate [veh/h]	573	1863	1863	1810	1774	1583
c, Capacity [veh/h]	522	1625	1625	1579	108	97
d1, Uniform Delay [s]	2.57	2.00	1.33	1.34	55.28	55.03
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	1.54	0.48	0.51	7.63	6.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

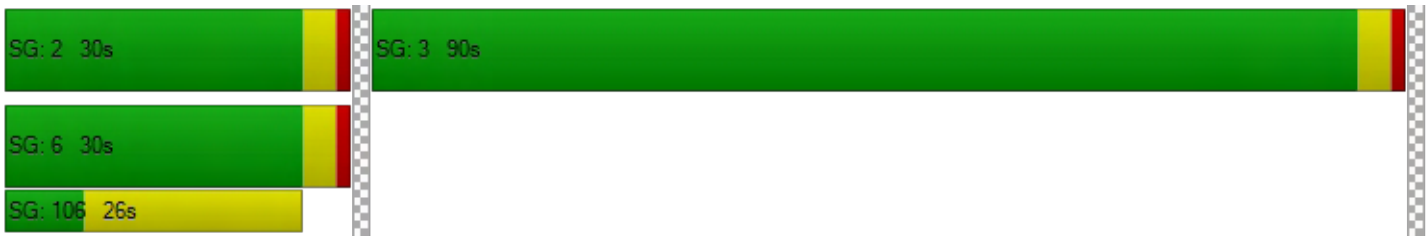
X, volume / capacity	0.12	0.58	0.30	0.31	0.69	0.62
d, Delay for Lane Group [s/veh]	3.06	3.54	1.80	1.85	62.91	61.35
Lane Group LOS	A	A	A	A	E	E
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.34	3.33	1.12	1.13	2.46	1.94
50th-Percentile Queue Length [ft/ln]	8.38	83.26	27.90	28.37	61.43	48.59
95th-Percentile Queue Length [veh/ln]	0.60	5.99	2.01	2.04	4.42	3.50
95th-Percentile Queue Length [ft/ln]	15.09	149.86	50.23	51.06	110.57	87.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.06	3.54	1.83	1.85	62.91	61.35
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	3.51		1.83		62.22	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	6.46					
Intersection LOS	A					
Intersection V/C	0.591					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Haun Rd (NS) at South Project Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.038

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.08	1.08	1.08	1.00	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	244	266	0	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	964	909	0	0	11
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	254	239	0	0	3
Total Analysis Volume [veh/h]	0	1015	957	0	0	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	16.98
Movement LOS		A	A	A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.12
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	2.99
d_A, Approach Delay [s/veh]	0.00		0.00		16.98	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.10					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	114.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.045

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	23	112	24	528	45	39	66	423	9	53	341	485
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	6	41	165	36	37	36	54	58	294	45	127
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	127	67	735	85	79	107	511	68	351	413	651
Peak Hour Factor	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	39	21	227	26	24	33	158	21	108	128	201
Total Analysis Volume [veh/h]	41	157	83	909	105	98	132	632	84	434	511	805
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	22	0	0	21	0	11	40	0	17	46	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	275	275	275	275	275	275	275	275	275	275	275
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	26	26	91	91	23	73	73	69	120	120
g / C, Green / Cycle	0.09	0.09	0.09	0.33	0.33	0.08	0.27	0.27	0.25	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.02	0.08	0.05	0.31	0.32	0.07	0.20	0.20	0.24	0.14	0.51
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1753	1774	1863	1787	1774	3547	1583
c, Capacity [veh/h]	165	173	147	585	578	145	496	476	448	1551	692
d1, Uniform Delay [s]	115.58	123.30	119.15	89.82	90.32	124.94	91.86	91.87	101.44	50.78	77.23
k, delay calibration	0.11	0.11	0.11	0.27	0.28	0.11	0.11	0.11	0.15	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	15.90	3.36	17.75	20.10	18.27	2.15	2.24	16.62	0.12	88.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

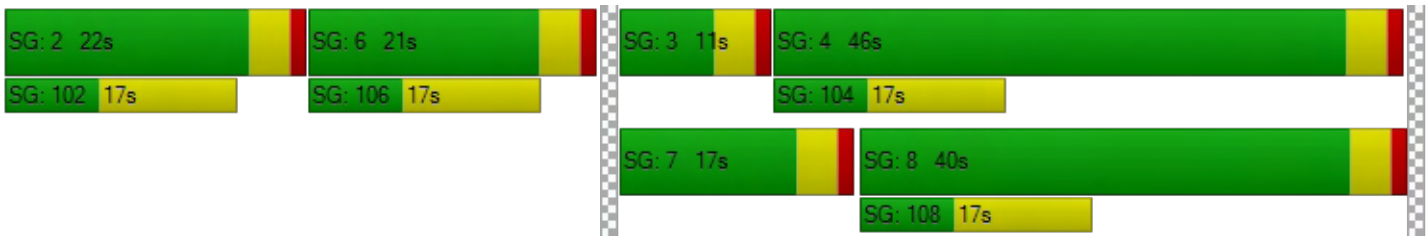
X, volume / capacity	0.25	0.91	0.56	0.95	0.96	0.91	0.74	0.74	0.97	0.33	1.16
d, Delay for Lane Group [s/veh]	116.36	139.20	122.52	107.56	110.42	143.22	94.00	94.11	118.06	50.90	165.89
Lane Group LOS	F	F	F	F	F	F	F	F	F	D	F
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.82	12.13	5.95	41.95	42.51	10.31	24.42	23.46	33.16	11.99	66.33
50th-Percentile Queue Length [ft/ln]	70.46	303.30	148.63	1048.70	1062.74	257.82	610.58	586.62	828.93	299.66	1658.15
95th-Percentile Queue Length [veh/ln]	5.07	17.84	9.94	52.57	53.20	15.58	32.53	31.41	42.60	17.66	89.16
95th-Percentile Queue Length [ft/ln]	126.83	446.11	248.60	1314.25	1330.06	389.49	813.20	785.22	1065.02	441.60	2229.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	116.36	139.20	122.52	108.67	110.42	110.42	143.22	94.05	94.11	118.06	50.90	165.89
Movement LOS	F	F	F	F	F	F	F	F	F	F	D	F
d_A, Approach Delay [s/veh]	130.94			108.99			101.71			120.45		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	114.01											
Intersection LOS	F											
Intersection V/C	1.045											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	24.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.722

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	333	0	439	0	1489	630	0	1666	1057
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.08	1.00	1.08	1.00	1.08	1.08	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	55	0	182	0	535	241	0	320	41
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	415	0	656	0	2143	921	0	2119	1183
Peak Hour Factor	1.0000	1.0000	1.0000	0.9340	1.0000	0.9340	1.0000	0.9340	0.9340	1.0000	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	111	0	176	0	574	0	0	567	0
Total Analysis Volume [veh/h]	0	0	0	444	0	702	0	2294	0	0	2269	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	50	0	0	0	90	0	0	90	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		174	174	174	174	174	174	174
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		46	46	46	120	120	120	120
g / C, Green / Cycle		0.27	0.27	0.27	0.69	0.69	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate		0.22	0.24	0.24	0.34	0.00	0.45	0.00
s, saturation flow rate [veh/h]		1774	1611	1583	6765	1583	5074	1583
c, Capacity [veh/h]		471	428	420	4659	1090	3494	1090
d1, Uniform Delay [s]		59.91	61.62	61.96	12.78	0.00	15.27	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.41	6.68	7.77	0.08	0.00	0.21	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.81	0.89	0.91	0.49	0.00	0.65	0.00
d, Delay for Lane Group [s/veh]		63.33	68.29	69.73	12.86	0.00	15.48	0.00
Lane Group LOS		E	E	E	B	A	B	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		16.35	17.15	17.36	10.58	0.00	16.71	0.00
50th-Percentile Queue Length [ft/ln]		408.78	428.76	433.89	264.58	0.00	417.79	0.00
95th-Percentile Queue Length [veh/ln]		22.98	23.94	24.19	15.92	0.00	23.42	0.00
95th-Percentile Queue Length [ft/ln]		574.57	598.56	604.69	397.96	0.00	585.40	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	64.02	0.00	69.08	0.00	12.86	0.00	0.00	15.48	0.00
Movement LOS				E		E		B	A		B	A
d_A, Approach Delay [s/veh]	0.00			67.12			12.86			15.48		
Approach LOS	A			E			B			B		
d_I, Intersection Delay [s/veh]	24.79											
Intersection LOS	C											
Intersection V/C	0.722											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	7.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.807

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	322	0	134	0	501	379	0	592	385
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.08	1.00	1.08	1.00	1.08	1.08	1.04	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	170	0	118	158	0	326	108
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	348	0	315	0	659	567	0	965	524
Peak Hour Factor	1.0000	1.0000	1.0000	0.9250	1.0000	0.9250	1.0000	0.9250	0.9250	0.9250	0.9250	0.9250
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	94	0	85	0	178	153	0	261	142
Total Analysis Volume [veh/h]	0	0	0	376	0	341	0	712	613	0	1043	566
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	26	0	0	0	74	0	0	74	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		32	32	32	32	32	32
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		8	8	17	17	17	17
g / C, Green / Cycle		0.23	0.23	0.52	0.52	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate		0.11	0.12	0.20	0.39	0.29	0.36
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		807	657	1846	824	1846	824
d1, Uniform Delay [s]		10.73	10.88	4.69	6.12	5.31	5.84
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.42	0.64	0.13	1.36	0.27	1.03
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

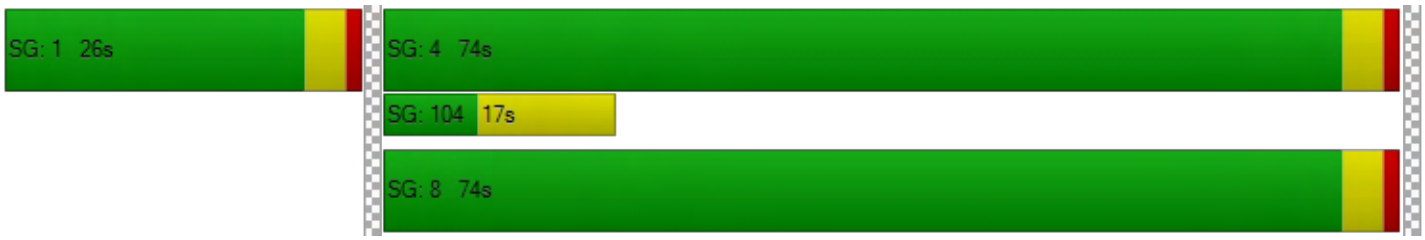
X, volume / capacity		0.47	0.52	0.39	0.74	0.57	0.69
d, Delay for Lane Group [s/veh]		11.15	11.52	4.82	7.48	5.59	6.86
Lane Group LOS		B	B	A	A	A	A
Critical Lane Group		No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]		0.90	0.84	0.68	1.76	1.14	1.51
50th-Percentile Queue Length [ft/ln]		22.40	20.98	16.95	43.91	28.46	37.73
95th-Percentile Queue Length [veh/ln]		1.61	1.51	1.22	3.16	2.05	2.72
95th-Percentile Queue Length [ft/ln]		40.33	37.77	30.51	79.05	51.22	67.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	11.15	0.00	11.52	0.00	4.82	7.48	0.00	5.59	6.86
Movement LOS				B		B		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			11.33			6.05			6.04		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	7.08											
Intersection LOS	A											
Intersection V/C	0.807											

Sequence

Ring 1	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	18.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	402	0	541	0	0	0	0	1456	345	0	2313	491
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.00	1.08	1.00	1.00	1.00	1.00	1.08	1.08	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	122	0	18	0	0	0	0	235	355	0	239	150
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	556	0	602	0	0	0	0	1807	728	0	2737	680
Peak Hour Factor	0.9350	1.0000	0.9350	1.0000	1.0000	1.0000	1.0000	0.9350	0.9350	1.0000	0.9350	0.9350
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	149	0	161	0	0	0	0	483	0	0	732	0
Total Analysis Volume [veh/h]	595	0	644	0	0	0	0	1933	0	0	2927	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	82	0	0	0	0	0	0	58	0	0	58	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	107	107	107		107	107	107	107
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	32	32	32		66	66	66	66
g / C, Green / Cycle	0.30	0.30	0.30		0.62	0.62	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.23	0.25	0.26		0.38	0.00	0.43	0.00
s, saturation flow rate [veh/h]	1774	1662	1583		5074	1583	6765	1583
c, Capacity [veh/h]	535	501	477		3164	987	4218	987
d1, Uniform Delay [s]	33.92	34.63	35.21		12.21	0.00	13.32	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.41	3.49	4.84		0.19	0.00	0.21	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.82	0.87		0.61	0.00	0.69	0.00
d, Delay for Lane Group [s/veh]	36.33	38.11	40.05		12.40	0.00	13.53	0.00
Lane Group LOS	D	D	D		B	A	B	A
Critical Lane Group	No	No	Yes		No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.93	10.26	10.58		8.65	0.00	10.70	0.00
50th-Percentile Queue Length [ft/ln]	248.37	256.55	264.56		216.15	0.00	267.62	0.00
95th-Percentile Queue Length [veh/ln]	15.10	15.52	15.92		13.47	0.00	16.07	0.00
95th-Percentile Queue Length [ft/ln]	377.60	387.89	397.93		336.71	0.00	401.76	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.87	0.00	39.35	0.00	0.00	0.00	0.00	12.40	0.00	0.00	13.53	0.00
Movement LOS	D		D					B	A		B	A
d_A, Approach Delay [s/veh]	38.16			0.00			12.40			13.53		
Approach LOS	D			A			B			B		
d_I, Intersection Delay [s/veh]	18.18											
Intersection LOS	B											
Intersection V/C	0.750											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	3.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.729

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	372	0	0	235	83	722	0	0	794	465
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.08	1.00	1.00	1.08	1.08	1.08	1.00	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	31	0	0	228	40	78	0	0	206	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	433	0	0	482	130	858	0	0	1064	502
Peak Hour Factor	0.9380	1.0000	0.9380	1.0000	1.0000	0.9380	0.9380	0.9380	1.0000	1.0000	0.9380	0.9380
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	115	0	0	128	35	229	0	0	284	134
Total Analysis Volume [veh/h]	0	0	462	0	0	514	139	915	0	0	1134	535
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	22	100	0	0	78	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			28	28	28	28
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			5	24	15	15
g / C, Green / Cycle			0.17	0.86	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate			0.08	0.26	0.32	0.34
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			297	3041	1943	867
d1, Uniform Delay [s]			10.56	0.38	4.22	4.34
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			1.15	0.06	0.28	0.72
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.47	0.30	0.58	0.62
d, Delay for Lane Group [s/veh]			11.71	0.44	4.50	5.06
Lane Group LOS			B	A	A	A
Critical Lane Group			Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]			0.64	0.02	0.60	0.69
50th-Percentile Queue Length [ft/ln]			15.91	0.58	15.10	17.13
95th-Percentile Queue Length [veh/ln]			1.15	0.04	1.09	1.23
95th-Percentile Queue Length [ft/ln]			28.64	1.05	27.18	30.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	11.71	0.44	0.00	0.00	4.50	5.06
Movement LOS							B	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			1.93			4.68		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.61											
Intersection LOS	A											
Intersection V/C	0.729											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	48.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.974

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	580	31	97	77	64	175	75	1252	658	137	2049	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	110	18	1	9	8	41	53	158	42	1	238	13
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	736	51	106	92	77	230	134	1510	753	149	2451	57
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	192	13	28	24	20	60	35	394	197	39	640	15
Total Analysis Volume [veh/h]	769	53	111	96	80	240	140	1578	787	156	2561	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	35	21	0	35	21	0	11	73	0	11	73	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	41	41	7	17	17	7	69	69	7	69	69
g / C, Green / Cycle	0.22	0.29	0.29	0.05	0.12	0.12	0.05	0.49	0.49	0.05	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.22	0.03	0.07	0.03	0.10	0.10	0.04	0.31	0.50	0.05	0.48	0.49
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1707	1583	3445	5074	1583	3445	3547	1841
c, Capacity [veh/h]	763	549	467	168	209	194	172	2496	779	172	1745	906
d1, Uniform Delay [s]	54.51	35.83	37.44	65.15	59.75	59.75	65.86	26.22	35.57	66.18	35.07	35.39
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.16	0.11	0.11	0.16
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	17.12	0.35	1.20	3.02	26.08	27.85	8.83	0.27	20.98	15.70	7.21	15.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.01	0.10	0.24	0.57	0.79	0.80	0.81	0.63	1.01	0.90	0.99	0.99
d, Delay for Lane Group [s/veh]	71.63	36.18	38.64	68.17	85.82	87.61	74.68	26.49	56.54	81.87	42.28	50.99
Lane Group LOS	F	D	D	E	F	F	E	C	F	F	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	15.24	1.39	3.09	1.75	7.26	6.84	2.70	12.93	30.39	3.16	29.89	33.69
50th-Percentile Queue Length [ft/ln]	380.89	34.82	77.16	43.87	181.43	170.89	67.42	323.27	759.72	78.97	747.17	842.14
95th-Percentile Queue Length [veh/ln]	21.74	2.51	5.56	3.16	11.68	11.12	4.85	18.83	39.76	5.69	38.85	43.20
95th-Percentile Queue Length [ft/ln]	543.42	62.68	138.89	78.96	291.88	278.09	121.35	470.70	994.00	142.14	971.31	1080.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	71.63	36.18	38.64	68.17	85.82	86.98	74.68	26.49	56.54	81.87	45.14	50.99
Movement LOS	F	D	D	E	F	F	E	C	F	F	D	D
d_A, Approach Delay [s/veh]	65.69			82.41			38.62			47.33		
Approach LOS	E			F			D			D		
d_I, Intersection Delay [s/veh]	48.83											
Intersection LOS	D											
Intersection V/C	0.974											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.532

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			Yes			Yes	

Volumes

Name												
Base Volume Input [veh/h]	0	509	39	92	302	0	0	0	0	119	0	178
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.08	1.08	1.08	1.08	1.00	1.08	1.08	1.08	1.08	1.00	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	99	10	0	33	0	0	0	0	43	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	649	52	99	359	0	0	0	0	172	0	192
Peak Hour Factor	1.0000	0.9190	0.9190	0.9190	0.9190	1.0000	1.0000	1.0000	1.0000	0.9190	1.0000	0.9190
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	177	14	27	98	0	0	0	0	47	0	52
Total Analysis Volume [veh/h]	0	706	57	108	391	0	0	0	0	187	0	209
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	54	0	20	74	0	0	0	0	26	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	33	33	33	33		33	33	33
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	4	18		7	7	7
g / C, Green / Cycle	0.30	0.30	0.13	0.55		0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.20	0.04	0.06	0.11		0.08	0.08	0.08
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1647	1583
c, Capacity [veh/h]	1054	471	239	1961		366	340	326
d1, Uniform Delay [s]	10.23	8.50	13.22	3.73		11.35	11.36	11.36
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.74	0.11	1.33	0.05		0.66	0.71	0.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.12	0.45	0.20		0.38	0.38	0.38
d, Delay for Lane Group [s/veh]	10.97	8.61	14.55	3.78		12.01	12.07	12.10
Lane Group LOS	B	A	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.69	0.23	0.67	0.28		0.74	0.69	0.67
50th-Percentile Queue Length [ft/ln]	42.19	5.67	16.79	7.12		18.45	17.29	16.71
95th-Percentile Queue Length [veh/ln]	3.04	0.41	1.21	0.51		1.33	1.24	1.20
95th-Percentile Queue Length [ft/ln]	75.94	10.20	30.22	12.82		33.20	31.12	30.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.97	8.61	14.55	3.78	0.00	0.00	0.00	0.00	12.03	0.00	12.09
Movement LOS		B	A	B	A					B		B
d_A, Approach Delay [s/veh]	10.80			6.11			0.00			12.06		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	9.69											
Intersection LOS	A											
Intersection V/C	0.532											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	34.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.848

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	310	152	88	40	180	369	249	624	277	24	640	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	2	2	0	5	83	25	65	19	8	108	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	350	166	97	43	199	482	294	739	318	34	799	50
Peak Hour Factor	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	95	45	26	12	54	131	80	200	86	9	216	14
Total Analysis Volume [veh/h]	379	180	105	47	216	522	319	801	345	37	866	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	40	0	19	42	0	15	30	0	11	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	42	42	5	34	34	11	27	27	4	20	20
g / C, Green / Cycle	0.14	0.45	0.45	0.05	0.36	0.36	0.12	0.29	0.29	0.05	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.11	0.05	0.07	0.03	0.12	0.33	0.09	0.23	0.22	0.01	0.17	0.17
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1807
c, Capacity [veh/h]	482	1587	708	93	671	570	417	1012	452	159	746	380
d1, Uniform Delay [s]	39.41	15.25	15.51	43.72	21.96	28.97	40.36	31.29	30.97	43.61	35.70	35.73
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.89	0.03	0.10	4.16	0.28	6.35	2.94	1.44	2.72	0.74	2.26	4.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

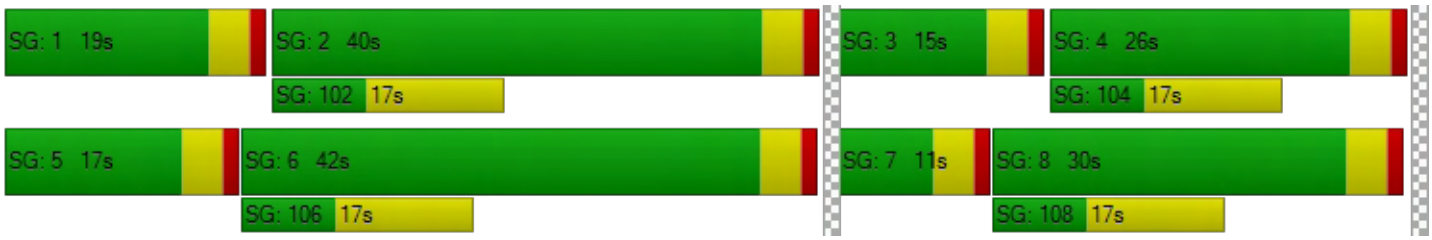
X, volume / capacity	0.79	0.11	0.15	0.50	0.32	0.92	0.76	0.79	0.76	0.23	0.82	0.82
d, Delay for Lane Group [s/veh]	42.30	15.29	15.60	47.88	22.24	35.31	43.30	32.73	33.69	44.35	37.96	40.13
Lane Group LOS	D	B	B	D	C	D	D	C	C	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.39	1.11	1.33	1.17	3.46	11.87	3.73	8.43	7.36	0.43	6.80	7.19
50th-Percentile Queue Length [ft/ln]	109.87	27.79	33.23	29.28	86.47	296.64	93.14	210.87	184.01	10.79	170.12	179.77
95th-Percentile Queue Length [veh/ln]	7.83	2.00	2.39	2.11	6.23	17.51	6.71	13.20	11.81	0.78	11.08	11.59
95th-Percentile Queue Length [ft/ln]	195.82	50.03	59.81	52.71	155.65	437.87	167.65	329.94	295.24	19.42	277.07	289.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.30	15.29	15.60	47.88	22.24	35.31	43.30	32.73	33.69	44.35	38.61	40.13
Movement LOS	D	B	B	D	C	D	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	30.75			32.47			35.26			38.91		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	34.82											
Intersection LOS	C											
Intersection V/C	0.848											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	47.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.862

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	214	176	128	79	240	408	236	1002	169	191	1415	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	86	66	48	10	25	25	10	124	30	34	133	20
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	317	256	186	95	284	466	265	1206	213	240	1661	74
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	69	50	26	76	125	71	324	57	64	446	20
Total Analysis Volume [veh/h]	340	275	200	102	305	501	285	1295	229	258	1784	79
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	21	21	15	21	21	24	48	0	16	40	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	165	165	165	165	165	165	165	165	165	165	165	165
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	33	56	12	25	61	32	86	86	19	73	73
g / C, Green / Cycle	0.12	0.20	0.34	0.07	0.15	0.37	0.19	0.52	0.52	0.12	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.13	0.06	0.09	0.32	0.08	0.41	0.43	0.07	0.35	0.05
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1768	3445	5074	1583
c, Capacity [veh/h]	397	704	536	124	542	585	663	967	918	400	2246	701
d1, Uniform Delay [s]	71.84	57.63	41.43	75.96	64.96	48.12	58.82	32.53	33.44	69.89	39.63	27.05
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.15	0.17	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.36	0.35	0.43	12.68	0.92	3.75	0.44	2.15	3.03	1.75	0.66	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

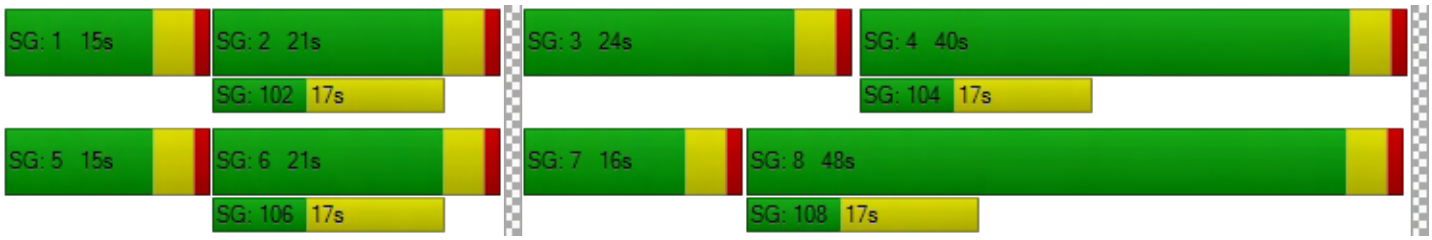
X, volume / capacity	0.86	0.39	0.37	0.82	0.56	0.86	0.43	0.79	0.82	0.65	0.79	0.11
d, Delay for Lane Group [s/veh]	77.20	57.99	41.86	88.64	65.88	51.87	59.26	34.68	36.47	71.65	40.30	27.12
Lane Group LOS	E	E	D	F	E	D	E	C	D	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.41	5.09	6.36	4.75	6.08	19.72	5.35	25.62	26.16	5.36	20.96	1.90
50th-Percentile Queue Length [ft/ln]	185.35	127.28	158.92	118.66	151.95	492.89	133.83	640.59	654.12	133.89	524.05	47.54
95th-Percentile Queue Length [veh/ln]	11.88	8.79	10.49	8.32	10.12	27.00	9.15	33.93	34.55	9.15	28.47	3.42
95th-Percentile Queue Length [ft/ln]	296.98	219.79	262.29	207.98	253.04	674.93	228.70	848.13	863.84	228.77	711.76	85.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	77.20	57.99	41.86	88.64	65.88	51.87	59.26	35.41	36.47	71.65	40.30	27.12
Movement LOS	E	E	D	F	E	D	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	62.05			60.71			39.30			43.62		
Approach LOS	E			E			D			D		
d_I, Intersection Delay [s/veh]	47.64											
Intersection LOS	D											
Intersection V/C	0.862											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME.vistro

Scenario 6 Existing Plus Ambient Growth Plus Project Plus Cumulative Evening Peak Hour

Report File: C:\...\PMEAPC WO.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Bradley Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.984	53.3	D
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.760	21.8	C
3	Bradley Rd (NS) at Craig Ave (EW)	All-way stop	HCM 2010	SB Thru	0.347	10.6	B
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	SB Left	0.470	11.1	B
5	Sherman Rd (NS) at MFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	9.1	A
6	Sherman Rd (NS) at SFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	9.2	A
7	MFR Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Left	0.009	13.2	B
8	Commercial Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Right	0.037	9.8	A
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	WB Left	1.175	163.6	F
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	SB Thru	1.944	261.7	F
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	EB Left	4.306	2,002.3	F
12	Haun Rd (NS) at North Project Access (EW)	Signalized	HCM 2010	EB Left	0.801	9.2	A
13	Haun Rd (NS) at Central Project Access (EW)	Signalized	HCM 2010	EB Left	0.739	9.7	A
14	Haun Rd (NS) at South Project Access (EW)	Two-way stop	HCM 2010	EB Right	0.166	20.6	C
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Right	1.081	115.4	F
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.958	38.3	D
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.766	7.3	A

18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.940	46.2	D
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.807	4.4	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	WB Left	1.103	62.5	E
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.527	9.4	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.843	38.0	D
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.946	39.8	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Bradley Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	53.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.984

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	85	113	160	225	157	104	120	1108	48	284	1227	282
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	49	48	29	158	48	23	16	454	50	37	621	173
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	141	170	202	401	218	135	146	1651	102	344	1946	478
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	44	52	103	56	35	38	424	26	88	500	123
Total Analysis Volume [veh/h]	145	175	208	412	224	139	150	1697	105	354	2000	491
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	32	21	21	26	15	0	12	39	0	14	41	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	17	31	22	29	29	8	35	35	10	37	37
g / C, Green / Cycle	0.10	0.17	0.31	0.22	0.29	0.29	0.08	0.35	0.35	0.10	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.08	0.09	0.13	0.23	0.10	0.10	0.08	0.34	0.34	0.10	0.39	0.31
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1628	1774	3547	1808	3445	5074	1583
c, Capacity [veh/h]	180	320	494	390	541	473	142	1235	630	345	1869	583
d1, Uniform Delay [s]	44.01	37.88	27.28	39.02	28.10	28.11	46.02	32.01	32.06	45.02	31.60	28.94
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.30	6.59	2.63	37.59	1.84	2.12	50.68	6.24	10.78	29.59	34.54	3.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.55	0.42	1.06	0.36	0.36	1.06	0.97	0.97	1.03	1.07	0.84
d, Delay for Lane Group [s/veh]	52.30	44.47	29.91	76.61	29.93	30.23	96.70	38.25	42.84	74.61	66.14	32.33
Lane Group LOS	D	D	C	F	C	C	F	D	D	F	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.90	4.48	4.25	13.48	3.91	3.47	5.50	14.72	15.87	5.66	20.42	10.97
50th-Percentile Queue Length [ft/ln]	97.56	111.93	106.35	336.93	97.71	86.76	137.58	368.05	396.80	141.38	510.42	274.33
95th-Percentile Queue Length [veh/ln]	7.02	7.95	7.64	20.08	7.04	6.25	9.52	21.01	22.41	9.65	29.13	16.41
95th-Percentile Queue Length [ft/ln]	175.61	198.69	190.92	501.98	175.88	156.17	238.01	525.36	560.15	241.20	728.24	410.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.30	44.47	29.91	76.61	29.97	30.23	96.70	39.62	42.84	74.61	66.14	32.33
Movement LOS	D	D	C	F	C	C	F	D	D	F	F	C
d_A, Approach Delay [s/veh]	40.88			54.81			44.18			61.36		
Approach LOS	D			D			D			E		
d_I, Intersection Delay [s/veh]	53.26											
Intersection LOS	D											
Intersection V/C	0.984											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.760

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	124	68	87	175	67	61	180	48	64	268	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	129	11	65	126	30	34	18	20	15	22	77
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	263	84	159	315	102	100	212	72	84	311	221
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	70	22	42	83	27	26	56	19	22	82	58
Total Analysis Volume [veh/h]	44	278	89	168	333	108	106	224	76	89	329	234
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	36	0	19	44	0	14	31	0	14	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	54	54	54	54	54	54	54	54	54	54
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	14	7	17	17	6	13	5	12	12
g / C, Green / Cycle	0.06	0.25	0.13	0.31	0.31	0.10	0.24	0.10	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.02	0.21	0.09	0.18	0.07	0.06	0.17	0.05	0.18	0.15
s, saturation flow rate [veh/h]	1774	1786	1774	1863	1583	1774	1783	1774	1863	1583
c, Capacity [veh/h]	112	444	223	580	493	183	423	169	428	364
d1, Uniform Delay [s]	24.58	19.40	23.04	15.76	13.89	23.36	19.10	23.51	19.68	19.01
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.25	3.98	5.07	0.90	0.22	2.90	2.21	2.51	2.95	1.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

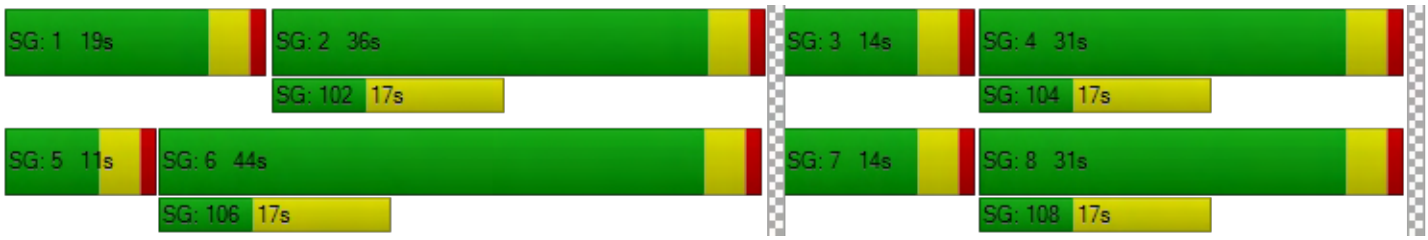
X, volume / capacity	0.39	0.83	0.75	0.57	0.22	0.58	0.71	0.53	0.77	0.64
d, Delay for Lane Group [s/veh]	26.82	23.38	28.11	16.66	14.11	26.25	21.31	26.02	22.63	20.92
Lane Group LOS	C	C	C	B	B	C	C	C	C	C
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.58	4.41	2.23	3.20	0.90	1.35	3.38	1.13	3.85	2.60
50th-Percentile Queue Length [ft/ln]	14.48	110.26	55.83	80.03	22.60	33.78	84.55	28.24	96.37	65.03
95th-Percentile Queue Length [veh/ln]	1.04	7.85	4.02	5.76	1.63	2.43	6.09	2.03	6.94	4.68
95th-Percentile Queue Length [ft/ln]	26.06	196.36	100.50	144.06	40.68	60.80	152.19	50.84	173.47	117.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.82	23.38	23.38	28.11	16.66	14.11	26.25	21.31	21.31	26.02	22.63	20.92
Movement LOS	C	C	C	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	23.75			19.37			22.60			22.48		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.84											
Intersection LOS	C											
Intersection V/C	0.760											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	All-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.347

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	39	55	2	3	80	98	115	1	48	0	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	116	0	0	131	24	26	0	22	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	175	2	3	217	130	150	1	74	0	1	4
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	45	1	1	56	34	39	0	19	0	0	1
Total Analysis Volume [veh/h]	58	180	2	3	224	134	155	1	76	0	1	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	692	656	754	679	675
Degree of Utilization, x	0.35	0.35	0.18	0.34	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.55	1.54	0.64	1.52	0.02
95th-Percentile Queue Length [ft]	38.77	38.60	16.09	37.93	0.56
Approach Delay [s/veh]	10.94	10.12		11.03	8.37
Approach LOS	B	B		B	A
Intersection Delay [s/veh]	10.60				
Intersection LOS	B				

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.470

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	2	87	2	0	0	2	0	0	2	96
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	22	10	125	39	0	0	0	0	17	0	110
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	25	12	219	41	0	0	2	0	17	2	214
Peak Hour Factor	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	8	4	72	14	0	0	1	0	6	1	71
Total Analysis Volume [veh/h]	0	33	16	289	54	0	0	3	0	22	3	282
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	723	730	656	601	743
Degree of Utilization, x	0.07	0.47	0.00	0.04	0.38

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.22	2.53	0.01	0.13	1.78
95th-Percentile Queue Length [ft]	5.44	63.19	0.34	3.25	44.52
Approach Delay [s/veh]	8.34	12.23	8.51	10.36	
Approach LOS	A	B	A	B	
Intersection Delay [s/veh]	11.12				
Intersection LOS	B				

Intersection Level Of Service Report
Intersection 5: Sherman Rd (NS) at MFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	5	0	0	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	0	10	46	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	0	10	48	0	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	0	3	13	0	2
Total Analysis Volume [veh/h]	33	0	11	51	0	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.30	0.00	9.09	8.48
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.48	0.48	0.43	0.43
d_A, Approach Delay [s/veh]	0.00		1.29		8.48	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.30					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Sherman Rd (NS) at SFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	5	0	0	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	0	31	15	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	0	31	17	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	0	8	4	0	0
Total Analysis Volume [veh/h]	33	0	33	18	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.33	0.00	9.18	8.46
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.06	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.50	1.50	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		4.74		8.82	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.88					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: MFR Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	90	0	0	97
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	30	129	6	50	123
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	30	226	6	50	228
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	8	59	2	13	60
Total Analysis Volume [veh/h]	4	32	238	6	53	240
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	13.22	9.76	0.00	0.00	7.84	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.12	0.06
95th-Percentile Queue Length [ft/ln]	3.85	3.85	0.00	0.00	2.95	1.47
d_A, Approach Delay [s/veh]	10.15		0.00		1.42	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.36					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Commercial Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.037

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	90	0	0	97
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.08	1.08	1.08	1.00	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	28	144	16	0	173
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	28	241	16	0	278
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	63	4	0	73
Total Analysis Volume [veh/h]	0	29	254	17	0	293
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

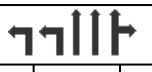
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.82	0.00	0.00	0.00	0.00
Movement LOS		A	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.12	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	2.91	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.82		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.48					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	163.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.175

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	344	91	813	337	126	109	132	1152	260	889	1249	218
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	201	13	445	39	17	26	20	494	164	455	670	30
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	573	111	1323	403	153	144	163	1738	445	1415	2019	265
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	147	28	339	103	39	37	42	445	114	362	517	68
Total Analysis Volume [veh/h]	586	114	1354	412	157	147	167	1779	455	1448	2067	271
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	25	28	28	18	21	0	12	43	0	51	82	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	396	396	396	396	396	396	396	396	396	396	396	396
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	70	90	214	50	70	70	22	120	120	120	218	218
g / C, Green / Cycle	0.18	0.23	0.54	0.13	0.18	0.18	0.05	0.30	0.30	0.30	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.17	0.06	0.48	0.12	0.08	0.09	0.05	0.35	0.29	0.42	0.43	0.46
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1583	3445	5074	1583	3445	3547	1758
c, Capacity [veh/h]	612	423	1514	436	327	278	187	1538	480	1044	1957	970
d1, Uniform Delay [s]	161.21	125.99	80.96	171.49	146.85	148.24	185.96	137.90	134.85	137.88	69.97	73.28
k, delay calibration	0.11	0.11	0.33	0.11	0.11	0.11	0.11	0.11	0.45	0.25	0.27	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.50	0.34	5.92	10.77	1.09	1.56	13.45	72.37	27.91	176.90	1.73	8.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

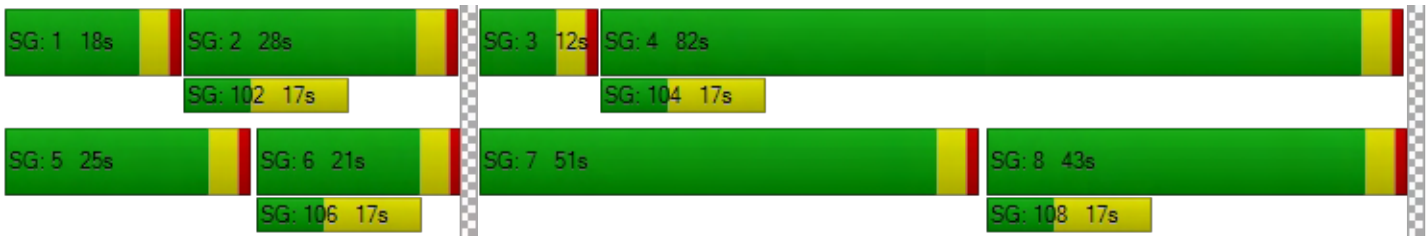
X, volume / capacity	0.96	0.27	0.89	0.95	0.48	0.53	0.89	1.16	0.95	1.39	0.78	0.83
d, Delay for Lane Group [s/veh]	170.72	126.33	86.88	182.26	147.94	149.79	199.41	210.27	162.76	314.78	71.70	81.45
Lane Group LOS	F	F	F	F	F	F	F	F	F	F	E	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	31.71	10.01	63.72	22.45	15.15	14.34	9.22	64.57	50.82	80.95	63.13	71.14
50th-Percentile Queue Length [ft/ln]	792.80	250.35	1592.97	561.32	378.71	358.60	230.57	1614.21	1270.52	2023.63	1578.30	1778.44
95th-Percentile Queue Length [veh/ln]	40.95	15.20	76.81	30.22	21.53	20.56	14.20	85.66	62.51	115.55	76.16	84.97
95th-Percentile Queue Length [ft/ln]	1023.69	380.09	1920.25	755.59	538.29	513.88	355.09	2141.62	1562.81	2888.77	1904.06	2124.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	170.72	126.33	86.88	182.26	147.94	149.79	199.41	210.27	162.76	314.78	74.22	81.45
Movement LOS	F	F	F	F	F	F	F	F	F	F	E	F
d_A, Approach Delay [s/veh]	112.99			168.07			200.51			166.74		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	163.57											
Intersection LOS	F											
Intersection V/C	1.175											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	261.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.944

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	241	255	2	4	258	293	245	2	118	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	129	442	0	0	447	30	50	0	125	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	389	717	2	4	726	346	315	2	252	0	0	4
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	191	1	1	193	92	84	1	67	0	0	1
Total Analysis Volume [veh/h]	414	763	2	4	772	368	335	2	268	0	0	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	414	765	377	772	430	387	409	444	322
Degree of Utilization, x	1.09	1.91	0.01	1.94	0.86	0.87	0.00	0.60	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	14.76	51.08	0.03	52.39	8.49	8.41	0.01	3.88	0.04
95th-Percentile Queue Length [ft]	369.06	1276.99	0.80	1309.73	212.23	210.35	0.37	97.10	0.94
Approach Delay [s/veh]	320.22		320.92			37.14			14.32
Approach LOS	F		F			E			B
Intersection Delay [s/veh]	261.66								
Intersection LOS	F								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	2,002.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.306

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	82	472	0	0	349	13	7	0	82	4	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	129	546	0	0	553	44	54	0	118	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	1056	0	0	930	58	62	0	207	4	0	0
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	271	0	0	239	15	16	0	53	1	0	0
Total Analysis Volume [veh/h]	224	1084	0	0	955	60	64	0	213	4	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.33	0.01	0.00	0.00	0.01	0.00	4.31	0.00	0.68	0.88	0.00	0.00
d_M, Delay for Movement [s/veh]	12.82	0.00	0.00	10.59	0.00	0.00	2002.26	208.80	37.74	1336.87	741.25	555.34
Movement LOS	B	A	A	B	A	A	F	F	E	F	F	F
95th-Percentile Queue Length [veh/ln]	1.43	0.00	0.00	0.00	0.00	0.00	8.85	4.65	4.65	1.19	1.19	1.19
95th-Percentile Queue Length [ft/ln]	35.69	0.00	0.00	0.00	0.00	0.00	221.33	116.16	116.16	29.81	29.81	29.81
d_A, Approach Delay [s/veh]	2.19			0.00			491.64			1336.87		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	55.45											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: Haun Rd (NS) at North Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	9.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.801

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	582	566	104	93	38
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	1180	1031	104	93	38
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	311	271	27	24	10
Total Analysis Volume [veh/h]	36	1242	1085	109	98	40
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	35	35	0	85	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	24	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	100	100	100	100	12
g / C, Green / Cycle	0.84	0.84	0.84	0.84	0.10
(v / s)_i Volume / Saturation Flow Rate	0.08	0.67	0.32	0.33	0.08
s, saturation flow rate [veh/h]	467	1863	1863	1805	1714
c, Capacity [veh/h]	402	1556	1556	1507	169
d1, Uniform Delay [s]	4.64	4.90	2.40	2.44	53.10
k, delay calibration	0.50	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.44	4.37	0.72	0.78	9.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

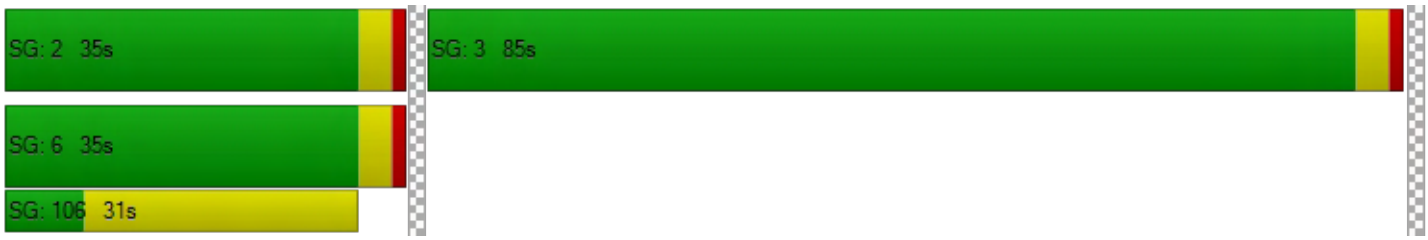
X, volume / capacity	0.09	0.80	0.38	0.40	0.82
d, Delay for Lane Group [s/veh]	5.08	9.28	3.12	3.22	62.45
Lane Group LOS	A	A	A	A	E
Critical Lane Group	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.28	11.59	2.60	2.65	4.52
50th-Percentile Queue Length [ft/ln]	7.09	289.82	64.95	66.24	113.00
95th-Percentile Queue Length [veh/ln]	0.51	17.18	4.68	4.77	8.01
95th-Percentile Queue Length [ft/ln]	12.76	429.42	116.91	119.24	200.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	5.08	9.28	3.17	3.22	62.45	62.45
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	9.16		3.17		62.45	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	9.24					
Intersection LOS	A					
Intersection V/C	0.801					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Haun Rd (NS) at Central Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.739

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	125	484	459	145	132	71
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	1082	924	145	132	71
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	285	243	38	35	19
Total Analysis Volume [veh/h]	132	1139	973	153	139	75
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	30	30	0	90	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	19	19	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	100	100	100	100	12	12
g / C, Green / Cycle	0.84	0.84	0.84	0.84	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.27	0.61	0.30	0.32	0.08	0.05
s, saturation flow rate [veh/h]	498	1863	1863	1778	1774	1583
c, Capacity [veh/h]	428	1555	1555	1484	175	156
d1, Uniform Delay [s]	5.60	4.21	2.35	2.40	52.96	51.24
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.87	3.09	0.66	0.74	7.97	2.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

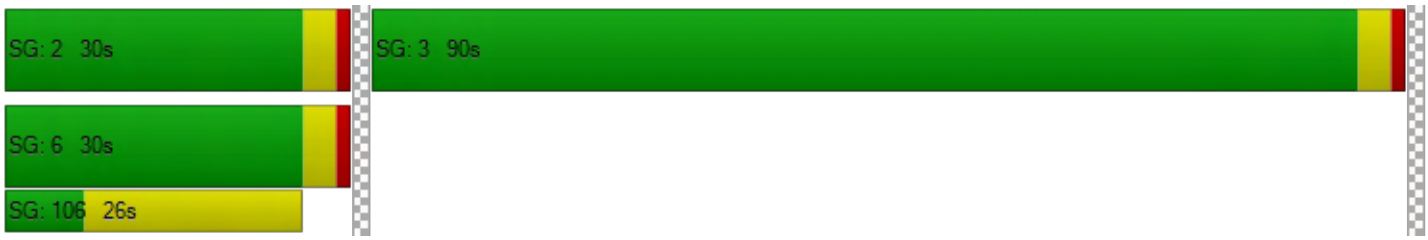
X, volume / capacity	0.31	0.73	0.36	0.38	0.80	0.48
d, Delay for Lane Group [s/veh]	7.47	7.30	3.00	3.14	60.94	53.53
Lane Group LOS	A	A	A	A	E	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.27	8.98	2.39	2.45	4.49	2.24
50th-Percentile Queue Length [ft/ln]	31.76	224.52	59.70	61.36	112.21	56.01
95th-Percentile Queue Length [veh/ln]	2.29	13.90	4.30	4.42	7.96	4.03
95th-Percentile Queue Length [ft/ln]	57.16	347.39	107.45	110.44	199.07	100.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.47	7.30	3.06	3.14	60.94	53.53
Movement LOS	A	A	A	A	E	D
d_A, Approach Delay [s/veh]	7.32		3.07		58.34	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	9.67					
Intersection LOS	A					
Intersection V/C	0.739					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Haun Rd (NS) at South Project Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	20.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.166

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.08	1.08	1.08	1.00	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	609	531	0	0	44
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1207	996	0	0	44
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	318	262	0	0	12
Total Analysis Volume [veh/h]	0	1271	1048	0	0	46
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.17
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	20.59
Movement LOS		A	A	A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.59
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	14.66
d_A, Approach Delay [s/veh]	0.00		0.00		20.59	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.40					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	115.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.081

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	51	32	319	19	43	39	435	20	55	441	467
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	52	32	261	261	6	75	78	139	8	39	134	321
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	87	296	606	27	121	120	609	30	98	610	825
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	22	76	155	7	31	31	156	8	25	156	212
Total Analysis Volume [veh/h]	90	89	304	622	28	124	123	625	31	101	626	846
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	23	0	14	45	0	11	42	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	279	279	279	279	279	279	279	279	279	279	279
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	56	56	56	65	65	21	123	123	18	120	120
g / C, Green / Cycle	0.20	0.20	0.20	0.23	0.23	0.08	0.44	0.44	0.06	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.19	0.22	0.22	0.07	0.18	0.18	0.06	0.18	0.53
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1713	1774	1863	1832	1774	3547	1583
c, Capacity [veh/h]	357	374	318	415	401	136	826	812	114	1528	682
d1, Uniform Delay [s]	93.65	93.36	110.02	104.84	105.19	127.54	52.47	52.48	129.29	54.78	79.26
k, delay calibration	0.11	0.11	0.11	0.11	0.12	0.11	0.11	0.11	0.11	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.32	14.96	11.12	13.19	18.73	0.31	0.32	19.27	0.18	120.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.24	0.96	0.94	0.95	0.90	0.40	0.40	0.89	0.41	1.24
d, Delay for Lane Group [s/veh]	94.01	93.68	124.98	115.96	118.38	146.28	52.78	52.80	148.56	54.95	199.58
Lane Group LOS	F	F	F	F	F	F	D	D	F	D	F
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.63	5.54	23.51	29.62	29.25	9.77	16.25	15.99	8.06	15.70	72.19
50th-Percentile Queue Length [ft/ln]	140.67	138.62	587.68	740.50	731.18	244.34	406.20	399.83	201.49	392.49	1804.66
95th-Percentile Queue Length [veh/ln]	9.52	9.41	31.46	38.55	38.12	14.90	22.86	22.55	12.72	22.20	100.21
95th-Percentile Queue Length [ft/ln]	237.93	235.16	786.46	963.64	952.91	372.52	571.46	563.80	317.89	554.94	2505.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	94.01	93.68	124.98	116.86	118.38	118.38	146.28	52.79	52.80	148.56	54.95	199.58
Movement LOS	F	F	F	F	F	F	F	D	D	F	D	F
d_A, Approach Delay [s/veh]	113.44			117.16			67.55			138.75		
Approach LOS	F			F			E			F		
d_I, Intersection Delay [s/veh]	115.36											
Intersection LOS	F											
Intersection V/C	1.081											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	38.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.958

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	419	0	582	0	1721	464	0	1844	466
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.08	1.00	1.08	1.00	1.08	1.08	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	209	0	459	0	735	243	0	696	35
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	662	0	1088	0	2594	744	0	2688	538
Peak Hour Factor	1.0000	1.0000	1.0000	0.9870	1.0000	0.9870	1.0000	0.9870	0.9870	1.0000	0.9870	0.9870
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	168	0	276	0	657	0	0	681	0
Total Analysis Volume [veh/h]	0	0	0	671	0	1102	0	2628	0	0	2723	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	57	0	0	0	83	0	0	83	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		65	65	65	87	87	87	87
g / C, Green / Cycle		0.41	0.41	0.41	0.54	0.54	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate		0.33	0.37	0.37	0.39	0.00	0.54	0.00
s, saturation flow rate [veh/h]		1774	1607	1583	6765	1583	5074	1583
c, Capacity [veh/h]		722	654	645	3674	860	2755	860
d1, Uniform Delay [s]		42.30	44.63	45.01	27.41	0.00	36.18	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.35	4.99	5.76	0.27	0.00	5.72	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

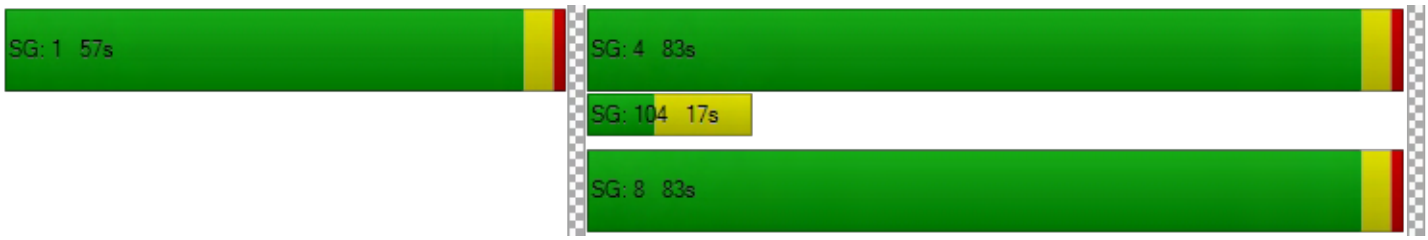
X, volume / capacity		0.82	0.90	0.92	0.72	0.00	0.99	0.00
d, Delay for Lane Group [s/veh]		44.66	49.61	50.77	27.68	0.00	41.90	0.00
Lane Group LOS		D	D	D	C	A	D	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		21.32	22.90	23.21	18.84	0.00	35.69	0.00
50th-Percentile Queue Length [ft/ln]		533.04	572.48	580.37	471.07	0.00	892.34	0.00
95th-Percentile Queue Length [veh/ln]		28.89	30.75	31.12	25.96	0.00	45.49	0.00
95th-Percentile Queue Length [ft/ln]		722.36	768.68	777.91	649.05	0.00	1137.30	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	45.25	0.00	50.23	0.00	27.68	0.00	0.00	41.90	0.00
Movement LOS				D		D		C	A		D	A
d_A, Approach Delay [s/veh]	0.00			48.35			27.68			41.90		
Approach LOS	A			D			C			D		
d_I, Intersection Delay [s/veh]	38.26											
Intersection LOS	D											
Intersection V/C	0.958											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	7.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.766

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	392	0	155	0	497	238	0	680	413
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.08	1.00	1.08	1.00	1.08	1.08	1.04	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	80	0	426	328	0	499	88
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	423	0	247	0	963	585	0	1233	534
Peak Hour Factor	1.0000	1.0000	1.0000	0.9470	1.0000	0.9470	1.0000	0.9470	0.9470	0.9470	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	112	0	65	0	254	154	0	326	141
Total Analysis Volume [veh/h]	0	0	0	447	0	261	0	1017	618	0	1302	564
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	27	0	0	0	73	0	0	73	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		37	37	37	37	37	37
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		8	8	21	21	21	21
g / C, Green / Cycle		0.23	0.23	0.56	0.56	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate		0.13	0.09	0.29	0.39	0.37	0.36
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		778	633	1990	888	1990	888
d1, Uniform Delay [s]		12.92	12.40	5.07	5.93	5.71	5.62
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.67	0.43	0.20	0.99	0.37	0.76
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.57	0.41	0.51	0.70	0.65	0.63
d, Delay for Lane Group [s/veh]		13.60	12.83	5.27	6.92	6.08	6.37
Lane Group LOS		B	B	A	A	A	A
Critical Lane Group		Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]		1.40	0.78	1.25	1.95	1.83	1.66
50th-Percentile Queue Length [ft/ln]		34.99	19.53	31.37	48.73	45.78	41.49
95th-Percentile Queue Length [veh/ln]		2.52	1.41	2.26	3.51	3.30	2.99
95th-Percentile Queue Length [ft/ln]		62.97	35.15	56.47	87.71	82.40	74.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	13.60	0.00	12.83	0.00	5.27	6.92	0.00	6.08	6.37
Movement LOS				B		B		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			13.31			5.90			6.17		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	7.26											
Intersection LOS	A											
Intersection V/C	0.766											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	46.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.940

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			No			No			No	

Volumes

Name												
Base Volume Input [veh/h]	517	0	746	0	0	0	0	1885	382	0	1690	480
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.00	1.08	1.00	1.00	1.00	1.00	1.08	1.08	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	326	0	52	0	0	0	0	605	339	0	405	133
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	884	0	858	0	0	0	0	2641	752	0	2230	651
Peak Hour Factor	0.9810	1.0000	0.9810	1.0000	1.0000	1.0000	1.0000	0.9810	0.9810	1.0000	0.9810	0.9810
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	225	0	219	0	0	0	0	673	0	0	568	0
Total Analysis Volume [veh/h]	901	0	875	0	0	0	0	2692	0	0	2273	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	64	0	0	0	0	0	0	76	0	0	76	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	213	213	213		213	213	213	213
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	85	85	85		120	120	120	120
g / C, Green / Cycle	0.40	0.40	0.40		0.56	0.56	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.33	0.35	0.37		0.53	0.00	0.34	0.00
s, saturation flow rate [veh/h]	1774	1677	1583		5074	1583	6765	1583
c, Capacity [veh/h]	707	669	631		2860	893	3814	893
d1, Uniform Delay [s]	57.74	59.46	61.45		43.15	0.00	30.51	0.00
k, delay calibration	0.17	0.20	0.23		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.26	7.23	13.26		2.02	0.00	0.15	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

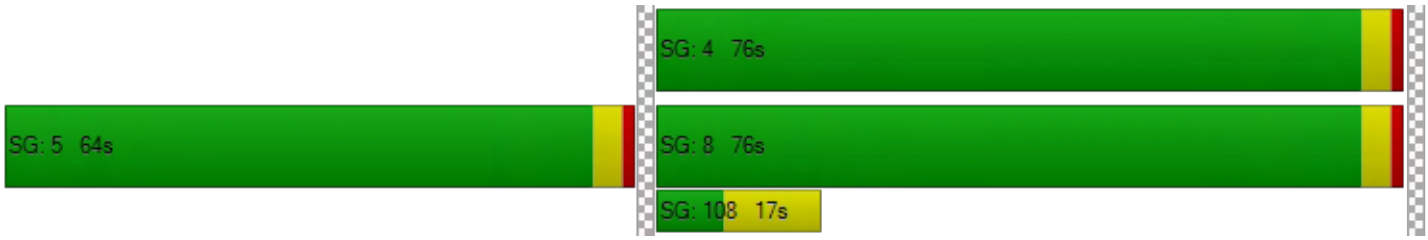
X, volume / capacity	0.84	0.89	0.94		0.94	0.00	0.60	0.00
d, Delay for Lane Group [s/veh]	62.00	66.69	74.71		45.17	0.00	30.66	0.00
Lane Group LOS	E	E	E		D	A	C	A
Critical Lane Group	No	No	Yes		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	29.86	31.23	33.21		44.30	0.00	19.63	0.00
50th-Percentile Queue Length [ft/ln]	746.44	780.65	830.22		1107.48	0.00	490.84	0.00
95th-Percentile Queue Length [veh/ln]	38.82	40.39	42.66		55.21	0.00	26.90	0.00
95th-Percentile Queue Length [ft/ln]	970.47	1009.76	1066.50		1380.37	0.00	672.51	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.61	0.00	72.11	0.00	0.00	0.00	0.00	45.17	0.00	0.00	30.66	0.00
Movement LOS	E		E					D	A		C	A
d_A, Approach Delay [s/veh]	67.80			0.00			45.17			30.66		
Approach LOS	E			A			D			C		
d_I, Intersection Delay [s/veh]	46.24											
Intersection LOS	D											
Intersection V/C	0.940											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	4.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.807

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	490	0	0	345	70	831	0	0	759	395
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.08	1.00	1.00	1.08	1.08	1.08	1.00	1.00	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	151	0	0	267	194	232	0	0	320	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	680	0	0	640	270	1129	0	0	1140	427
Peak Hour Factor	0.9650	1.0000	0.9650	1.0000	1.0000	0.9650	0.9650	0.9650	1.0000	1.0000	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	176	0	0	166	70	292	0	0	295	111
Total Analysis Volume [veh/h]	0	0	705	0	0	663	280	1170	0	0	1181	442
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	62	100	0	0	38	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			31	31	31	31
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			7	27	16	16
g / C, Green / Cycle			0.21	0.87	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate			0.16	0.33	0.33	0.28
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			381	3084	1860	831
d1, Uniform Delay [s]			11.23	0.39	5.20	4.81
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			2.77	0.08	0.36	0.53
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.74	0.38	0.63	0.53
d, Delay for Lane Group [s/veh]			14.01	0.47	5.56	5.34
Lane Group LOS			B	A	A	A
Critical Lane Group			Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]			1.56	0.03	1.12	0.83
50th-Percentile Queue Length [ft/ln]			38.89	0.83	27.99	20.83
95th-Percentile Queue Length [veh/ln]			2.80	0.06	2.02	1.50
95th-Percentile Queue Length [ft/ln]			70.00	1.49	50.39	37.49

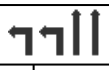
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	14.01	0.47	0.00	0.00	5.56	5.34
Movement LOS							B	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			3.08			5.50		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.36											
Intersection LOS	A											
Intersection V/C	0.807											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	62.5
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.103

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	693	108	189	28	78	147	145	1761	633	174	1352	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	105	19	1	25	25	109	111	395	151	1	324	24
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	853	136	205	55	109	268	268	2297	835	189	1784	53
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	221	35	53	14	28	69	69	594	216	49	462	14
Total Analysis Volume [veh/h]	883	141	212	57	113	277	277	2378	864	196	1847	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	36	23	0	34	21	0	34	72	0	11	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	32	43	43	6	17	17	14	68	68	7	61	61
g / C, Green / Cycle	0.23	0.31	0.31	0.04	0.12	0.12	0.10	0.49	0.49	0.05	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.26	0.08	0.13	0.02	0.12	0.12	0.08	0.47	0.55	0.06	0.35	0.35
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1727	1583	3445	5074	1583	3445	3547	1835
c, Capacity [veh/h]	787	571	486	154	212	194	338	2458	767	172	1547	801
d1, Uniform Delay [s]	54.00	36.40	38.84	64.98	61.07	61.07	61.92	35.02	36.09	66.50	34.38	34.44
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.21	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	58.83	1.03	2.84	1.49	52.17	54.94	4.92	3.74	64.54	77.00	1.05	2.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

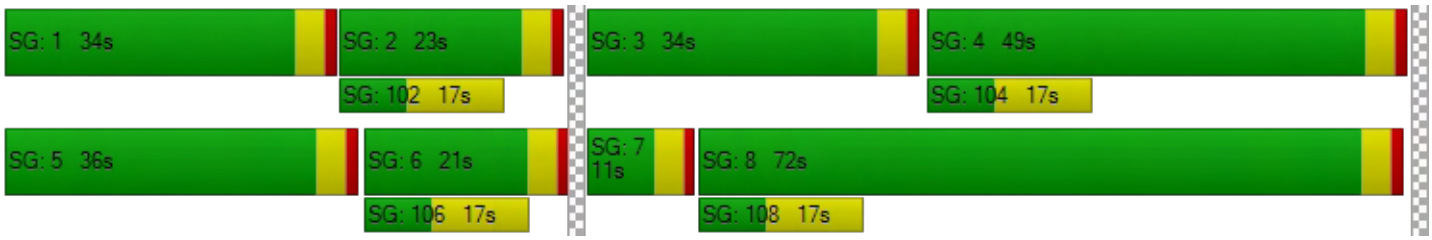
X, volume / capacity	1.12	0.25	0.44	0.37	0.96	0.96	0.82	0.97	1.13	1.14	0.81	0.81
d, Delay for Lane Group [s/veh]	112.83	37.43	41.68	66.47	113.23	116.01	66.84	38.76	100.63	143.50	35.44	36.48
Lane Group LOS	F	D	D	E	F	F	E	D	F	F	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	20.27	3.84	6.28	1.02	10.28	9.58	5.08	26.42	39.25	4.93	18.63	19.58
50th-Percentile Queue Length [ft/ln]	506.84	96.00	157.06	25.62	256.98	239.41	126.98	660.59	981.26	123.26	465.65	489.51
95th-Percentile Queue Length [veh/ln]	29.47	6.91	10.39	1.84	15.54	14.65	8.78	34.85	54.19	8.87	25.70	26.84
95th-Percentile Queue Length [ft/ln]	736.78	172.79	259.83	46.12	388.43	366.28	219.38	871.34	1354.82	221.77	642.60	670.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	112.83	37.43	41.68	66.47	113.23	115.14	66.84	38.76	100.63	143.50	35.77	36.48
Movement LOS	F	D	D	E	F	F	E	D	F	F	D	D
d_A, Approach Delay [s/veh]	92.02			108.43			56.16			45.85		
Approach LOS	F			F			E			D		
d_I, Intersection Delay [s/veh]	62.47											
Intersection LOS	E											
Intersection V/C	1.103											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.527

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	410	88	191	431	0	0	0	0	71	0	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.08	1.08	1.08	1.08	1.00	1.08	1.08	1.08	1.08	1.00	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	63	80	0	109	0	0	0	0	46	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	506	175	206	574	0	0	0	0	123	0	135
Peak Hour Factor	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270	0.9270	0.9270	0.9270	1.0000	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	136	47	56	155	0	0	0	0	33	0	36
Total Analysis Volume [veh/h]	0	546	189	222	619	0	0	0	0	133	0	146
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	62	0	17	79	0	0	0	0	21	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	33	33	33	33		33	33	33
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	6	18		6	6	6
g / C, Green / Cycle	0.25	0.25	0.19	0.56		0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.15	0.12	0.13	0.17		0.06	0.06	0.06
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1651	1583
c, Capacity [veh/h]	900	402	330	1990		349	325	311
d1, Uniform Delay [s]	10.87	10.44	12.50	3.85		11.28	11.29	11.29
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.66	0.86	2.38	0.09		0.43	0.47	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.47	0.67	0.31		0.28	0.28	0.29
d, Delay for Lane Group [s/veh]	11.53	11.30	14.88	3.94		11.72	11.76	11.79
Lane Group LOS	B	B	B	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.36	0.94	1.38	0.45		0.50	0.48	0.46
50th-Percentile Queue Length [ft/ln]	33.92	23.57	34.41	11.27		12.61	11.97	11.60
95th-Percentile Queue Length [veh/ln]	2.44	1.70	2.48	0.81		0.91	0.86	0.84
95th-Percentile Queue Length [ft/ln]	61.06	42.43	61.93	20.28		22.70	21.54	20.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	11.53	11.30	14.88	3.94	0.00	0.00	0.00	0.00	11.73	0.00	11.78
Movement LOS		B	B	B	A					B		B
d_A, Approach Delay [s/veh]	11.47			6.83			0.00			11.76		
Approach LOS	B			A			A			B		
d_I, Intersection Delay [s/veh]	9.41											
Intersection LOS	A											
Intersection V/C	0.527											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	38.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.843

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	392	287	189	59	167	279	271	777	283	60	508	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	41	6	8	0	3	102	143	200	40	5	177	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	464	316	212	64	183	403	436	1039	346	70	726	58
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	119	81	54	16	47	103	112	266	89	18	186	15
Total Analysis Volume [veh/h]	475	324	217	66	188	413	447	1065	355	72	744	59
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	40	0	14	35	0	19	35	0	11	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	44	44	6	31	31	17	38	38	6	27	27
g / C, Green / Cycle	0.17	0.40	0.40	0.06	0.29	0.29	0.16	0.35	0.35	0.06	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.14	0.09	0.14	0.04	0.10	0.26	0.13	0.30	0.22	0.02	0.15	0.15
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1794
c, Capacity [veh/h]	570	1406	628	98	533	453	540	1228	548	195	873	442
d1, Uniform Delay [s]	44.44	22.06	23.22	50.99	31.17	37.91	44.94	33.59	30.29	49.99	36.77	36.81
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.28	0.08	0.33	7.77	0.40	7.44	3.32	2.00	1.29	1.16	0.69	1.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

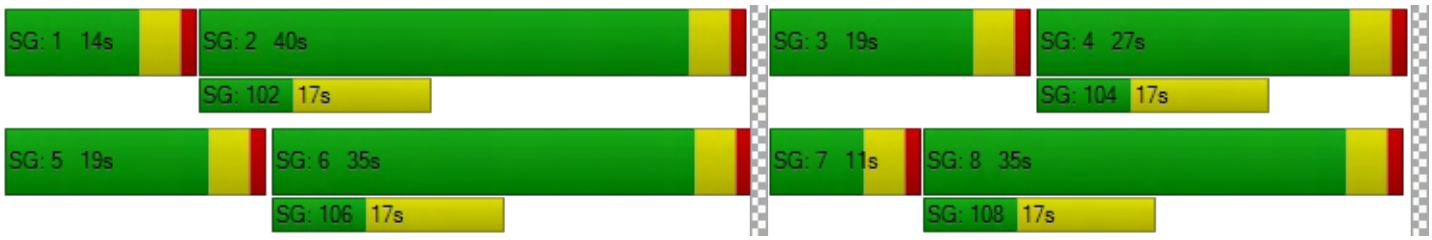
X, volume / capacity	0.83	0.23	0.35	0.67	0.35	0.91	0.83	0.87	0.65	0.37	0.61	0.61
d, Delay for Lane Group [s/veh]	47.72	22.14	23.55	58.76	31.56	45.34	48.26	35.59	31.59	51.15	37.46	38.19
Lane Group LOS	D	C	C	E	C	D	D	D	C	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.48	2.79	3.96	1.99	4.01	11.49	6.12	13.33	8.00	0.98	6.38	6.58
50th-Percentile Queue Length [ft/ln]	162.02	69.67	99.12	49.74	100.26	287.37	152.91	333.17	200.12	24.59	159.53	164.62
95th-Percentile Queue Length [veh/ln]	10.66	5.02	7.14	3.58	7.22	17.05	10.17	19.31	12.65	1.77	10.52	10.79
95th-Percentile Queue Length [ft/ln]	266.39	125.41	178.42	89.54	180.46	426.37	254.31	482.84	316.13	44.26	263.11	269.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.72	22.14	23.55	58.76	31.56	45.34	48.26	35.59	31.59	51.15	37.67	38.19
Movement LOS	D	C	C	E	C	D	D	D	C	D	D	D
d_A, Approach Delay [s/veh]	34.40			42.79			37.86			38.81		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	38.00											
Intersection LOS	D											
Intersection V/C	0.843											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	39.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.946

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	105	177	226	200	219	114	121	958	60	312	1197	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	124	79	71	26	119	38	50	184	174	89	174	18
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	237	270	315	242	356	161	181	1219	239	426	1467	196
Peak Hour Factor	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610	0.9610
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	70	82	63	93	42	47	317	62	111	382	51
Total Analysis Volume [veh/h]	247	281	328	252	370	168	188	1268	249	443	1527	204
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	21	21	17	24	24	32	47	0	15	30	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	131	131	131	131	131	131	131	131	131	131	131	131
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	14	38	21	23	40	14	60	60	21	67	67
g / C, Green / Cycle	0.09	0.10	0.29	0.16	0.17	0.31	0.11	0.46	0.46	0.16	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.07	0.08	0.21	0.14	0.10	0.11	0.05	0.41	0.43	0.13	0.30	0.13
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1760	3445	5074	1583
c, Capacity [veh/h]	314	370	463	283	612	488	362	851	804	544	2585	807
d1, Uniform Delay [s]	58.50	57.28	41.50	54.14	50.25	35.20	55.67	33.01	33.78	53.50	22.63	18.16
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.37	3.23	2.01	9.43	0.97	0.42	1.15	3.89	5.60	3.03	0.22	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

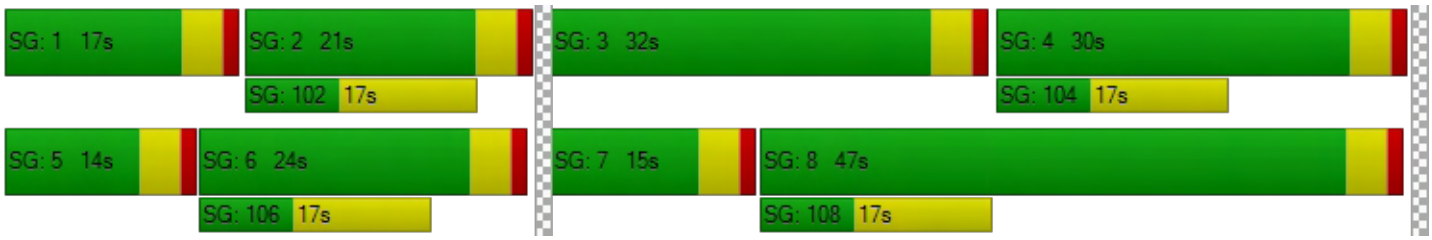
X, volume / capacity	0.79	0.76	0.71	0.89	0.60	0.34	0.52	0.90	0.93	0.81	0.59	0.25
d, Delay for Lane Group [s/veh]	62.87	60.52	43.51	63.57	51.22	35.62	56.82	36.90	39.37	56.54	22.85	18.32
Lane Group LOS	E	E	D	E	D	D	E	D	D	E	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.22	4.71	9.74	8.90	5.72	4.26	3.02	23.05	23.33	7.30	10.98	3.55
50th-Percentile Queue Length [ft/ln]	105.43	117.78	243.51	222.49	143.01	106.43	75.41	576.21	583.27	182.60	274.57	88.80
95th-Percentile Queue Length [veh/ln]	7.59	8.27	14.86	13.79	9.64	7.64	5.43	30.92	31.25	11.74	16.42	6.39
95th-Percentile Queue Length [ft/ln]	189.63	206.78	371.47	344.80	241.07	191.02	135.73	773.05	781.30	293.41	410.44	159.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.87	60.52	43.51	63.57	51.22	35.62	56.82	37.88	39.37	56.54	22.85	18.32
Movement LOS	E	E	D	E	D	D	E	D	D	E	C	B
d_A, Approach Delay [s/veh]	54.68			51.84			40.18			29.29		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	39.81											
Intersection LOS	D											
Intersection V/C	0.946											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PLUS CUMULATIVE (WITHOUT HOLLAND ROAD OVERPASS) – WITH IMPROVEMENTS

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME.vistro

Scenario 7 Existing Plus Ambient Growth Plus Project Plus Cumulative Morning Peak Hour - With Improvements

Report File: C:\...\AMEAPCI WO.pdf

1/15/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	NB Left	0.921	48.3	D
3	Bradley Rd (NS) at Craig Ave (EW)	Signalized	HCM 2010	EB Left	0.903	34.6	C
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	WB Right	0.908	27.3	D
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Left	1.046	45.8	D
10	Haun Rd (NS) at Holland Road (EW)	Signalized	HCM 2010	SB Left	0.890	26.0	C
11	Haun Road (NS) at Garbani Road (EW)	Signalized	HCM 2010	WB Left	0.912	42.6	D
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.941	50.5	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	48.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.921

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	48	318	164	66	426	204	106	228	182	174	174	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	58	9	29	73	18	13	11	11	6	4	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	401	186	100	533	238	127	257	208	194	192	135
Peak Hour Factor	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630	0.8630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	116	54	29	154	69	37	74	60	56	56	39
Total Analysis Volume [veh/h]	74	465	216	116	618	276	147	298	241	225	222	156
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	29	0	19	37	0	13	35	0	17	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	R
C, Cycle Length [s]	136	136	136	136	136	136	136	136	136	136	136
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	45	45	11	48	48	13	45	20	51	51
g / C, Green / Cycle	0.05	0.33	0.33	0.08	0.35	0.35	0.10	0.33	0.14	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.04	0.25	0.14	0.07	0.33	0.17	0.08	0.31	0.13	0.12	0.10
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1583	1774	1727	1774	1863	1583
c, Capacity [veh/h]	96	611	519	142	660	561	175	571	255	700	595
d1, Uniform Delay [s]	63.68	41.01	35.64	61.70	42.50	34.40	60.39	44.39	57.27	30.17	29.48
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.47	1.99	0.53	10.64	6.92	0.67	10.24	8.55	9.78	0.26	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

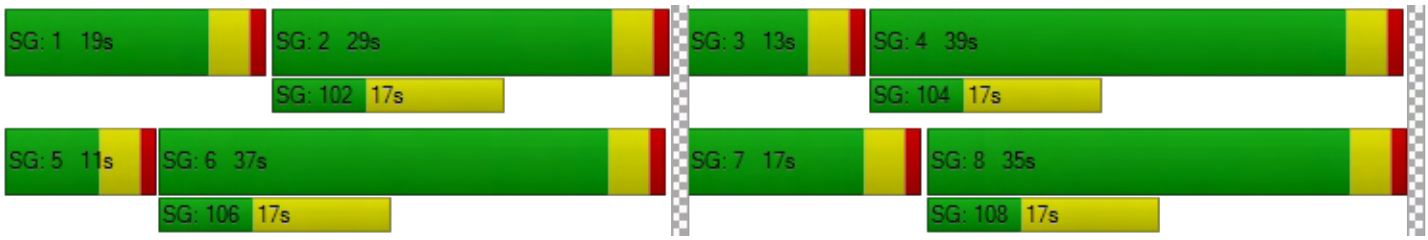
X, volume / capacity	0.77	0.76	0.42	0.81	0.94	0.49	0.84	0.94	0.88	0.32	0.26
d, Delay for Lane Group [s/veh]	76.15	43.00	36.17	72.34	49.43	35.07	70.64	52.94	67.06	30.43	29.71
Lane Group LOS	E	D	D	E	D	D	E	D	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.87	14.29	5.71	4.38	21.17	7.30	5.50	18.93	8.29	5.27	3.62
50th-Percentile Queue Length [ft/ln]	71.76	357.32	142.74	109.46	529.32	182.45	137.44	473.14	207.32	131.82	90.61
95th-Percentile Queue Length [veh/ln]	5.17	20.49	9.63	7.81	28.72	11.73	9.34	26.06	13.02	9.04	6.52
95th-Percentile Queue Length [ft/ln]	129.17	512.33	240.70	195.26	717.98	293.21	233.57	651.51	325.39	225.97	163.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	76.15	43.00	36.17	72.34	49.43	35.07	70.64	52.94	52.94	67.06	30.43	29.71
Movement LOS	E	D	D	E	D	D	E	D	D	E	C	C
d_A, Approach Delay [s/veh]	44.30			48.13			56.73			43.91		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	48.28											
Intersection LOS	D											
Intersection V/C	0.921											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	34.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.903

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	105	296	0	2	252	175	103	2	51	1	6	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	67	0	0	55	17	11	0	8	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	387	0	2	327	206	122	2	63	1	6	25
Peak Hour Factor	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470	0.7470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	130	0	1	109	69	41	1	21	0	2	8
Total Analysis Volume [veh/h]	163	518	0	3	438	276	163	3	84	1	8	33
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	38	0	0	26	0	0	21	0	0	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	C	C
C, Cycle Length [s]	93	93	93	93	93
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	25	25	19	19
g / C, Green / Cycle	0.40	0.27	0.27	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.37	0.24	0.17	0.18	0.03
s, saturation flow rate [veh/h]	1841	1862	1583	1398	1669
c, Capacity [veh/h]	732	502	427	348	379
d1, Uniform Delay [s]	26.73	32.41	29.95	36.04	30.21
k, delay calibration	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.00	5.09	1.65	2.78	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.88	0.65	0.72	0.11
d, Delay for Lane Group [s/veh]	32.72	37.50	31.60	38.81	30.33
Lane Group LOS	C	D	C	D	C
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	14.85	9.89	5.51	5.64	0.77
50th-Percentile Queue Length [ft/ln]	371.20	247.33	137.67	140.90	19.30
95th-Percentile Queue Length [veh/ln]	21.17	15.05	9.36	9.53	1.39
95th-Percentile Queue Length [ft/ln]	529.19	376.29	233.89	238.24	34.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.72	32.72	32.72	37.50	37.50	31.60	38.81	38.81	38.81	30.33	30.33	30.33
Movement LOS	C	C	C	D	D	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	32.72			35.23			38.81			30.33		
Approach LOS	C			D			D			C		
d_I, Intersection Delay [s/veh]	34.63											
Intersection LOS	C											
Intersection V/C	0.903											

Sequence

Ring 1	2	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	27.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.908

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	0	278	1	1	2	2	0	0	6	364
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	35	15	56	13	0	0	0	0	5	0	41
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	38	15	356	14	1	2	2	0	5	6	434
Peak Hour Factor	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	5	120	5	0	1	1	0	2	2	147
Total Analysis Volume [veh/h]	0	51	20	481	19	1	3	3	0	7	8	586
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	511	517	520	486	553	646
Degree of Utilization, x	0.14	0.48	0.48	0.01	0.03	0.91

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.48	2.62	2.59	0.04	0.08	11.56
95th-Percentile Queue Length [ft]	11.98	65.38	64.70	0.94	2.09	289.09
Approach Delay [s/veh]	11.17	15.96		10.50	38.82	
Approach LOS	B	C		B	E	
Intersection Delay [s/veh]	27.30					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	45.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.046

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	77	569	110	38	30	121	1432	206	709	1057	322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	12	243	7	4	6	17	526	92	209	268	25
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	188	95	858	126	45	38	148	2073	314	975	1410	373
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	25	226	33	12	10	39	547	83	257	372	98
Total Analysis Volume [veh/h]	198	100	905	133	47	40	156	2187	331	1028	1487	393
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups			2,7			3,6			5,8			1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	120	120	120	120	120	120	120	120	120	120	120	120
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	22	22	11	21	21	12	62	62	45	95	95
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	10	0	10	10
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	8	18	63	7	17	29	8	58	70	41	91	102
g / C, Green / Cycle	0.06	0.13	0.45	0.05	0.12	0.21	0.06	0.41	0.50	0.29	0.65	0.73
(v / s)_i Volume / Saturation Flow Rate	0.06	0.05	0.32	0.04	0.03	0.03	0.05	0.43	0.21	0.30	0.29	0.25
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1583	3445	5074	1583	3445	5074	1583
c, Capacity [veh/h]	197	241	1264	173	228	330	197	2097	790	1009	3293	1152
d1, Uniform Delay [s]	66.01	56.07	31.18	65.72	55.33	45.04	65.19	41.08	22.21	49.52	12.21	6.91
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	30.85	5.18	3.50	7.09	2.04	0.16	6.96	23.03	0.35	18.23	0.10	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

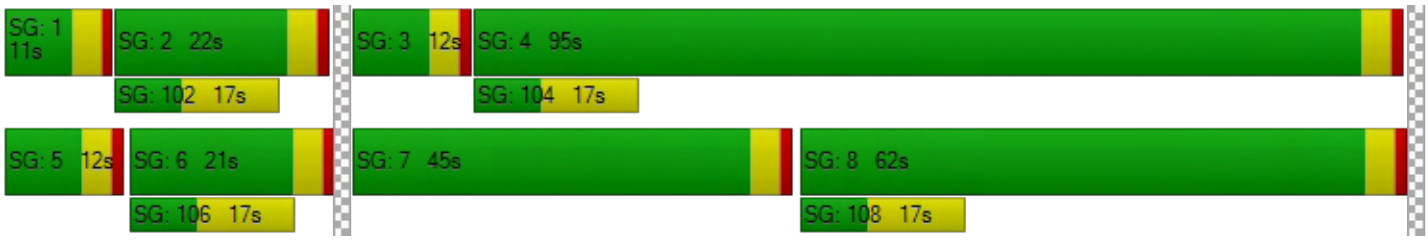
X, volume / capacity	1.00	0.41	0.72	0.77	0.21	0.12	0.79	1.04	0.42	1.02	0.45	0.34
d, Delay for Lane Group [s/veh]	96.87	61.25	34.68	72.81	57.37	45.21	72.15	64.10	22.56	67.75	12.30	7.09
Lane Group LOS	F	E	C	E	E	D	E	F	C	F	B	A
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.38	3.62	12.97	2.53	1.64	1.16	2.95	28.21	7.02	20.12	7.57	4.08
50th-Percentile Queue Length [ft/ln]	109.43	90.55	324.27	63.16	40.92	29.03	73.78	705.14	175.42	502.91	189.19	101.94
95th-Percentile Queue Length [veh/ln]	7.82	6.52	18.88	4.55	2.95	2.09	5.31	38.08	11.36	27.81	12.08	7.34
95th-Percentile Queue Length [ft/ln]	195.46	162.99	471.93	113.68	73.66	52.25	132.80	952.07	284.03	695.23	301.98	183.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	96.87	61.25	34.68	72.81	57.37	45.21	72.15	64.10	22.56	67.75	12.30	7.09
Movement LOS	F	E	C	E	E	D	E	F	C	F	B	A
d_A, Approach Delay [s/veh]	47.12			64.49			59.43			31.20		
Approach LOS	D			E			E			C		
d_I, Intersection Delay [s/veh]	45.76											
Intersection LOS	D											
Intersection V/C	1.046											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.890

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	249	182	0	4	167	324	238	4	192	3	5	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	232	0	0	207	33	16	0	40	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	298	429	0	4	387	383	273	4	247	3	5	3
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	91	131	0	1	118	117	83	1	75	1	2	1
Total Analysis Volume [veh/h]	363	523	0	5	472	467	333	5	301	4	6	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	23	26	0	24	27	0	0	20	0	0	20	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	41	1	26	26	16	16	16	16
g / C, Green / Cycle	0.23	0.59	0.01	0.37	0.37	0.23	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.20	0.28	0.00	0.25	0.29	0.24	0.00	0.19	0.01
s, saturation flow rate [veh/h]	1774	1863	1774	1863	1583	1399	1863	1583	1671
c, Capacity [veh/h]	412	1099	18	685	583	378	426	362	448
d1, Uniform Delay [s]	26.00	8.20	34.45	18.77	19.87	29.37	20.92	25.76	21.03
k, delay calibration	0.11	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.27	1.48	7.91	5.59	11.11	6.76	0.01	4.95	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.48	0.27	0.69	0.80	0.88	0.01	0.83	0.03
d, Delay for Lane Group [s/veh]	32.26	9.68	42.36	24.36	30.98	36.12	20.93	30.71	21.05
Lane Group LOS	C	A	D	C	C	D	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	6.23	4.15	0.12	7.01	8.03	6.23	0.06	5.01	0.17
50th-Percentile Queue Length [ft/ln]	155.70	103.83	3.05	175.26	200.70	155.78	1.55	125.15	4.37
95th-Percentile Queue Length [veh/ln]	10.32	7.48	0.22	11.35	12.67	10.32	0.11	8.68	0.31
95th-Percentile Queue Length [ft/ln]	258.02	186.90	5.50	283.82	316.86	258.12	2.79	216.88	7.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.26	9.68	9.68	42.36	24.36	30.98	36.12	20.93	30.71	21.05	21.05	21.05
Movement LOS	C	A	A	D	C	C	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	18.93			27.73			33.45			21.05		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	26.03											
Intersection LOS	C											
Intersection V/C	0.890											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Signalized	Delay (sec / veh):	42.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.912

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	347	320	0	0	330	26	15	0	264	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	220	0	0	250	13	49	0	70	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	417	566	0	0	606	41	65	0	355	1	0	1
Peak Hour Factor	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740	0.7740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	135	183	0	0	196	13	21	0	115	0	0	0
Total Analysis Volume [veh/h]	539	731	0	0	783	53	84	0	459	1	0	1
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	44	56	0	22	34	0	0	42	0	0	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	25	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	L	C	L	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	38	71	0	33	33	37	37	37	37
g / C, Green / Cycle	0.32	0.60	0.00	0.28	0.28	0.30	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.30	0.39	0.00	0.23	0.23	0.06	0.29	0.00	0.00
s, saturation flow rate [veh/h]	1774	1863	1774	1863	1822	1410	1583	929	1583
c, Capacity [veh/h]	565	1108	1	516	504	469	482	65	482
d1, Uniform Delay [s]	40.07	16.22	0.00	40.62	40.62	32.19	40.89	59.48	29.06
k, delay calibration	0.11	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.71	3.09	0.00	13.55	13.84	0.18	10.64	0.09	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

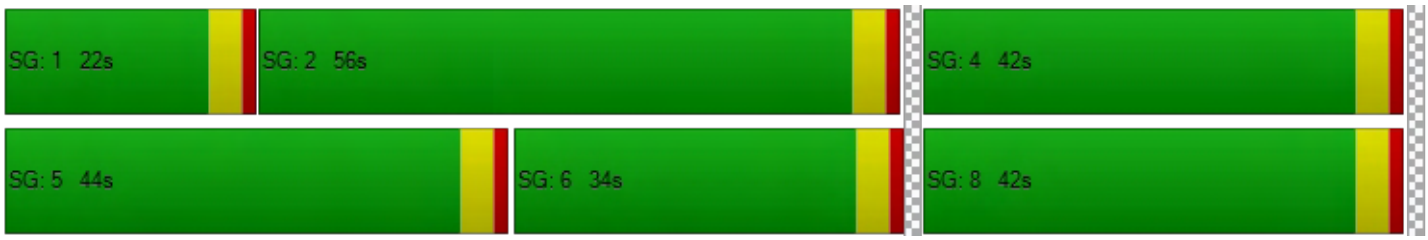
X, volume / capacity	0.95	0.66	0.00	0.82	0.82	0.18	0.95	0.02	0.00
d, Delay for Lane Group [s/veh]	49.78	19.30	0.00	54.17	54.46	32.38	51.53	59.57	29.06
Lane Group LOS	D	B	A	D	D	C	D	E	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	16.90	13.71	0.00	13.53	13.28	1.88	14.56	0.03	0.02
50th-Percentile Queue Length [ft/ln]	422.40	342.79	0.00	338.37	332.07	47.05	363.94	0.80	0.51
95th-Percentile Queue Length [veh/ln]	23.64	19.78	0.00	19.57	19.26	3.39	20.82	0.06	0.04
95th-Percentile Queue Length [ft/ln]	590.93	494.61	0.00	489.20	481.50	84.69	520.38	1.44	0.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.78	19.30	19.30	0.00	54.30	54.46	32.38	51.53	51.53	59.57	29.06	29.06
Movement LOS	D	B	B	A	D	D	C	D	D	E	C	C
d_A, Approach Delay [s/veh]	32.24			54.31			48.57			44.31		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	42.55											
Intersection LOS	D											
Intersection V/C	0.912											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	50.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.941

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	23	112	24	528	45	39	66	423	9	53	341	485
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	6	41	165	36	37	36	54	58	294	45	127
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	127	67	735	85	79	107	511	68	351	413	651
Peak Hour Factor	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090	0.8090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	39	21	227	26	24	33	158	21	108	128	201
Total Analysis Volume [veh/h]	41	157	83	909	105	98	132	632	84	434	511	805
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	120
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	11	21	0	29	39	0	13	23	0	27	37	37
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	10
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	5	17	17	25	37	9	19	19	23	33	62
g / C, Green / Cycle	0.05	0.17	0.17	0.25	0.37	0.09	0.19	0.19	0.23	0.33	0.62
(v / s)_i Volume / Saturation Flow Rate	0.02	0.08	0.05	0.26	0.12	0.07	0.20	0.20	0.24	0.14	0.51
s, saturation flow rate [veh/h]	1774	1863	1583	3445	1717	1774	1863	1787	1774	3547	1583
c, Capacity [veh/h]	85	320	272	861	642	160	351	337	408	1164	979
d1, Uniform Delay [s]	46.43	37.47	36.21	37.52	22.24	44.75	40.60	40.60	38.52	26.38	14.83
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.21	5.30	2.88	31.70	1.29	10.21	33.95	34.62	40.02	0.26	1.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.49	0.31	1.06	0.32	0.83	1.04	1.04	1.06	0.44	0.82
d, Delay for Lane Group [s/veh]	50.63	42.77	39.09	69.22	23.53	54.96	74.56	75.22	78.54	26.64	16.63
Lane Group LOS	D	D	D	F	C	D	F	F	F	C	B
Critical Lane Group	No	Yes	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.09	3.93	1.98	14.10	3.58	3.65	11.80	11.38	14.35	4.75	13.10
50th-Percentile Queue Length [ft/ln]	27.22	98.14	49.57	352.52	89.39	91.19	294.94	284.54	358.64	118.65	327.50
95th-Percentile Queue Length [veh/ln]	1.96	7.07	3.57	20.89	6.44	6.57	17.80	17.27	21.27	8.32	19.04
95th-Percentile Queue Length [ft/ln]	48.99	176.65	89.22	522.29	160.90	164.14	444.92	431.82	531.75	207.97	475.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.63	42.77	39.09	69.22	23.53	23.53	54.96	74.84	75.22	78.54	26.64	16.63
Movement LOS	D	D	D	F	C	C	D	E	E	F	C	B
d_A, Approach Delay [s/veh]	42.83			60.88			71.78			34.91		
Approach LOS	D			E			E			C		
d_I, Intersection Delay [s/veh]	50.54											
Intersection LOS	D											
Intersection V/C	0.941											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME.vistro

Scenario 7 Existing Plus Ambient Growth Plus Project Plus Cumulative Evening Peak Hour - With Improvements

Report File: C:\...\PMEAPCI WO.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Bradley Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.713	19.9	B
3	Bradley Rd (NS) at Craig Ave (EW)	Signalized	HCM 2010	NB Thru	0.652	12.4	B
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	SB Left	0.384	10.5	B
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Thru	1.160	79.2	E
10	Haun Rd (NS) at Holland Road (EW)	Signalized	HCM 2010	EB Left	0.989	39.5	D
11	Haun Road (NS) at Garbani Road (EW)	Signalized	HCM 2010	EB Left	0.796	24.2	C
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	NB Right	0.603	35.3	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Bradley Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	124	68	87	175	67	61	180	48	64	268	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	129	11	65	126	30	34	18	20	15	22	77
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	263	84	159	315	102	100	212	72	84	311	221
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	70	22	42	83	27	26	56	19	22	82	58
Total Analysis Volume [veh/h]	44	278	89	168	333	108	106	224	76	89	329	234
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	30	0	21	40	0	15	35	0	14	34	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	R
C, Cycle Length [s]	49	49	49	49	49	49	49	49	49	49	49
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	10	10	6	13	13	5	12	5	12	12
g / C, Green / Cycle	0.07	0.20	0.20	0.13	0.26	0.26	0.11	0.24	0.10	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.02	0.15	0.06	0.09	0.18	0.07	0.06	0.17	0.05	0.18	0.15
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1583	1774	1783	1774	1863	1583
c, Capacity [veh/h]	116	373	317	229	492	418	195	437	179	440	374
d1, Uniform Delay [s]	22.08	18.54	16.71	20.65	16.26	14.33	20.77	16.89	20.96	17.46	16.86
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.04	2.99	0.48	4.50	1.64	0.32	2.35	1.92	2.11	2.55	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

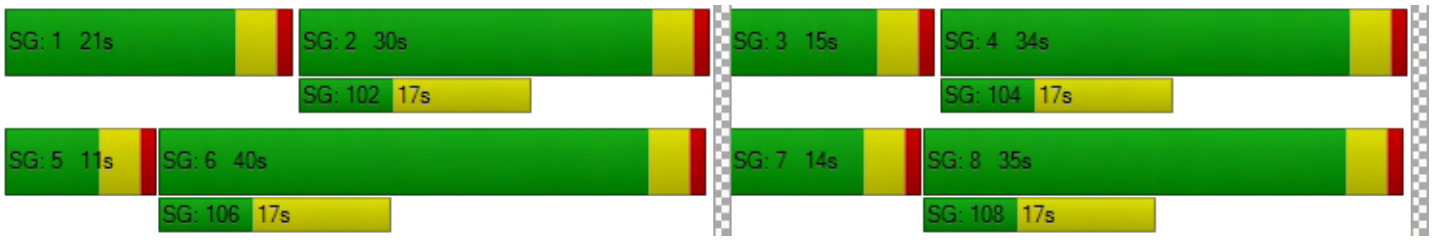
X, volume / capacity	0.38	0.75	0.28	0.73	0.68	0.26	0.54	0.69	0.50	0.75	0.63
d, Delay for Lane Group [s/veh]	24.12	21.52	17.19	25.15	17.91	14.66	23.13	18.81	23.08	20.01	18.58
Lane Group LOS	C	C	B	C	B	B	C	B	C	C	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.51	2.93	0.80	1.95	3.13	0.87	1.17	2.91	0.98	3.32	2.25
50th-Percentile Queue Length [ft/ln]	12.76	73.33	19.98	48.86	78.17	21.68	29.26	72.71	24.58	83.08	56.18
95th-Percentile Queue Length [veh/ln]	0.92	5.28	1.44	3.52	5.63	1.56	2.11	5.24	1.77	5.98	4.05
95th-Percentile Queue Length [ft/ln]	22.97	131.99	35.97	87.96	140.71	39.03	52.67	130.88	44.25	149.54	101.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.12	21.52	17.19	25.15	17.91	14.66	23.13	18.81	18.81	23.08	20.01	18.58
Movement LOS	C	C	B	C	B	B	C	B	B	C	C	B
d_A, Approach Delay [s/veh]	20.86			19.33			19.94			19.91		
Approach LOS	C			B			B			B		
d_I, Intersection Delay [s/veh]	19.94											
Intersection LOS	B											
Intersection V/C	0.713											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Bradley Rd (NS) at Craig Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	12.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	39	55	2	3	80	98	115	1	48	0	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	116	0	0	131	24	26	0	22	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	175	2	3	217	130	150	1	74	0	1	4
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	45	1	1	56	34	39	0	19	0	0	1
Total Analysis Volume [veh/h]	58	180	2	3	224	134	155	1	76	0	1	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	45	0	0	42	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	C	C
C, Cycle Length [s]	31	31	31	31	31
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	7	7	6	6
g / C, Green / Cycle	0.20	0.22	0.22	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.13	0.12	0.08	0.15	0.00
s, saturation flow rate [veh/h]	1838	1862	1583	1568	1149
c, Capacity [veh/h]	367	403	343	506	345
d1, Uniform Delay [s]	11.52	10.93	10.49	11.56	10.03
k, delay calibration	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.98	1.24	0.73	0.65	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

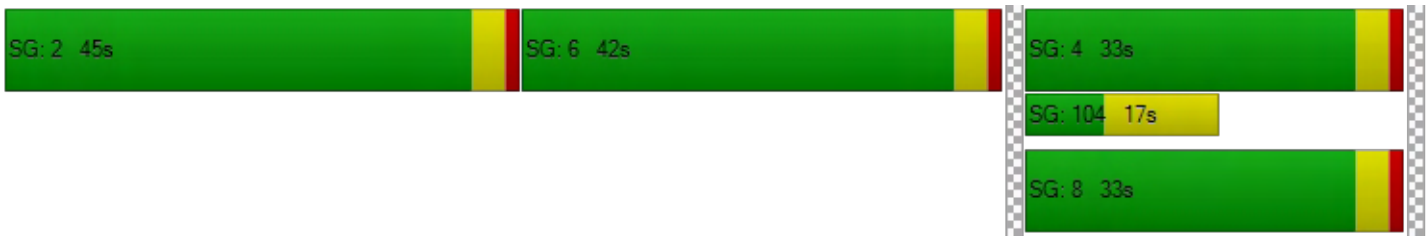
X, volume / capacity	0.65	0.56	0.39	0.46	0.01
d, Delay for Lane Group [s/veh]	13.50	12.17	11.21	12.21	10.05
Lane Group LOS	B	B	B	B	B
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.31	1.14	0.64	1.17	0.02
50th-Percentile Queue Length [ft/ln]	32.87	28.53	15.93	29.24	0.55
95th-Percentile Queue Length [veh/ln]	2.37	2.05	1.15	2.11	0.04
95th-Percentile Queue Length [ft/ln]	59.16	51.36	28.67	52.63	0.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.50	13.50	13.50	12.17	12.17	11.21	12.21	12.21	12.21	10.05	10.05	10.05
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	13.50			11.81			12.21			10.05		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	12.40											
Intersection LOS	B											
Intersection V/C	0.652											

Sequence

Ring 1	2	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.384

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	2	87	2	0	0	2	0	0	2	96
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	22	10	125	39	0	0	0	0	17	0	110
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	25	12	219	41	0	0	2	0	17	2	214
Peak Hour Factor	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580	0.7580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	8	4	72	14	0	0	1	0	6	1	71
Total Analysis Volume [veh/h]	0	33	16	289	54	0	0	3	0	22	3	282
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	645	612	629	601	596	735
Degree of Utilization, x	0.08	0.28	0.27	0.00	0.04	0.38

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.25	1.14	1.10	0.02	0.13	1.81
95th-Percentile Queue Length [ft]	6.15	28.59	27.58	0.38	3.28	45.24
Approach Delay [s/veh]	9.05	10.70		9.02	10.48	
Approach LOS	A	B		A	B	
Intersection Delay [s/veh]	10.48					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	79.2
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.160

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	344	91	813	337	126	109	132	1152	260	889	1249	218
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	201	13	445	39	17	26	20	494	164	455	670	30
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	573	111	1323	403	153	144	163	1738	445	1415	2019	265
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	147	28	339	103	39	37	42	445	114	362	517	68
Total Analysis Volume [veh/h]	586	114	1354	412	157	147	167	1779	455	1448	2067	271
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal group	5	2	2	1	6	6	3	8	8	7	4	4
Auxiliary Signal Groups			2,7			3,6			5,8			1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	120	120	120	120	120	120	120	120	120	120	120	120
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	24	24	24	21	21	21	11	44	44	51	84	84
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	10	0	10	10
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	20	12	71	17	9	20	7	40	64	55	88	109
g / C, Green / Cycle	0.14	0.09	0.51	0.12	0.07	0.14	0.05	0.29	0.46	0.39	0.63	0.78
(v / s)_i Volume / Saturation Flow Rate	0.17	0.06	0.48	0.12	0.08	0.09	0.05	0.35	0.29	0.42	0.41	0.17
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1583	3445	5074	1583	3445	5074	1583
c, Capacity [veh/h]	493	163	1421	419	123	229	173	1449	724	1347	3179	1230
d1, Uniform Delay [s]	60.06	62.17	32.94	61.42	65.46	56.49	66.43	50.07	28.98	42.67	16.50	4.22
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	89.85	22.13	14.98	16.82	172.71	2.97	23.96	103.77	0.90	47.24	0.23	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

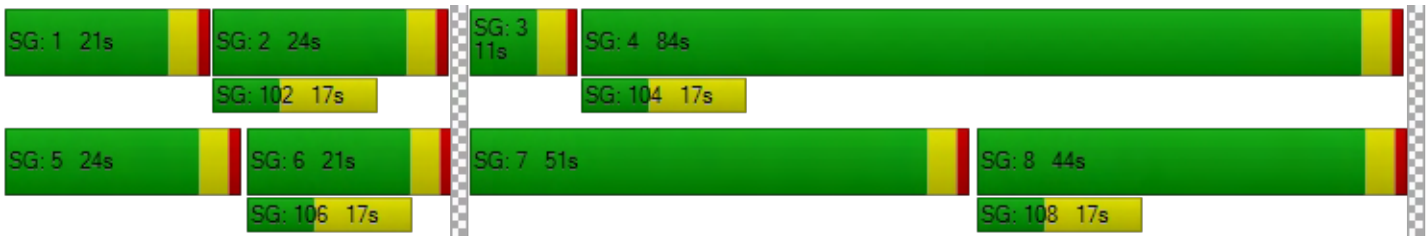
X, volume / capacity	1.19	0.70	0.95	0.98	1.28	0.64	0.96	1.23	0.63	1.07	0.65	0.22
d, Delay for Lane Group [s/veh]	149.91	84.30	47.92	78.24	238.17	59.45	90.39	153.84	29.88	89.91	16.73	4.31
Lane Group LOS	F	F	D	E	F	E	F	F	C	F	B	A
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	14.91	4.97	24.30	8.30	10.32	5.12	3.57	30.77	11.83	31.85	13.58	1.92
50th-Percentile Queue Length [ft/ln]	372.71	124.14	607.50	207.57	257.88	127.94	89.18	769.37	295.67	796.14	339.57	48.05
95th-Percentile Queue Length [veh/ln]	22.91	8.62	32.38	13.03	16.78	8.83	6.42	44.90	17.47	43.29	19.63	3.46
95th-Percentile Queue Length [ft/ln]	572.77	215.50	809.61	325.71	419.62	220.69	160.53	1122.46	436.67	1082.22	490.67	86.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	149.91	84.30	47.92	78.24	238.17	59.45	90.39	153.84	29.88	89.91	16.73	4.31
Movement LOS	F	F	D	E	F	E	F	F	C	F	B	A
d_A, Approach Delay [s/veh]	79.04			109.45			125.94			43.83		
Approach LOS	E			F			F			D		
d_I, Intersection Delay [s/veh]	79.16											
Intersection LOS	E											
Intersection V/C	1.160											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	Signalized	Delay (sec / veh):	39.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.989

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	241	255	2	4	258	293	245	2	118	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	129	442	0	0	447	30	50	0	125	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	389	717	2	4	726	346	315	2	252	0	0	4
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	191	1	1	193	92	84	1	67	0	0	1
Total Analysis Volume [veh/h]	414	763	2	4	772	368	335	2	268	0	0	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	32	86	0	0	54	0	0	29	0	0	29	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No			No			No			No	
Maximum Recall	No	No			No			No			No	
Pedestrian Recall	No	No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	82	50	50	50	25	25	25	25
g / C, Green / Cycle	0.24	0.71	0.43	0.43	0.43	0.22	0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.23	0.41	0.01	0.41	0.23	0.24	0.00	0.17	0.00
s, saturation flow rate [veh/h]	1774	1862	699	1863	1583	1407	1863	1583	1583
c, Capacity [veh/h]	433	1327	211	809	687	348	406	345	376
d1, Uniform Delay [s]	43.06	8.09	36.00	31.59	24.10	47.74	35.35	42.51	35.40
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.18	1.83	0.16	22.38	2.98	15.10	0.00	3.77	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.58	0.02	0.95	0.54	0.96	0.00	0.78	0.01
d, Delay for Lane Group [s/veh]	55.24	9.92	36.17	53.97	27.07	62.84	35.35	46.27	35.41
Lane Group LOS	E	A	D	D	C	E	D	D	D
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	12.98	8.87	0.10	25.10	7.87	11.22	0.04	7.51	0.09
50th-Percentile Queue Length [ft/ln]	324.54	221.64	2.49	627.39	196.65	280.46	1.12	187.75	2.25
95th-Percentile Queue Length [veh/ln]	18.89	13.75	0.18	33.31	12.47	16.71	0.08	12.00	0.16
95th-Percentile Queue Length [ft/ln]	472.26	343.72	4.48	832.78	311.64	417.79	2.02	300.11	4.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.24	9.92	9.92	36.17	53.97	27.07	62.84	35.35	46.27	35.41	35.41	35.41
Movement LOS	E	A	A	D	D	C	E	D	D	D	D	D
d_A, Approach Delay [s/veh]	25.83			45.25			55.41			35.41		
Approach LOS	C			D			E			D		
d_I, Intersection Delay [s/veh]	39.53											
Intersection LOS	D											
Intersection V/C	0.989											

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.796

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	82	472	0	0	349	13	7	0	82	4	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	129	546	0	0	553	44	54	0	118	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	1056	0	0	930	58	62	0	207	4	0	0
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	271	0	0	239	15	16	0	53	1	0	0
Total Analysis Volume [veh/h]	224	1084	0	0	955	60	64	0	213	4	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	26	84	0	11	69	0	0	25	0	0	25	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	25	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	87	0	70	70	21	21	21
g / C, Green / Cycle	0.14	0.72	0.00	0.58	0.58	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.13	0.58	0.00	0.28	0.28	0.05	0.13	0.02
s, saturation flow rate [veh/h]	1774	1863	1774	1863	1824	1412	1583	213
c, Capacity [veh/h]	255	1348	2	1082	1060	85	278	97
d1, Uniform Delay [s]	50.44	10.97	0.00	14.57	14.57	59.71	47.23	56.51
k, delay calibration	0.11	0.50	0.11	0.50	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.35	5.17	0.00	1.49	1.52	12.74	4.42	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.80	0.00	0.47	0.47	0.76	0.77	0.04
d, Delay for Lane Group [s/veh]	59.79	16.14	0.00	16.06	16.09	72.46	51.65	56.68
Lane Group LOS	E	B	A	B	B	E	D	E
Critical Lane Group	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.25	18.30	0.00	8.28	8.12	2.25	6.40	0.12
50th-Percentile Queue Length [ft/ln]	181.33	457.58	0.00	207.05	203.02	56.27	160.11	3.07
95th-Percentile Queue Length [veh/ln]	11.67	25.32	0.00	13.00	12.79	4.05	10.55	0.22
95th-Percentile Queue Length [ft/ln]	291.75	632.98	0.00	325.05	319.86	101.28	263.87	5.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.79	16.14	16.14	0.00	16.07	16.09	72.46	51.65	51.65	56.68	56.68	56.68
Movement LOS	E	B	B	A	B	B	E	D	D	E	E	E
d_A, Approach Delay [s/veh]	23.62			16.07			56.46			56.68		
Approach LOS	C			B			E			E		
d_I, Intersection Delay [s/veh]	24.22											
Intersection LOS	C											
Intersection V/C	0.796											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	35.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.603

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	33	51	32	319	19	43	39	435	20	55	441	467
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	52	32	261	261	6	75	78	139	8	39	134	321
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	87	296	606	27	121	120	609	30	98	610	825
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	22	76	155	7	31	31	156	8	25	156	212
Total Analysis Volume [veh/h]	90	89	304	622	28	124	123	625	31	101	626	846
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal group	5	2	0	1	6	0	3	8	0	7	4	4
Auxiliary Signal Groups												1,4
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	120
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	36	23	0	34	21	0	12	31	0	12	31	31
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	10
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	7	22	22	30	45	8	26	26	7	25	58
g / C, Green / Cycle	0.07	0.22	0.22	0.30	0.45	0.08	0.26	0.26	0.07	0.25	0.58
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.19	0.18	0.09	0.07	0.18	0.18	0.06	0.18	0.53
s, saturation flow rate [veh/h]	1774	1863	1583	3445	1628	1774	1863	1832	1774	3547	1583
c, Capacity [veh/h]	118	401	341	1018	724	142	479	471	128	884	926
d1, Uniform Delay [s]	45.96	32.36	38.14	30.32	17.04	45.50	33.56	33.57	45.70	34.26	18.55
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.84	1.27	27.69	0.60	0.66	14.16	1.78	1.81	10.32	1.06	4.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

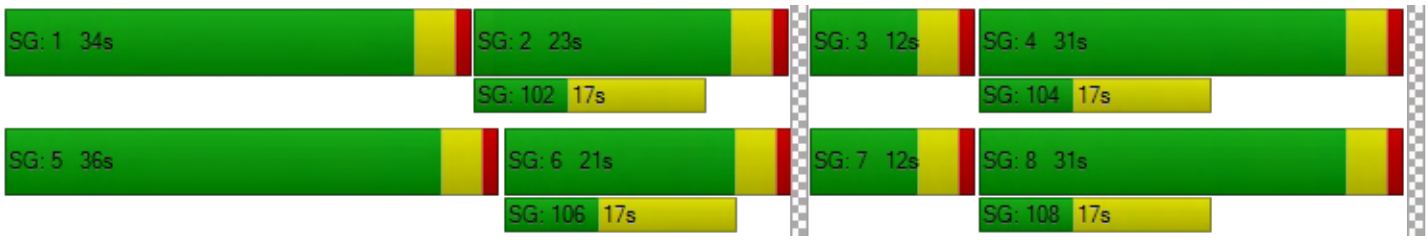
X, volume / capacity	0.76	0.22	0.89	0.61	0.21	0.86	0.69	0.69	0.79	0.71	0.91
d, Delay for Lane Group [s/veh]	55.80	33.63	65.83	30.92	17.70	59.66	35.34	35.38	56.02	35.32	22.59
Lane Group LOS	E	C	E	C	B	E	D	D	E	D	C
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.51	1.91	9.74	6.42	2.23	3.56	7.38	7.26	2.82	6.97	16.77
50th-Percentile Queue Length [ft/ln]	62.73	47.77	243.55	160.46	55.87	88.93	184.39	181.59	70.51	174.18	419.29
95th-Percentile Queue Length [veh/ln]	4.52	3.44	14.86	10.57	4.02	6.40	11.83	11.68	5.08	11.30	23.49
95th-Percentile Queue Length [ft/ln]	112.91	85.98	371.52	264.33	100.57	160.07	295.73	292.08	126.91	282.41	587.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.80	33.63	65.83	30.92	17.70	17.70	59.66	35.36	35.38	56.02	35.32	22.59
Movement LOS	E	C	E	C	B	B	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	58.03			28.32			39.20			29.80		
Approach LOS	E			C			D			C		
d_I, Intersection Delay [s/veh]	35.29											
Intersection LOS	D											
Intersection V/C	0.603											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



EXISTING PLUS AMBIENT GROWTH PLUS CUMULATIVE (WITH HOLLAND ROAD OVERPASS)

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME - Holland.vistro

Scenario 7 Existing Plus Ambient Growth Plus Cumulative Morning Peak Hour - Holland Overpass

Report File: C:\...\AMEAC W.pdf

1/15/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	WB Right	0.609	13.2	B
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Left	0.711	20.0	B
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	WB Thru	2.172	195.2	F
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	WB Left	0.000	984.2	F
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.666	20.1	C
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.574	7.3	A
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.755	6.3	A
18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.520	7.5	A
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.766	3.2	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	WB Left	0.586	47.5	D
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.243	4.4	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.743	22.8	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.713	23.3	C
24	Hanover Ln (NS) at Holland Rd (EW)	All-way stop	HCM 2010	WB Thru	1.887	204.9	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.609

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	0	301	1	1	2	2	0	0	6	434
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	0	301	1	1	2	2	0	0	6	434
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	0	79	0	0	1	1	0	0	2	114
Total Analysis Volume [veh/h]	0	3	0	317	1	1	2	2	0	0	6	457
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	578	581	581	582	655	751
Degree of Utilization, x	0.01	0.27	0.27	0.01	0.01	0.61

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.02	1.11	1.11	0.02	0.03	4.19
95th-Percentile Queue Length [ft]	0.39	27.83	27.77	0.52	0.69	104.67
Approach Delay [s/veh]	9.27	11.23		9.22	14.57	
Approach LOS	A	B		A	B	
Intersection Delay [s/veh]	13.17					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	20.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	170	45	300	94	44	30	99	1159	238	656	810	233
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	45	300	94	44	30	99	1159	238	656	810	233
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	12	79	25	12	8	26	305	63	173	213	61
Total Analysis Volume [veh/h]	179	47	316	99	46	32	104	1220	251	691	853	245
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	24	24	13	21	0	51	56	0	47	52	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	71	71	71	71	71	71	71	71	71	71	71	71
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	29	6	6	6	6	23	23	18	36	36
g / C, Green / Cycle	0.10	0.10	0.42	0.08	0.09	0.09	0.09	0.33	0.33	0.26	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.05	0.03	0.11	0.03	0.02	0.02	0.03	0.24	0.16	0.20	0.21	0.21
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1622	3445	5074	1583	3445	3547	1659
c, Capacity [veh/h]	331	184	1164	293	163	142	297	1677	523	896	1789	837
d1, Uniform Delay [s]	30.55	29.53	13.66	30.55	30.14	30.20	30.51	20.91	18.88	24.27	11.03	11.04
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.38	0.72	0.12	0.68	0.77	1.00	0.70	0.62	0.68	1.44	0.16	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

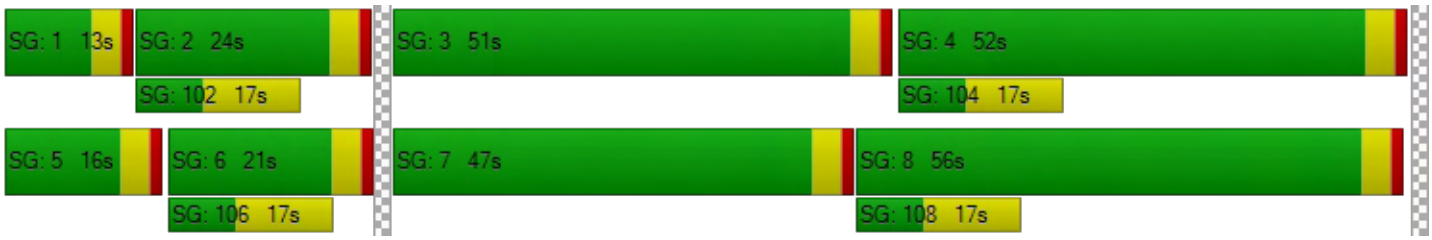
X, volume / capacity	0.54	0.26	0.27	0.34	0.24	0.27	0.35	0.73	0.48	0.77	0.42	0.42
d, Delay for Lane Group [s/veh]	31.93	30.26	13.78	31.23	30.91	31.20	31.21	21.53	19.56	25.71	11.18	11.38
Lane Group LOS	C	C	B	C	C	C	C	C	B	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.47	0.75	1.55	0.80	0.65	0.63	0.84	5.60	3.17	5.22	3.29	3.14
50th-Percentile Queue Length [ft/ln]	36.71	18.80	38.84	19.93	16.22	15.65	20.94	140.00	79.15	130.53	82.19	78.46
95th-Percentile Queue Length [veh/ln]	2.64	1.35	2.80	1.44	1.17	1.13	1.51	9.48	5.70	8.97	5.92	5.65
95th-Percentile Queue Length [ft/ln]	66.09	33.84	69.91	35.88	29.20	28.17	37.68	237.02	142.46	224.22	147.95	141.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.93	30.26	13.78	31.23	30.95	31.20	31.21	21.53	19.56	25.71	11.21	11.38
Movement LOS	C	C	B	C	C	C	C	C	B	C	B	B
d_A, Approach Delay [s/veh]	21.20			31.15			21.85			16.83		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	19.97											
Intersection LOS	B											
Intersection V/C	0.711											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	195.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.172

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	266	127	162	132	322	201	144	314	208	278	336	147
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	266	127	162	132	322	201	144	314	208	278	336	147
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	33	43	35	85	53	38	83	55	73	88	39
Total Analysis Volume [veh/h]	280	134	171	139	339	212	152	331	219	293	354	155
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	326	352	323	339	359	352	370	397	802
Degree of Utilization, x	0.86	0.87	0.43	1.01	0.59	0.43	0.90	0.55	2.17

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	7.75	8.15	2.08	11.40	3.62	2.10	9.01	3.23	59.18
95th-Percentile Queue Length [ft]	193.81	203.87	52.01	285.11	90.41	52.60	225.20	80.80	1479.54
Approach Delay [s/veh]	53.61		53.92			37.88			557.75
Approach LOS	F		F			E			F
Intersection Delay [s/veh]	195.20								
Intersection LOS	F								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	984.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	375	539	0	0	749	59	16	0	285	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	375	539	0	0	749	59	16	0	285	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	142	0	0	197	16	4	0	75	0	0	0
Total Analysis Volume [veh/h]	395	567	0	0	788	62	17	0	300	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.50	0.01	0.00	0.00	0.01	0.00	0.80	0.00	0.77	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.07	0.00	0.00	8.58	0.00	0.00	379.54	178.31	38.75	984.21	167.85	11.88
Movement LOS	B	A	A	A	A	A	F	F	E	F	F	B
95th-Percentile Queue Length [veh/ln]	2.85	0.00	0.00	0.00	0.00	0.00	2.27	6.34	6.34	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	71.22	0.00	0.00	0.00	0.00	0.00	56.78	158.57	158.57	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	5.78			0.00			57.03			387.98		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	11.10											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	20.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.666

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	26	93	34	490	63	38	78	372	16	75	334	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	93	34	490	63	38	78	372	16	75	334	281
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	24	9	129	17	10	21	98	4	20	88	74
Total Analysis Volume [veh/h]	27	98	36	516	66	40	82	392	17	79	352	296
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	33	0	12	34	0	12	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	52	52	52	52	52	52	52	52	52	52	52
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	12	12	5	13	13	5	13	13
g / C, Green / Cycle	0.12	0.12	0.12	0.23	0.23	0.09	0.25	0.25	0.09	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.02	0.18	0.18	0.05	0.11	0.11	0.04	0.10	0.19
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1765	1774	1863	1836	1774	3547	1583
c, Capacity [veh/h]	215	226	192	415	413	167	460	454	164	870	389
d1, Uniform Delay [s]	20.54	21.35	20.70	18.66	18.66	22.55	16.70	16.70	22.60	16.57	18.35
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	1.31	0.47	2.77	2.78	2.23	0.68	0.69	2.19	0.30	3.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

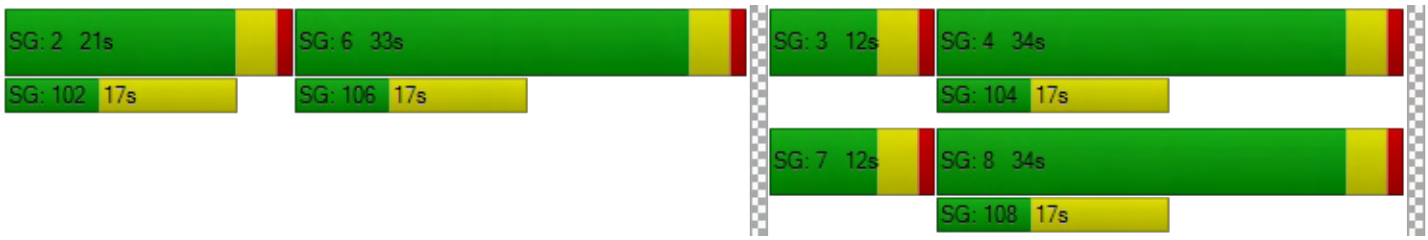
X, volume / capacity	0.13	0.43	0.19	0.75	0.75	0.49	0.45	0.45	0.48	0.40	0.76
d, Delay for Lane Group [s/veh]	20.80	22.66	21.17	21.43	21.45	24.78	17.37	17.40	24.79	16.87	21.47
Lane Group LOS	C	C	C	C	C	C	B	B	C	B	C
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.29	1.10	0.39	3.43	3.42	0.99	1.95	1.93	0.95	1.61	3.27
50th-Percentile Queue Length [ft/ln]	7.14	27.55	9.70	85.84	85.47	24.63	48.65	48.17	23.75	40.33	81.84
95th-Percentile Queue Length [veh/ln]	0.51	1.98	0.70	6.18	6.15	1.77	3.50	3.47	1.71	2.90	5.89
95th-Percentile Queue Length [ft/ln]	12.86	49.58	17.46	154.52	153.85	44.33	87.57	86.71	42.75	72.60	147.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.80	22.66	21.17	21.43	21.45	21.45	24.78	17.39	17.40	24.79	16.87	21.47
Movement LOS	C	C	C	C	C	C	C	B	B	C	B	C
d_A, Approach Delay [s/veh]	22.02			21.44			18.62			19.60		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.13											
Intersection LOS	C											
Intersection V/C	0.666											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	7.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	291	0	527	0	970	584	0	1171	602
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	291	0	527	0	970	584	0	1171	602
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	1.0000	0.9500	1.0000	0.9500	0.9500	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	77	0	139	0	255	0	0	308	0
Total Analysis Volume [veh/h]	0	0	0	306	0	555	0	1021	0	0	1233	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	25	0	0	0	115	0	0	115	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		30	30	30	30	30	30	30
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		9	9	9	13	13	13	13
g / C, Green / Cycle		0.30	0.30	0.30	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate		0.17	0.18	0.18	0.15	0.00	0.24	0.00
s, saturation flow rate [veh/h]		1774	1589	1583	6765	1583	5074	1583
c, Capacity [veh/h]		537	481	479	2924	684	2193	684
d1, Uniform Delay [s]		8.81	8.92	8.93	5.73	0.00	6.42	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.89	1.14	1.15	0.07	0.00	0.23	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.55	0.59	0.59	0.35	0.00	0.56	0.00
d, Delay for Lane Group [s/veh]		9.69	10.07	10.08	5.80	0.00	6.65	0.00
Lane Group LOS		A	B	B	A	A	A	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		1.18	1.16	1.16	0.57	0.00	1.05	0.00
50th-Percentile Queue Length [ft/ln]		29.39	29.02	29.00	14.28	0.00	26.29	0.00
95th-Percentile Queue Length [veh/ln]		2.12	2.09	2.09	1.03	0.00	1.89	0.00
95th-Percentile Queue Length [ft/ln]		52.91	52.23	52.21	25.70	0.00	47.32	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.72	0.00	10.07	0.00	5.80	0.00	0.00	6.65	0.00
Movement LOS				A		B		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			9.94			5.80			6.65		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	7.28											
Intersection LOS	A											
Intersection V/C	0.574											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	6.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.755

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	363	0	54	0	471	422	0	637	456
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	363	0	54	0	471	422	0	637	456
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	1.0000	0.9500	1.0000	0.9500	0.9500	0.9250	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	96	0	14	0	124	111	0	168	120
Total Analysis Volume [veh/h]	0	0	0	382	0	57	0	496	444	0	671	480
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	65	0	0	0	35	0	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		27	27	27	27	27	27
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		7	7	12	12	12	12
g / C, Green / Cycle		0.25	0.25	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate		0.11	0.02	0.14	0.28	0.19	0.30
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		875	712	1583	707	1583	707
d1, Uniform Delay [s]		8.35	7.58	4.76	5.68	5.04	5.87
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.34	0.05	0.11	0.93	0.18	1.16
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

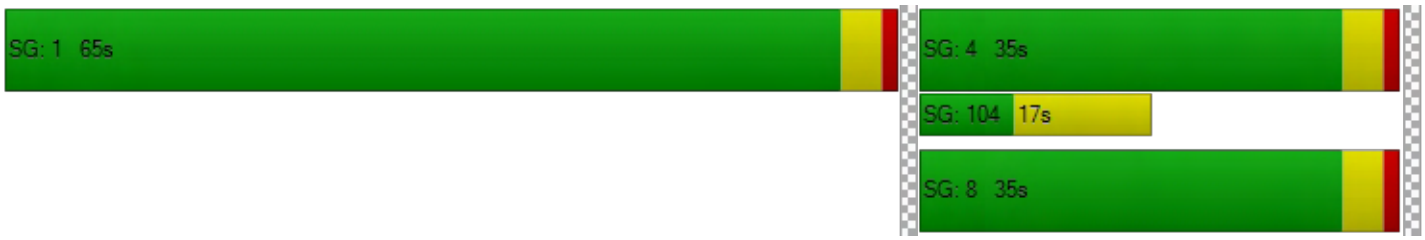
X, volume / capacity		0.44	0.08	0.31	0.63	0.42	0.68
d, Delay for Lane Group [s/veh]		8.70	7.63	4.87	6.61	5.23	7.03
Lane Group LOS		A	A	A	A	A	A
Critical Lane Group		Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		0.61	0.08	0.37	0.93	0.54	1.06
50th-Percentile Queue Length [ft/ln]		15.15	2.03	9.36	23.26	13.55	26.57
95th-Percentile Queue Length [veh/ln]		1.09	0.15	0.67	1.67	0.98	1.91
95th-Percentile Queue Length [ft/ln]		27.27	3.65	16.85	41.87	24.38	47.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.70	0.00	7.63	0.00	4.87	6.61	0.00	5.23	7.03
Movement LOS				A		A		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			8.56			5.69			5.98		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	6.32											
Intersection LOS	A											
Intersection V/C	0.755											

Sequence

Ring 1	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	7.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.520

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	328	0	480	0	0	0	0	930	331	0	1446	372
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	328	0	480	0	0	0	0	930	331	0	1446	372
Peak Hour Factor	0.9500	1.0000	0.9500	1.0000	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	86	0	126	0	0	0	0	245	0	0	381	0
Total Analysis Volume [veh/h]	345	0	505	0	0	0	0	979	0	0	1522	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	104	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	35	35	35		35	35	35	35
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10		17	17	17	17
g / C, Green / Cycle	0.28	0.28	0.28		0.49	0.49	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.16	0.17	0.18		0.19	0.00	0.22	0.00
s, saturation flow rate [veh/h]	1774	1616	1583		5074	1583	6765	1583
c, Capacity [veh/h]	500	455	446		2482	774	3309	774
d1, Uniform Delay [s]	10.78	10.89	10.91		5.64	0.00	5.87	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.09	1.36	1.42		0.10	0.00	0.10	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.62	0.62		0.39	0.00	0.46	0.00
d, Delay for Lane Group [s/veh]	11.87	12.25	12.34		5.74	0.00	5.97	0.00
Lane Group LOS	B	B	B		A	A	A	A
Critical Lane Group	No	No	Yes		No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.57	1.54	1.54		0.85	0.00	1.03	0.00
50th-Percentile Queue Length [ft/ln]	39.29	38.62	38.48		21.27	0.00	25.69	0.00
95th-Percentile Queue Length [veh/ln]	2.83	2.78	2.77		1.53	0.00	1.85	0.00
95th-Percentile Queue Length [ft/ln]	70.72	69.52	69.27		38.28	0.00	46.23	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.94	0.00	12.30	0.00	0.00	0.00	0.00	5.74	0.00	0.00	5.97	0.00
Movement LOS	B		B					A	A		A	A
d_A, Approach Delay [s/veh]	12.15			0.00			5.74			5.97		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	7.47											
Intersection LOS	A											
Intersection V/C	0.520											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	3.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.766

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	370	0	0	306	96	739	0	0	787	436
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	370	0	0	306	96	739	0	0	787	436
Peak Hour Factor	0.9380	1.0000	0.9500	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	97	0	0	81	25	194	0	0	207	115
Total Analysis Volume [veh/h]	0	0	389	0	0	322	101	778	0	0	828	459
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	19	100	0	0	81	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			22	22	22	22
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			3	18	11	11
g / C, Green / Cycle			0.15	0.82	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate			0.06	0.22	0.23	0.29
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			266	2902	1727	771
d1, Uniform Delay [s]			8.44	0.47	3.78	4.08
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			0.89	0.05	0.21	0.74
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.38	0.27	0.48	0.60
d, Delay for Lane Group [s/veh]			9.33	0.51	3.99	4.82
Lane Group LOS			A	A	A	A
Critical Lane Group			Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]			0.31	0.02	0.18	0.32
50th-Percentile Queue Length [ft/ln]			7.81	0.49	4.54	7.90
95th-Percentile Queue Length [veh/ln]			0.56	0.04	0.33	0.57
95th-Percentile Queue Length [ft/ln]			14.05	0.89	8.17	14.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	9.33	0.51	0.00	0.00	3.99	4.82
Movement LOS							A	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			1.53			4.29		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.17											
Intersection LOS	A											
Intersection V/C	0.766											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	47.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.586

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	447	46	102	77	106	103	99	901	412	143	1267	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	447	46	102	77	106	103	99	901	412	143	1267	41
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	118	12	27	20	28	27	26	237	108	38	333	11
Total Analysis Volume [veh/h]	471	48	107	81	112	108	104	948	434	151	1334	43
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	33	21	0	33	21	0	12	74	0	12	74	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	66	66	7	51	51	7	43	43	8	45	45
g / C, Green / Cycle	0.16	0.47	0.47	0.05	0.36	0.36	0.05	0.31	0.31	0.06	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.14	0.03	0.07	0.02	0.06	0.06	0.03	0.19	0.27	0.04	0.26	0.26
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1848	1583	3445	5074	1583	3445	3547	1833
c, Capacity [veh/h]	537	875	743	166	669	573	171	1576	492	198	1130	584
d1, Uniform Delay [s]	57.85	20.24	21.15	65.01	30.47	30.51	65.29	40.96	45.89	65.12	43.74	43.74
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.76	0.12	0.41	2.20	0.57	0.68	3.49	0.37	5.39	5.98	1.39	2.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.05	0.14	0.49	0.18	0.18	0.61	0.60	0.88	0.76	0.80	0.80
d, Delay for Lane Group [s/veh]	62.61	20.36	21.56	67.21	31.04	31.20	68.78	41.33	51.28	71.10	45.13	46.39
Lane Group LOS	E	C	C	E	C	C	E	D	D	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.53	0.90	2.12	1.47	2.85	2.51	1.91	9.36	15.06	2.83	14.64	15.34
50th-Percentile Queue Length [ft/ln]	213.32	22.57	52.97	36.69	71.29	62.86	47.79	234.10	376.49	70.83	366.07	383.53
95th-Percentile Queue Length [veh/ln]	13.32	1.62	3.81	2.64	5.13	4.53	3.44	14.38	21.42	5.10	20.92	21.76
95th-Percentile Queue Length [ft/ln]	333.09	40.62	95.35	66.04	128.33	113.15	86.02	359.56	535.60	127.50	522.96	544.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.61	20.36	21.56	67.21	31.04	31.20	68.78	41.33	51.28	71.10	45.53	46.39
Movement LOS	E	C	C	E	C	C	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	52.35			40.83			46.16			48.08		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	47.48											
Intersection LOS	D											
Intersection V/C	0.586											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	4.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.243

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			Yes			Yes	

Volumes

Name												
Base Volume Input [veh/h]	0	248	27	25	278	0	0	0	0	16	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	248	27	25	278	0	0	0	0	16	0	11
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	65	7	7	73	0	0	0	0	4	0	3
Total Analysis Volume [veh/h]	0	261	28	26	293	0	0	0	0	17	0	12
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	63	0	16	79	0	0	0	0	21	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	20	20	20	20		20	20	20
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	1	11		1	1	1
g / C, Green / Cycle	0.29	0.29	0.05	0.54		0.05	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.07	0.02	0.01	0.08		0.01	0.01	0.01
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1722	1583
c, Capacity [veh/h]	1018	454	88	1913		98	95	87
d1, Uniform Delay [s]	5.41	5.11	9.04	2.28		8.86	8.86	8.86
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.13	0.06	1.82	0.04		0.44	0.47	0.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.06	0.29	0.15		0.10	0.10	0.11
d, Delay for Lane Group [s/veh]	5.55	5.16	10.86	2.32		9.30	9.33	9.41
Lane Group LOS	A	A	B	A		A	A	A
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.16	0.04	0.11	0.01		0.03	0.03	0.04
50th-Percentile Queue Length [ft/ln]	4.02	0.90	2.64	0.24		0.85	0.86	0.88
95th-Percentile Queue Length [veh/ln]	0.29	0.06	0.19	0.02		0.06	0.06	0.06
95th-Percentile Queue Length [ft/ln]	7.23	1.61	4.75	0.44		1.54	1.55	1.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	5.55	5.16	10.86	2.32	0.00	0.00	0.00	0.00	9.31	0.00	9.40
Movement LOS		A	A	B	A					A		A
d_A, Approach Delay [s/veh]	5.51			3.01			0.00			9.35		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.43											
Intersection LOS	A											
Intersection V/C	0.243											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	322	130	57	41	183	329	229	545	334	37	573	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	322	130	57	41	183	329	229	545	334	37	573	52
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	34	15	11	48	87	60	143	88	10	151	14
Total Analysis Volume [veh/h]	339	137	60	43	193	346	241	574	352	39	603	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	28	0	27	37	0	24	34	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	62	62	62	62	62	62	62	62	62	62	62	62
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	21	21	4	16	16	7	17	17	3	14	14
g / C, Green / Cycle	0.14	0.35	0.35	0.06	0.26	0.26	0.11	0.28	0.28	0.06	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.10	0.04	0.04	0.02	0.10	0.22	0.07	0.16	0.22	0.01	0.12	0.12
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1785
c, Capacity [veh/h]	492	1230	549	106	491	418	383	993	444	192	797	401
d1, Uniform Delay [s]	25.30	13.77	13.76	28.13	18.77	21.53	26.36	19.19	20.68	27.99	21.28	21.31
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.73	0.04	0.09	2.50	0.51	4.27	1.70	0.53	3.26	0.52	0.59	1.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

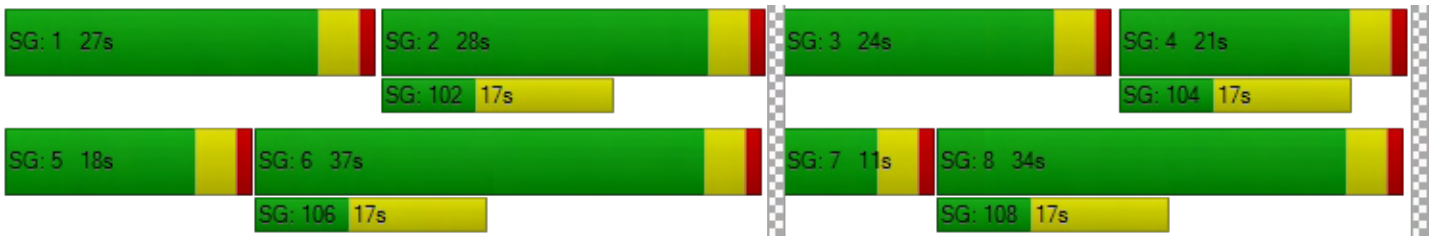
X, volume / capacity	0.69	0.11	0.11	0.41	0.39	0.83	0.63	0.58	0.79	0.20	0.55	0.55
d, Delay for Lane Group [s/veh]	27.03	13.81	13.85	30.63	19.28	25.80	28.06	19.73	23.94	28.51	21.87	22.51
Lane Group LOS	C	B	B	C	B	C	C	B	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.35	0.60	0.53	0.66	2.17	4.82	1.70	3.32	4.70	0.28	2.66	2.78
50th-Percentile Queue Length [ft/ln]	58.66	15.04	13.35	16.47	54.37	120.59	42.39	83.11	117.47	6.92	66.59	69.58
95th-Percentile Queue Length [veh/ln]	4.22	1.08	0.96	1.19	3.91	8.43	3.05	5.98	8.25	0.50	4.79	5.01
95th-Percentile Queue Length [ft/ln]	105.60	27.07	24.02	29.64	97.86	210.64	76.30	149.61	206.34	12.46	119.87	125.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.03	13.81	13.85	30.63	19.28	25.80	28.06	19.73	23.94	28.51	22.05	22.51
Movement LOS	C	B	B	C	B	C	C	B	C	C	C	C
d_A, Approach Delay [s/veh]	22.18			24.00			22.72			22.44		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	22.81											
Intersection LOS	C											
Intersection V/C	0.743											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	161	299	215	67	587	322	200	627	127	330	842	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	161	299	215	67	587	322	200	627	127	330	842	43
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	79	57	18	154	85	53	165	33	87	222	11
Total Analysis Volume [veh/h]	169	315	226	71	618	339	211	660	134	347	886	45
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	28	28	14	30	30	27	37	0	21	31	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	67	67	67	67	67	67	67	67	67	67	67	67
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	17	31	5	16	32	13	19	19	10	16	16
g / C, Green / Cycle	0.10	0.25	0.46	0.08	0.23	0.48	0.19	0.28	0.28	0.15	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.14	0.04	0.17	0.21	0.06	0.22	0.22	0.10	0.17	0.03
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1755	3445	5074	1583
c, Capacity [veh/h]	343	903	736	136	823	766	663	522	492	520	1211	378
d1, Uniform Delay [s]	28.72	20.54	11.25	29.91	24.07	11.43	23.41	22.37	22.37	27.01	23.67	20.11
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.09	0.23	0.23	3.05	1.41	0.40	0.27	2.63	2.79	1.49	0.87	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

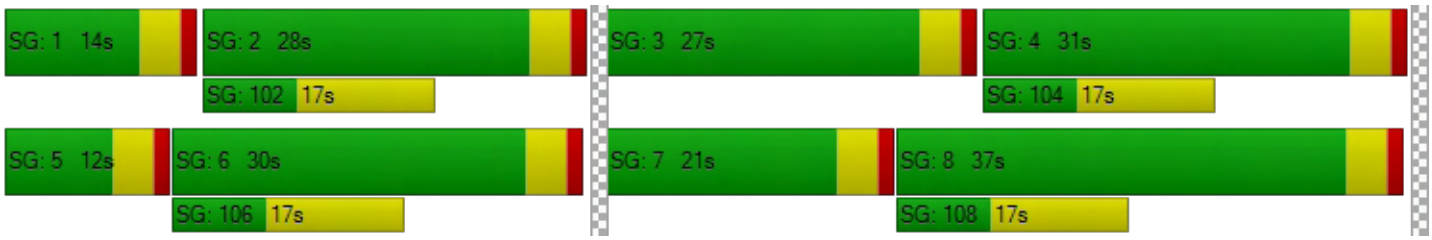
X, volume / capacity	0.49	0.35	0.31	0.52	0.75	0.44	0.32	0.78	0.78	0.67	0.73	0.12
d, Delay for Lane Group [s/veh]	29.81	20.77	11.48	32.96	25.48	11.83	23.69	25.00	25.16	28.50	24.54	20.24
Lane Group LOS	C	C	B	C	C	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.29	1.93	1.92	1.18	4.45	3.00	1.40	5.91	5.59	2.61	4.15	0.54
50th-Percentile Queue Length [ft/ln]	32.21	48.37	48.01	29.41	111.19	75.04	34.89	147.78	139.78	65.22	103.80	13.49
95th-Percentile Queue Length [veh/ln]	2.32	3.48	3.46	2.12	7.91	5.40	2.51	9.90	9.47	4.70	7.47	0.97
95th-Percentile Queue Length [ft/ln]	57.98	87.06	86.42	52.94	197.66	135.07	62.80	247.46	236.73	117.40	186.84	24.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.81	20.77	11.48	32.96	25.48	11.83	23.69	25.06	25.16	28.50	24.54	20.24
Movement LOS	C	C	B	C	C	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	19.97			21.50			24.79			25.46		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	23.31											
Intersection LOS	C											
Intersection V/C	0.713											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 24: Hanover Ln (NS) at Holland Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	204.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.887

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	2	81	137	1	53	46	491	70	197	640	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	2	81	137	1	53	46	491	70	197	640	190
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	1	21	36	0	14	12	129	18	52	168	50
Total Analysis Volume [veh/h]	73	2	85	144	1	56	48	517	74	207	674	200
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	431	431	458	517	541	427	874
Degree of Utilization, x	0.37	0.47	0.10	1.06	0.14	0.49	1.89

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.68	2.43	0.35	15.76	0.47	2.58	57.09
95th-Percentile Queue Length [ft]	42.08	60.64	8.72	393.91	11.79	64.57	1427.31
Approach Delay [s/veh]	16.17	18.49	69.41			347.62	
Approach LOS	C	C	F			F	
Intersection Delay [s/veh]	204.92						
Intersection LOS	F						

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME - Holland.vistro

Scenario 6 Existing Plus Ambient Growth Plus Cumulative Evening Peak Hour - Holland Overpass

Report File: C:\...\PMEAC W.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	SB Left	0.136	7.7	A
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.815	25.8	C
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	WB Thru	2.661	318.8	F
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	WB Left	0.000	104.9	F
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.646	18.2	B
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.638	8.9	A
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.767	6.2	A
18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.653	9.4	A
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.790	3.2	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.698	42.6	D
21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	NWB Right	0.477	6.5	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.751	25.9	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.677	19.5	B
24	Hanover Ln (NS) at Holland Rd (EW)	All-way stop	HCM 2010	WB Thru	1.709	178.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	7.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.136

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	2	97	2	0	0	2	0	0	2	114
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	2	97	2	0	0	2	0	0	2	114
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	1	26	1	0	0	1	0	0	1	30
Total Analysis Volume [veh/h]	0	3	2	102	2	0	0	2	0	0	2	120
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	885	819	817	752	881
Degree of Utilization, x	0.01	0.13	0.00	0.00	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.02	0.43	0.01	0.01	0.47
95th-Percentile Queue Length [ft]	0.43	10.86	0.18	0.20	11.78
Approach Delay [s/veh]	7.09	8.04	7.42	7.43	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	7.70				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.815

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	430	65	583	237	58	100	76	933	355	650	1083	166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	430	65	583	237	58	100	76	933	355	650	1083	166
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	17	153	62	15	26	20	246	93	171	285	44
Total Analysis Volume [veh/h]	453	68	614	249	61	105	80	982	374	684	1140	175
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	30	33	33	18	21	0	38	48	0	41	51	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	86	86	86	86	86	86	86	86	86	86	86	86
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	13	40	9	8	8	6	26	26	22	42	42
g / C, Green / Cycle	0.17	0.16	0.46	0.10	0.09	0.09	0.07	0.30	0.30	0.26	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.13	0.04	0.22	0.07	0.03	0.07	0.02	0.19	0.24	0.20	0.25	0.25
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1583	3445	5074	1583	3445	3547	1739
c, Capacity [veh/h]	572	290	1293	350	170	144	239	1514	472	894	1733	850
d1, Uniform Delay [s]	34.64	32.02	16.08	37.63	36.94	38.27	38.37	26.41	27.88	29.59	15.04	15.08
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.52	0.41	0.27	2.67	1.28	6.82	0.82	0.47	3.03	1.40	0.23	0.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

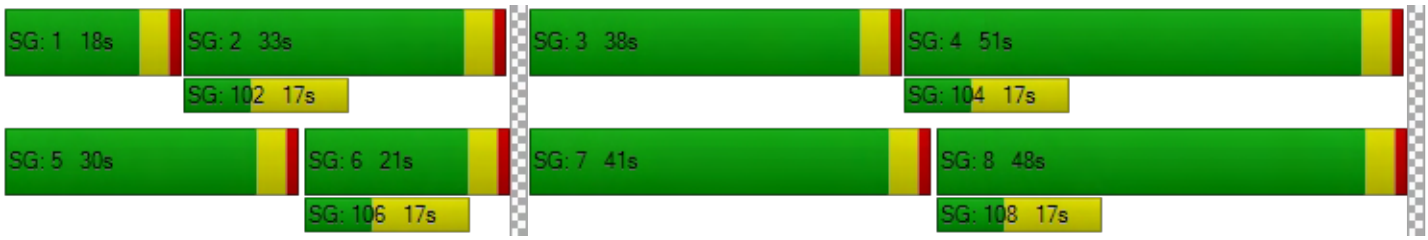
X, volume / capacity	0.79	0.23	0.47	0.71	0.36	0.73	0.34	0.65	0.79	0.76	0.51	0.51
d, Delay for Lane Group [s/veh]	37.17	32.43	16.35	40.30	38.22	45.09	39.19	26.88	30.92	30.98	15.27	15.56
Lane Group LOS	D	C	B	D	D	D	D	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.67	1.26	4.00	2.63	1.25	2.40	0.82	5.73	7.23	6.52	5.55	5.56
50th-Percentile Queue Length [ft/ln]	116.65	31.49	99.90	65.87	31.33	60.02	20.58	143.20	180.71	163.06	138.65	139.10
95th-Percentile Queue Length [veh/ln]	8.21	2.27	7.19	4.74	2.26	4.32	1.48	9.65	11.64	10.71	9.41	9.43
95th-Percentile Queue Length [ft/ln]	205.21	56.68	179.82	118.57	56.40	108.03	37.05	241.33	290.94	267.77	235.20	235.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.17	32.43	16.35	40.30	38.22	45.09	39.19	26.88	30.92	30.98	15.34	15.56
Movement LOS	D	C	B	D	D	D	D	C	C	C	B	B
d_A, Approach Delay [s/veh]	25.62			41.21			28.62			20.71		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]	25.81											
Intersection LOS	C											
Intersection V/C	0.815											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	318.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.661

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	376	293	268	141	316	236	141	332	182	196	399	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	376	293	268	141	316	236	141	332	182	196	399	160
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	77	71	37	83	62	37	87	48	52	105	42
Total Analysis Volume [veh/h]	396	308	282	148	333	248	148	349	192	206	420	168
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	396	590	298	333	330	331	349	371	794
Degree of Utilization, x	1.30	1.81	0.50	1.07	0.75	0.45	1.01	0.52	2.66

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	19.22	38.75	2.61	12.71	5.82	2.22	11.63	2.86	66.43
95th-Percentile Queue Length [ft]	480.41	968.71	65.24	317.87	145.39	55.48	290.79	71.50	1660.80
Approach Delay [s/veh]	316.97		68.40			53.47			781.30
Approach LOS	F		F			F			F
Intersection Delay [s/veh]	318.82								
Intersection LOS	F								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	104.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	89	929	0	0	669	25	8	0	89	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	929	0	0	669	25	8	0	89	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	244	0	0	176	7	2	0	23	0	0	0
Total Analysis Volume [veh/h]	94	978	0	0	704	26	8	0	94	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.00	0.00	0.01	0.00	0.16	0.00	0.22	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.61	0.00	0.00	10.10	0.00	0.00	89.00	63.12	15.48	104.90	63.00	16.85
Movement LOS	A	A	A	B	A	A	F	F	C	F	F	C
95th-Percentile Queue Length [veh/ln]	0.36	0.00	0.00	0.00	0.00	0.00	0.51	0.81	0.81	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	9.00	0.00	0.00	0.00	0.00	0.00	12.84	20.17	20.17	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.84			0.00			21.25			61.58		
Approach LOS	A			A			C			F		
d_I, Intersection Delay [s/veh]	1.61											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	18.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.646

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	78	91	94	304	34	34	40	475	22	102	432	355
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	91	94	304	34	34	40	475	22	102	432	355
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	24	25	80	9	9	11	125	6	27	114	93
Total Analysis Volume [veh/h]	82	96	99	320	36	36	42	500	23	107	455	374
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	23	0	11	29	0	27	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	49	49	49	49	49	49	49	49	49	49	49
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	7	8	8	3	12	12	5	15	15
g / C, Green / Cycle	0.14	0.14	0.14	0.17	0.17	0.06	0.26	0.26	0.11	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.06	0.11	0.11	0.02	0.14	0.14	0.06	0.13	0.24
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1750	1774	1863	1834	1774	3547	1583
c, Capacity [veh/h]	249	261	222	294	290	112	477	470	196	1077	481
d1, Uniform Delay [s]	18.94	19.04	19.27	19.14	19.14	21.96	15.74	15.75	20.57	13.59	15.51
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.77	0.86	1.40	2.66	2.70	2.06	1.00	1.02	2.34	0.26	2.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

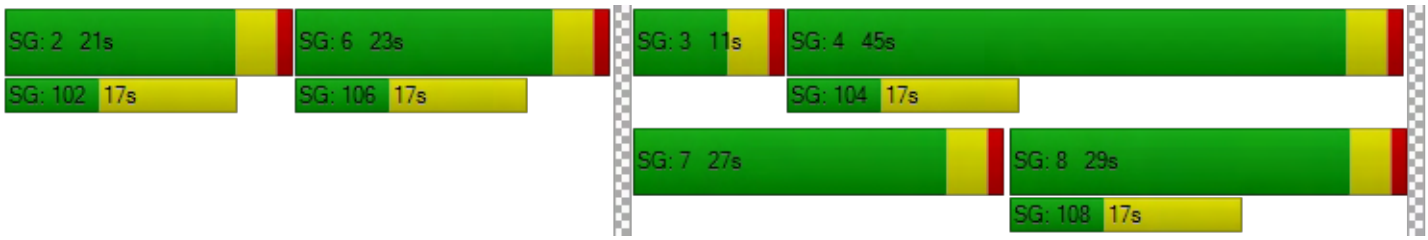
X, volume / capacity	0.33	0.37	0.45	0.67	0.67	0.37	0.55	0.55	0.54	0.42	0.78
d, Delay for Lane Group [s/veh]	19.71	19.91	20.67	21.81	21.85	24.03	16.74	16.77	22.91	13.85	18.27
Lane Group LOS	B	B	C	C	C	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.80	0.95	1.01	2.08	2.06	0.49	2.34	2.31	1.17	1.75	3.57
50th-Percentile Queue Length [ft/ln]	20.12	23.70	25.25	52.11	51.52	12.14	58.40	57.75	29.25	43.70	89.34
95th-Percentile Queue Length [veh/ln]	1.45	1.71	1.82	3.75	3.71	0.87	4.21	4.16	2.11	3.15	6.43
95th-Percentile Queue Length [ft/ln]	36.22	42.65	45.45	93.80	92.74	21.86	105.13	103.95	52.65	78.66	160.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.71	19.91	20.67	21.82	21.85	21.85	24.03	16.75	16.77	22.91	13.85	18.27
Movement LOS	B	B	C	C	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	20.12			21.83			17.30			16.65		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	18.20											
Intersection LOS	B											
Intersection V/C	0.646											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.638

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	461	0	568	0	1256	497	0	1330	478
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	461	0	568	0	1256	497	0	1330	478
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	1.0000	0.9500	1.0000	0.9500	0.9500	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	121	0	149	0	331	0	0	350	0
Total Analysis Volume [veh/h]	0	0	0	485	0	598	0	1322	0	0	1400	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	97	0	0	0	43	0	0	43	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		38	38	38	38	38	38	38
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		13	13	13	17	17	17	17
g / C, Green / Cycle		0.33	0.33	0.33	0.46	0.46	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate		0.20	0.22	0.23	0.20	0.00	0.28	0.00
s, saturation flow rate [veh/h]		1774	1644	1583	6765	1583	5074	1583
c, Capacity [veh/h]		593	550	530	3088	723	2316	723
d1, Uniform Delay [s]		10.64	10.86	10.98	7.03	0.00	7.81	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		1.01	1.34	1.55	0.09	0.00	0.26	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

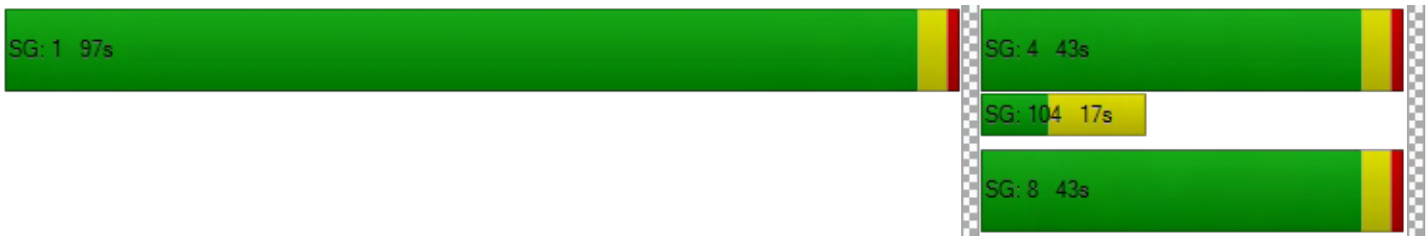
X, volume / capacity		0.61	0.66	0.68	0.43	0.00	0.60	0.00
d, Delay for Lane Group [s/veh]		11.65	12.20	12.53	7.12	0.00	8.06	0.00
Lane Group LOS		B	B	B	A	A	A	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		2.06	2.13	2.18	1.20	0.00	1.91	0.00
50th-Percentile Queue Length [ft/ln]		51.40	53.31	54.44	30.03	0.00	47.69	0.00
95th-Percentile Queue Length [veh/ln]		3.70	3.84	3.92	2.16	0.00	3.43	0.00
95th-Percentile Queue Length [ft/ln]		92.51	95.97	98.00	54.05	0.00	85.85	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	11.79	0.00	12.40	0.00	7.12	0.00	0.00	8.06	0.00
Movement LOS				B		B		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			12.13			7.12			8.06		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	8.89											
Intersection LOS	A											
Intersection V/C	0.638											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	6.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.767

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	381	0	100	0	600	272	0	789	494
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	381	0	100	0	600	272	0	789	494
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	1.0000	0.9500	1.0000	0.9500	0.9500	0.9470	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	100	0	26	0	158	72	0	208	130
Total Analysis Volume [veh/h]	0	0	0	401	0	105	0	632	286	0	831	520
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	28	0	0	0	72	0	0	72	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		29	29	29	29	29	29
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		7	7	14	14	14	14
g / C, Green / Cycle		0.24	0.24	0.48	0.48	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate		0.12	0.04	0.18	0.18	0.23	0.33
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		831	676	1702	760	1702	760
d1, Uniform Delay [s]		9.35	8.58	4.72	4.73	5.07	5.78
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.44	0.11	0.13	0.31	0.22	1.10
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

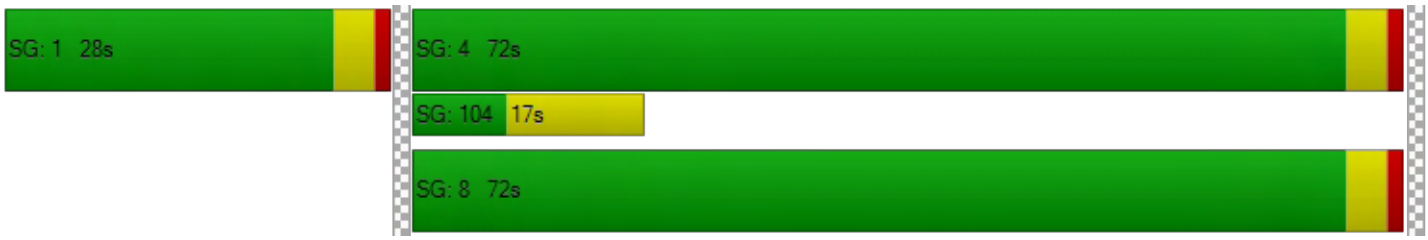
X, volume / capacity		0.48	0.16	0.37	0.38	0.49	0.68
d, Delay for Lane Group [s/veh]		9.78	8.69	4.86	5.04	5.28	6.88
Lane Group LOS		A	A	A	A	A	A
Critical Lane Group		Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		0.76	0.18	0.51	0.50	0.73	1.20
50th-Percentile Queue Length [ft/ln]		19.07	4.53	12.85	12.57	18.30	30.09
95th-Percentile Queue Length [veh/ln]		1.37	0.33	0.93	0.91	1.32	2.17
95th-Percentile Queue Length [ft/ln]		34.33	8.16	23.14	22.63	32.94	54.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.78	0.00	8.69	0.00	4.86	5.04	0.00	5.28	6.88
Movement LOS				A		A		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			9.56			4.91			5.90		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	6.24											
Intersection LOS	A											
Intersection V/C	0.767											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.653

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	479	0	661	0	0	0	0	1282	435	0	1329	360
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	479	0	661	0	0	0	0	1282	435	0	1329	360
Peak Hour Factor	0.9500	1.0000	0.9500	1.0000	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	126	0	174	0	0	0	0	337	0	0	350	0
Total Analysis Volume [veh/h]	504	0	696	0	0	0	0	1349	0	0	1399	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	98	0	0	0	0	0	0	42	0	0	42	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	39	39	39		39	39	39	39
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	14		17	17	17	17
g / C, Green / Cycle	0.36	0.36	0.36		0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.23	0.25	0.25		0.27	0.00	0.21	0.00
s, saturation flow rate [veh/h]	1774	1629	1583		5074	1583	6765	1583
c, Capacity [veh/h]	644	592	575		2191	684	2921	684
d1, Uniform Delay [s]	10.22	10.49	10.59		8.58	0.00	7.94	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.98	1.36	1.53		0.28	0.00	0.12	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.62	0.68	0.70		0.62	0.00	0.48	0.00
d, Delay for Lane Group [s/veh]	11.20	11.85	12.12		8.86	0.00	8.06	0.00
Lane Group LOS	B	B	B		A	A	A	A
Critical Lane Group	No	No	Yes		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.24	2.34	2.38		2.05	0.00	1.46	0.00
50th-Percentile Queue Length [ft/ln]	55.99	58.55	59.57		51.25	0.00	36.48	0.00
95th-Percentile Queue Length [veh/ln]	4.03	4.22	4.29		3.69	0.00	2.63	0.00
95th-Percentile Queue Length [ft/ln]	100.78	105.40	107.23		92.25	0.00	65.66	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.33	0.00	12.00	0.00	0.00	0.00	0.00	8.86	0.00	0.00	8.06	0.00
Movement LOS	B		B					A	A		A	A
d_A, Approach Delay [s/veh]	11.72			0.00			8.86			8.06		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	9.45											
Intersection LOS	A											
Intersection V/C	0.653											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	3.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.790

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	583	0	0	446	101	880	0	0	838	517
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	583	0	0	446	101	880	0	0	838	517
Peak Hour Factor	0.9650	1.0000	0.9500	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	153	0	0	117	27	232	0	0	221	136
Total Analysis Volume [veh/h]	0	0	614	0	0	469	106	926	0	0	882	544
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	18	100	0	0	82	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			25	25	25	25
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			4	21	13	13
g / C, Green / Cycle			0.15	0.84	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate			0.06	0.26	0.25	0.34
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			264	2970	1865	833
d1, Uniform Delay [s]			9.47	0.44	3.68	4.21
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			0.99	0.06	0.19	0.88
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.40	0.31	0.47	0.65
d, Delay for Lane Group [s/veh]			10.46	0.50	3.86	5.08
Lane Group LOS			B	A	A	A
Critical Lane Group			Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]			0.40	0.02	0.25	0.49
50th-Percentile Queue Length [ft/ln]			10.03	0.61	6.29	12.24
95th-Percentile Queue Length [veh/ln]			0.72	0.04	0.45	0.88
95th-Percentile Queue Length [ft/ln]			18.05	1.10	11.33	22.03

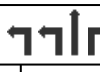
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	10.46	0.50	0.00	0.00	3.86	5.08
Movement LOS							B	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			1.52			4.33		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.15											
Intersection LOS	A											
Intersection V/C	0.790											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	42.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.698

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	565	154	246	13	97	103	152	1197	499	169	1021	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	565	154	246	13	97	103	152	1197	499	169	1021	29
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	149	41	65	3	26	27	40	315	131	44	269	8
Total Analysis Volume [veh/h]	595	162	259	14	102	108	160	1260	525	178	1075	31
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	40	34	0	27	21	0	13	65	0	14	66	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	60	60	3	36	36	8	52	52	9	53	53
g / C, Green / Cycle	0.19	0.43	0.43	0.02	0.25	0.25	0.06	0.37	0.37	0.07	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.17	0.09	0.16	0.00	0.06	0.06	0.05	0.25	0.33	0.05	0.21	0.21
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1837	1583	3445	5074	1583	3445	3547	1836
c, Capacity [veh/h]	668	794	675	74	466	402	209	1889	589	227	1339	693
d1, Uniform Delay [s]	55.05	25.29	27.61	67.37	41.54	41.65	64.85	36.74	41.32	64.47	34.17	34.17
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.36	0.58	1.65	1.21	1.20	1.47	5.75	0.41	4.89	5.81	0.35	0.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

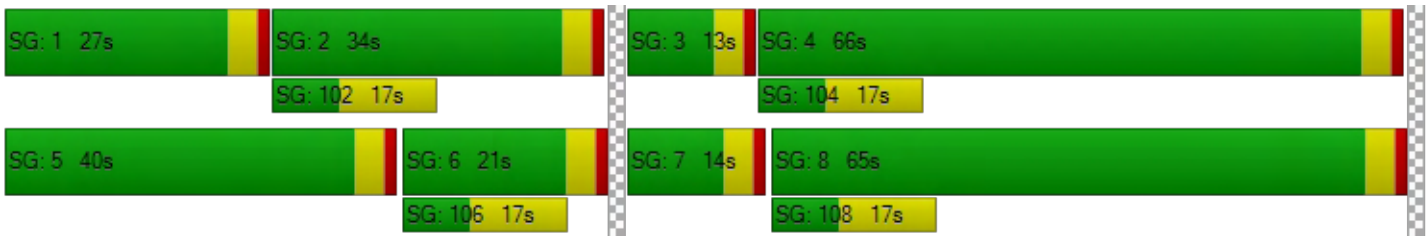
X, volume / capacity	0.89	0.20	0.38	0.19	0.24	0.25	0.77	0.67	0.89	0.78	0.54	0.54
d, Delay for Lane Group [s/veh]	59.41	25.87	29.26	68.58	42.74	43.12	70.60	37.15	46.21	70.27	34.52	34.84
Lane Group LOS	E	C	C	E	D	D	E	D	D	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	10.65	3.58	6.33	0.26	3.23	2.93	2.99	12.11	17.72	3.32	9.85	10.26
50th-Percentile Queue Length [ft/ln]	266.34	89.39	158.16	6.50	80.81	73.32	74.81	302.76	443.08	83.11	246.22	256.55
95th-Percentile Queue Length [veh/ln]	16.01	6.44	10.45	0.47	5.82	5.28	5.39	17.82	24.63	5.98	15.00	15.52
95th-Percentile Queue Length [ft/ln]	400.16	160.90	261.29	11.70	145.46	131.98	134.66	445.43	615.68	149.61	374.89	387.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.41	25.87	29.26	68.58	42.74	43.11	70.60	37.15	46.21	70.27	34.62	34.84
Movement LOS	E	C	C	E	D	D	E	D	D	E	C	C
d_A, Approach Delay [s/veh]	46.38			44.52			42.35			39.57		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.58											
Intersection LOS	D											
Intersection V/C	0.698											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	6.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.477

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			Yes			Yes	

Volumes

Name												
Base Volume Input [veh/h]	0	503	84	154	311	0	0	0	0	6	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	503	84	154	311	0	0	0	0	6	0	14
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	132	22	41	82	0	0	0	0	2	0	4
Total Analysis Volume [veh/h]	0	529	88	162	327	0	0	0	0	6	0	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	48	0	31	79	0	0	0	0	21	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	25	25	25	25		25	25	25
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	5	16		1	1	1
g / C, Green / Cycle	0.28	0.28	0.19	0.64		0.04	0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.15	0.06	0.09	0.09		0.00	0.00	0.00
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1583	1583
c, Capacity [veh/h]	997	445	345	2260		71	64	64
d1, Uniform Delay [s]	7.53	6.78	8.85	1.80		11.46	11.47	11.47
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.44	0.22	0.99	0.03		0.50	0.81	0.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

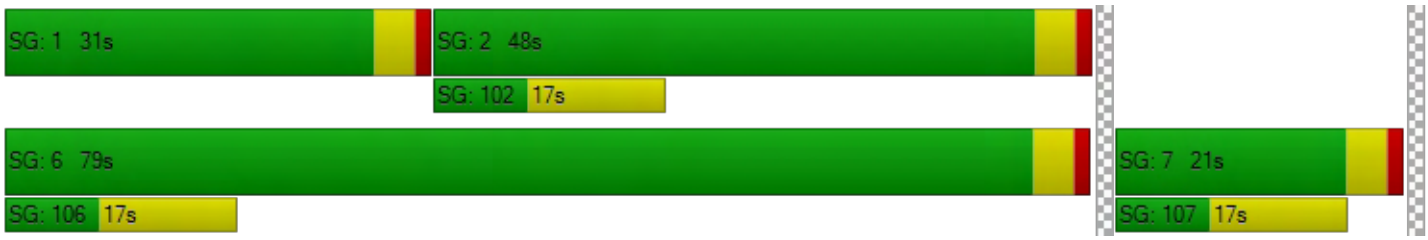
X, volume / capacity	0.53	0.20	0.47	0.14		0.08	0.12	0.12
d, Delay for Lane Group [s/veh]	7.97	7.00	9.84	1.83		11.96	12.29	12.29
Lane Group LOS	A	A	A	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.70	0.22	0.57	0.01		0.03	0.04	0.04
50th-Percentile Queue Length [ft/ln]	17.40	5.42	14.17	0.23		0.80	1.06	1.06
95th-Percentile Queue Length [veh/ln]	1.25	0.39	1.02	0.02		0.06	0.08	0.08
95th-Percentile Queue Length [ft/ln]	31.32	9.76	25.50	0.41		1.45	1.90	1.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	7.97	7.00	9.84	1.83	0.00	0.00	0.00	0.00	11.96	0.00	12.29
Movement LOS		A	A	A	A					B		B
d_A, Approach Delay [s/veh]	7.83			4.48			0.00			12.19		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	6.46											
Intersection LOS	A											
Intersection V/C	0.477											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.751

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	471	448	226	59	124	272	339	793	331	76	612	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	471	448	226	59	124	272	339	793	331	76	612	72
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	124	118	59	16	33	72	89	209	87	20	161	19
Total Analysis Volume [veh/h]	496	472	238	62	131	286	357	835	348	80	644	76
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	25	0	28	29	0	24	36	0	11	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	72	72	72	72	72	72	72	72	72	72	72	72
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	24	24	5	16	16	10	21	21	6	17	17
g / C, Green / Cycle	0.19	0.33	0.33	0.07	0.22	0.22	0.14	0.30	0.30	0.08	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.14	0.13	0.15	0.03	0.07	0.18	0.10	0.24	0.22	0.02	0.14	0.14
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1765
c, Capacity [veh/h]	644	1186	529	123	404	344	491	1049	468	268	820	408
d1, Uniform Delay [s]	27.79	18.38	18.75	32.27	23.71	26.91	29.51	23.33	22.86	31.31	24.57	24.61
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.99	0.22	0.60	3.15	0.46	5.25	2.08	1.42	2.35	0.61	0.66	1.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

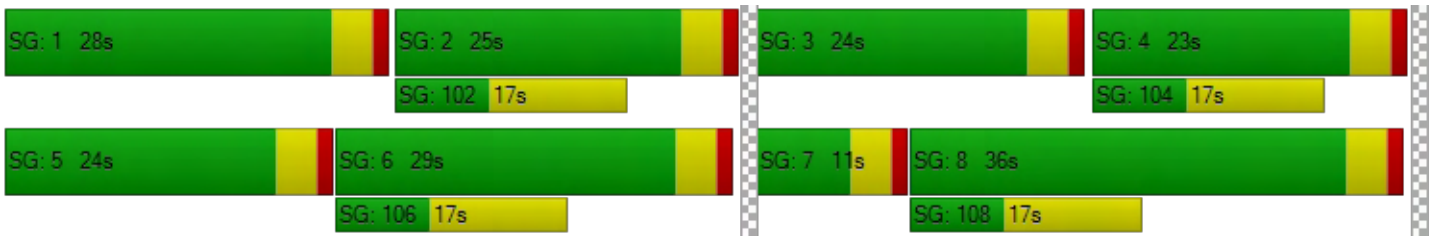
X, volume / capacity	0.77	0.40	0.45	0.50	0.32	0.83	0.73	0.80	0.74	0.30	0.58	0.59
d, Delay for Lane Group [s/veh]	29.78	18.60	19.35	35.43	24.17	32.15	31.59	24.75	25.21	31.92	25.24	25.98
Lane Group LOS	C	B	B	D	C	C	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.04	2.86	3.00	1.11	1.85	4.94	2.97	6.30	5.28	0.66	3.52	3.63
50th-Percentile Queue Length [ft/ln]	101.00	71.61	74.97	27.86	46.13	123.58	74.30	157.51	132.07	16.44	88.02	90.65
95th-Percentile Queue Length [veh/ln]	7.27	5.16	5.40	2.01	3.32	8.59	5.35	10.42	9.05	1.18	6.34	6.53
95th-Percentile Queue Length [ft/ln]	181.80	128.90	134.94	50.15	83.03	214.74	133.75	260.42	226.31	29.59	158.44	163.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.78	18.60	19.35	35.43	24.17	32.15	31.59	24.75	25.21	31.92	25.43	25.98
Movement LOS	C	B	B	D	C	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	23.34			30.39			26.44			26.13		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	25.92											
Intersection LOS	C											
Intersection V/C	0.751											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	148	377	236	19	331	272	265	704	137	192	534	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	377	236	19	331	272	265	704	137	192	534	48
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	99	62	5	87	72	70	185	36	51	141	13
Total Analysis Volume [veh/h]	156	397	248	20	348	286	279	741	144	202	562	51
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	21	21	11	21	21	29	44	0	24	39	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	58	58	58	58	58	58	58	58	58	58	58	58
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	13	26	2	9	24	11	17	17	9	15	15
g / C, Green / Cycle	0.11	0.23	0.46	0.03	0.15	0.42	0.19	0.30	0.30	0.15	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.05	0.11	0.16	0.01	0.10	0.18	0.08	0.24	0.24	0.06	0.11	0.03
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1759	3445	5074	1583
c, Capacity [veh/h]	385	826	722	60	549	659	660	563	532	529	1341	419
d1, Uniform Delay [s]	23.83	19.11	10.13	27.24	22.84	12.01	20.51	18.57	18.58	21.95	17.55	16.13
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.69	0.43	0.28	3.24	1.21	0.45	0.43	2.80	2.99	0.45	0.21	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

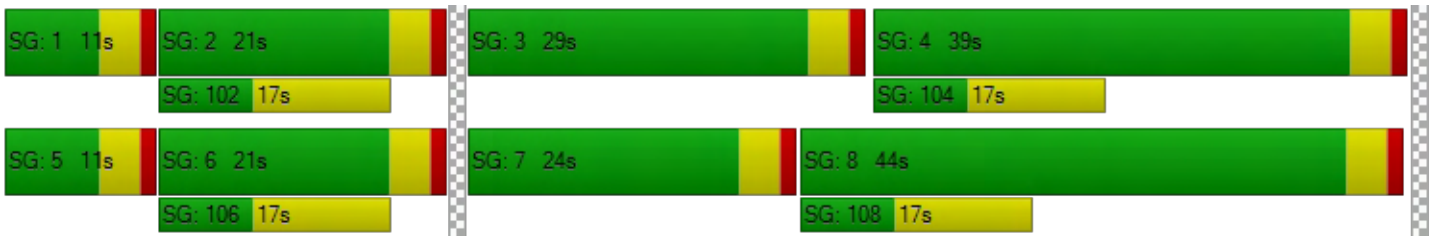
X, volume / capacity	0.41	0.48	0.34	0.33	0.63	0.43	0.42	0.81	0.81	0.38	0.42	0.12
d, Delay for Lane Group [s/veh]	24.52	19.54	10.41	30.48	24.05	12.46	20.94	21.36	21.57	22.41	17.76	16.26
Lane Group LOS	C	B	B	C	C	B	C	C	C	C	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.96	2.14	1.77	0.31	2.14	2.33	1.56	5.41	5.15	1.18	1.90	0.48
50th-Percentile Queue Length [ft/ln]	24.01	53.60	44.13	7.69	53.54	58.37	39.07	135.29	128.78	29.39	47.40	12.07
95th-Percentile Queue Length [veh/ln]	1.73	3.86	3.18	0.55	3.85	4.20	2.81	9.23	8.87	2.12	3.41	0.87
95th-Percentile Queue Length [ft/ln]	43.22	96.48	79.44	13.85	96.37	105.07	70.33	230.66	221.84	52.90	85.32	21.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.52	19.54	10.41	30.48	24.05	12.46	20.94	21.44	21.57	22.41	17.76	16.26
Movement LOS	C	B	B	C	C	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	17.68			19.18			21.34			18.82		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	19.48											
Intersection LOS	B											
Intersection V/C	0.677											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 24: Hanover Ln (NS) at Holland Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	178.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.709

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	90	3	108	68	4	124	51	564	70	154	603	117
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	3	108	68	4	124	51	564	70	154	603	117
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	1	28	18	1	33	13	148	18	41	159	31
Total Analysis Volume [veh/h]	95	3	114	72	4	131	54	594	74	162	635	123
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	432	434	444	594	523	412	758
Degree of Utilization, x	0.49	0.48	0.12	1.25	0.14	0.39	1.71

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.64	2.51	0.41	24.19	0.49	1.83	45.54
95th-Percentile Queue Length [ft]	65.99	62.73	10.28	604.78	12.27	45.87	1138.47
Approach Delay [s/veh]	19.11	18.60	128.58			289.88	
Approach LOS	C	C	F			F	
Intersection Delay [s/veh]	178.27						
Intersection LOS	F						

EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PLUS CUMULATIVE (WITH HOLLAND ROAD OVERPASS)

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME - Holland.vistro

Scenario 7 Existing Plus Ambient Growth Plus Project Plus Cumulative Morning Peak Hour - Holland Overpass

Report File: C:\...\AMEAPC W.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	WB Right	0.711	16.0	C
5	Sherman Rd (NS) at MFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	8.9	A
6	Sherman Rd (NS) at SFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	8.9	A
7	MFR Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Left	0.020	17.8	C
8	Commercial Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Right	0.013	10.9	B
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Left	0.742	20.5	C
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	WB Thru	2.422	247.5	F
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	WB Left	0.000	10,000.0	F
12	Haun Rd (NS) at North Project Access (EW)	Signalized	HCM 2010	EB Left	0.509	3.3	A
13	Haun Rd (NS) at Central Project Access (EW)	Signalized	HCM 2010	EB Left	0.496	6.8	A
14	Haun Rd (NS) at South Project Access (EW)	Two-way stop	HCM 2010	EB Right	0.015	14.2	B
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.728	22.4	C
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.583	7.5	A
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.780	6.4	A
18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.520	7.5	A
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.762	3.2	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	WB Left	0.589	47.4	D

21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	SB Left	0.245	4.4	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.746	23.0	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.718	23.5	C
24	Hanover Ln (NS) at Holland Rd (EW)	All-way stop	HCM 2010	WB Thru	1.937	216.8	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	16.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	0	301	1	1	2	2	0	0	6	434
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	35	15	53	13	0	0	0	0	5	0	37
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	38	15	354	14	1	2	2	0	5	6	471
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	10	4	93	4	0	1	1	0	1	2	124
Total Analysis Volume [veh/h]	0	40	16	373	15	1	2	2	0	5	6	496
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	563	553	557	536	591	697
Degree of Utilization, x	0.10	0.35	0.35	0.01	0.02	0.71

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.33	1.57	1.56	0.02	0.06	5.98
95th-Percentile Queue Length [ft]	8.25	39.33	38.94	0.56	1.42	149.42
Approach Delay [s/veh]	10.10	12.65		9.76	19.32	
Approach LOS	B	B		A	C	
Intersection Delay [s/veh]	16.02					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Sherman Rd (NS) at MFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	3	0	0	1	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	40	0	4	14	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	4	15	0	10
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	1	4	0	3
Total Analysis Volume [veh/h]	45	0	4	16	0	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.31	0.00	8.90	8.55
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.19	0.19	0.81	0.81
d_A, Approach Delay [s/veh]	0.00		1.46		8.55	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.62					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Sherman Rd (NS) at SFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	3	0	0	1	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	0	9	5	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	0	9	6	0	5
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	0	2	2	0	1
Total Analysis Volume [veh/h]	40	0	9	6	0	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.31	0.00	8.86	8.51
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.43	0.43	0.37	0.37
d_A, Approach Delay [s/veh]	0.00		4.38		8.51	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.80					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: MFR Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	301	0	0	434
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	51	66	2	15	36
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	51	367	2	15	470
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	13	97	1	4	124
Total Analysis Volume [veh/h]	6	54	386	2	16	495
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.08	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	17.76	11.14	0.00	0.00	8.12	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.34	0.34	0.00	0.00	0.04	0.02
95th-Percentile Queue Length [ft/ln]	8.46	8.46	0.00	0.00	0.97	0.49
d_A, Approach Delay [s/veh]	11.80		0.00		0.25	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.87					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Commercial Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	301	0	0	434
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	109	8	0	51
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	8	410	8	0	485
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	108	2	0	128
Total Analysis Volume [veh/h]	0	8	432	8	0	511
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	10.88	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.04	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.98	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.88		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.09					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.742

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	170	45	300	94	44	30	99	1159	238	656	810	233
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	0	69	0	0	0	0	0	16	44	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	45	369	94	44	30	99	1159	254	700	810	233
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	12	97	25	12	8	26	305	67	184	213	61
Total Analysis Volume [veh/h]	189	47	388	99	46	32	104	1220	267	737	853	245
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	25	25	12	21	0	53	54	0	49	50	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	73	73	73	73	73	73	73	73	73	73	73	73
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	31	6	6	6	6	24	24	20	38	38
g / C, Green / Cycle	0.09	0.10	0.43	0.08	0.08	0.08	0.08	0.33	0.33	0.28	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.05	0.03	0.14	0.03	0.02	0.02	0.03	0.24	0.17	0.21	0.21	0.21
s, saturation flow rate [veh/h]	3445	1863	2803	3445	1863	1622	3445	5074	1583	3445	3547	1659
c, Capacity [veh/h]	322	178	1192	286	158	138	290	1665	519	949	1842	861
d1, Uniform Delay [s]	31.88	30.78	14.05	31.75	31.38	31.45	31.72	21.80	19.91	24.49	10.73	10.75
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.70	0.78	0.16	0.72	0.83	1.08	0.75	0.64	0.79	1.41	0.14	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

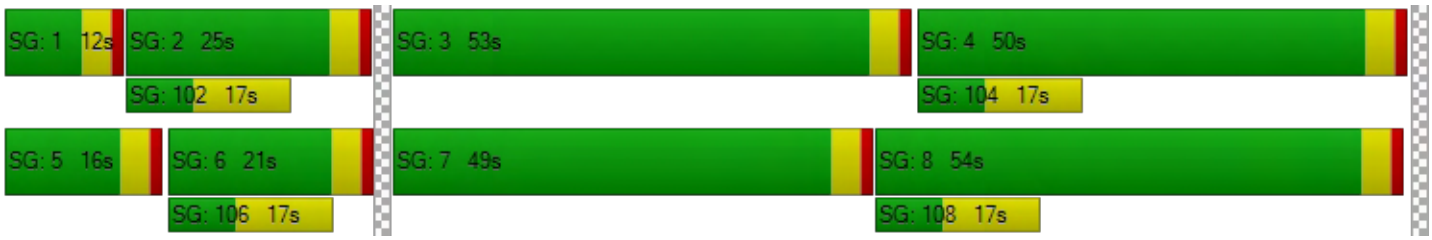
X, volume / capacity	0.59	0.26	0.33	0.35	0.25	0.28	0.36	0.73	0.51	0.78	0.41	0.41
d, Delay for Lane Group [s/veh]	33.58	31.57	14.21	32.47	32.21	32.52	32.47	22.43	20.70	25.90	10.87	11.06
Lane Group LOS	C	C	B	C	C	C	C	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.63	0.79	2.01	0.83	0.68	0.65	0.87	5.88	3.58	5.75	3.30	3.16
50th-Percentile Queue Length [ft/ln]	40.80	19.68	50.24	20.82	16.96	16.36	21.87	146.90	89.49	143.68	82.50	78.88
95th-Percentile Queue Length [veh/ln]	2.94	1.42	3.62	1.50	1.22	1.18	1.57	9.85	6.44	9.68	5.94	5.68
95th-Percentile Queue Length [ft/ln]	73.43	35.42	90.43	37.47	30.54	29.45	39.36	246.28	161.08	241.97	148.51	141.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.58	31.57	14.21	32.47	32.25	32.52	32.47	22.43	20.70	25.90	10.90	11.06
Movement LOS	C	C	B	C	C	C	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	21.39			32.43			22.80			16.95		
Approach LOS	C			C			C			B		
d_I, Intersection Delay [s/veh]	20.45											
Intersection LOS	C											
Intersection V/C	0.742											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	247.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.422

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	266	127	162	132	322	201	144	314	208	278	336	147
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	87	24	0	63	0	0	0	0	25	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	266	214	186	132	385	201	144	314	208	303	336	147
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	56	49	35	101	53	38	83	55	80	88	39
Total Analysis Volume [veh/h]	280	225	196	139	405	212	152	331	219	319	354	155
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	324	421	312	405	346	343	360	386	828
Degree of Utilization, x	0.86	1.21	0.45	1.25	0.61	0.44	0.92	0.57	2.42

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	7.86	18.00	2.19	18.29	3.86	2.18	9.47	3.38	65.51
95th-Percentile Queue Length [ft]	196.61	450.09	54.80	457.26	96.48	54.59	236.82	84.52	1637.78
Approach Delay [s/veh]	112.46		100.76			40.88			671.01
Approach LOS	F		F			E			F
Intersection Delay [s/veh]	247.51								
Intersection LOS	F								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	375	539	0	0	749	59	16	0	285	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	38	69	0	0	89	13	50	0	67	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	413	608	0	0	838	72	66	0	352	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	109	160	0	0	221	19	17	0	93	0	0	0
Total Analysis Volume [veh/h]	435	640	0	0	882	76	69	0	371	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.61	0.01	0.00	0.00	0.01	0.00	5.72	0.00	1.07	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.42	0.00	0.00	8.81	0.00	0.00	2741.90	365.20	105.09	10000.0	307.72	12.57
Movement LOS	C	A	A	A	A	A	F	F	F	F	F	B
95th-Percentile Queue Length [veh/ln]	4.13	0.00	0.00	0.00	0.00	0.00	9.77	13.51	13.51	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	103.26	0.00	0.00	0.00	0.00	0.00	244.16	337.70	337.70	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	7.05			0.00			518.59			3440.10		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	95.33											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: Haun Rd (NS) at North Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	3.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.509

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	80	104	51	27	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	800	747	51	27	11
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	211	197	13	7	3
Total Analysis Volume [veh/h]	17	842	786	54	28	12
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	109	109	0	11	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	24	0	25	0
Rest In Walk		Yes	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	107	107	107	107	5
g / C, Green / Cycle	0.89	0.89	0.89	0.89	0.04
(v / s)_i Volume / Saturation Flow Rate	0.03	0.45	0.23	0.23	0.02
s, saturation flow rate [veh/h]	652	1863	1863	1821	1712
c, Capacity [veh/h]	606	1657	1657	1620	75
d1, Uniform Delay [s]	1.63	1.34	0.95	0.96	56.20
k, delay calibration	0.50	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.09	1.12	0.37	0.39	5.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.51	0.25	0.26	0.53
d, Delay for Lane Group [s/veh]	1.72	2.46	1.32	1.34	61.88
Lane Group LOS	A	A	A	A	E
Critical Lane Group	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.06	1.73	0.60	0.61	1.31
50th-Percentile Queue Length [ft/ln]	1.46	43.16	14.93	15.14	32.68
95th-Percentile Queue Length [veh/ln]	0.11	3.11	1.08	1.09	2.35
95th-Percentile Queue Length [ft/ln]	2.63	77.68	26.88	27.24	58.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	1.72	2.46	1.33	1.34	61.88	61.88
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	2.44		1.33		61.88	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	3.27					
Intersection LOS	A					
Intersection V/C	0.509					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Haun Rd (NS) at Central Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	6.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.496

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	54	23	35	80	73	56
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	743	678	80	73	56
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	196	178	21	19	15
Total Analysis Volume [veh/h]	57	782	714	84	77	59
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	30	30	0	90	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	19	19	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	105	105	105	105	7	7
g / C, Green / Cycle	0.87	0.87	0.87	0.87	0.06	0.06
(v / s)_i Volume / Saturation Flow Rate	0.08	0.42	0.21	0.22	0.04	0.04
s, saturation flow rate [veh/h]	678	1863	1863	1796	1774	1583
c, Capacity [veh/h]	613	1623	1623	1565	110	99
d1, Uniform Delay [s]	2.24	1.72	1.27	1.28	55.21	54.86
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	1.03	0.36	0.39	7.68	5.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

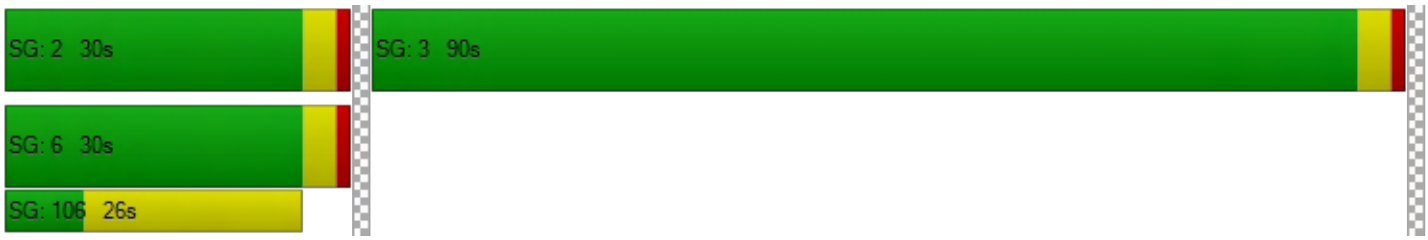
X, volume / capacity	0.09	0.48	0.25	0.26	0.70	0.60
d, Delay for Lane Group [s/veh]	2.55	2.75	1.63	1.68	62.89	60.56
Lane Group LOS	A	A	A	A	E	E
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.25	2.35	0.87	0.89	2.52	1.90
50th-Percentile Queue Length [ft/ln]	6.37	58.72	21.83	22.22	63.05	47.42
95th-Percentile Queue Length [veh/ln]	0.46	4.23	1.57	1.60	4.54	3.41
95th-Percentile Queue Length [ft/ln]	11.47	105.70	39.30	39.99	113.49	85.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.55	2.75	1.65	1.68	62.89	60.56
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	2.73		1.65		61.88	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	6.78					
Intersection LOS	A					
Intersection V/C	0.496					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Haun Rd (NS) at South Project Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	14.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	667	595	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.08	1.08	1.08	1.00	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	77	91	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	797	734	0	0	6
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	210	193	0	0	2
Total Analysis Volume [veh/h]	0	839	773	0	0	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	14.16
Movement LOS		A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.05
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	1.14
d_A, Approach Delay [s/veh]	0.00		0.00		14.16	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.05					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	26	93	34	490	63	38	78	372	16	75	334	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	76	0	13	12	0	0	0	0	56
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	93	34	566	63	51	90	372	16	75	334	337
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	24	9	149	17	13	24	98	4	20	88	89
Total Analysis Volume [veh/h]	27	98	36	596	66	54	95	392	17	79	352	355
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	32	0	12	32	0	15	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	7	15	15	6	17	17	5	16	16
g / C, Green / Cycle	0.11	0.11	0.11	0.26	0.26	0.09	0.28	0.28	0.09	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.02	0.20	0.20	0.05	0.11	0.11	0.04	0.10	0.22
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1757	1774	1863	1836	1774	3547	1583
c, Capacity [veh/h]	193	203	172	454	450	166	527	520	153	978	437
d1, Uniform Delay [s]	24.24	25.20	24.43	20.87	20.88	26.11	17.37	17.38	26.28	17.51	20.33
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	1.78	0.59	3.15	3.20	3.11	0.47	0.48	2.70	0.22	3.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

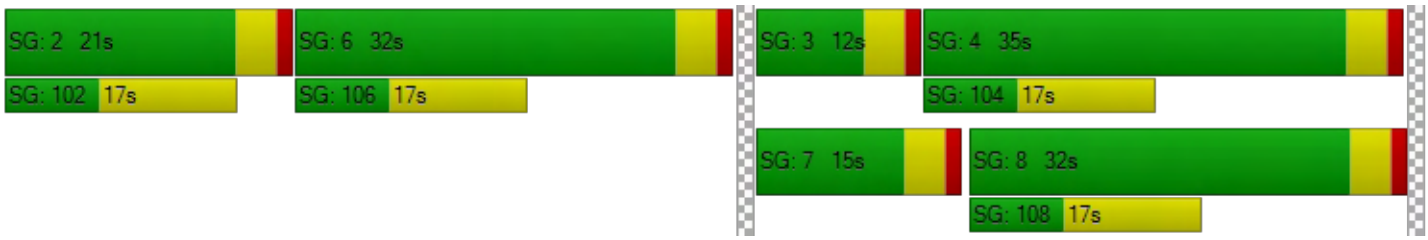
X, volume / capacity	0.14	0.48	0.21	0.79	0.79	0.57	0.39	0.39	0.52	0.36	0.81
d, Delay for Lane Group [s/veh]	24.57	26.97	25.02	24.02	24.09	29.23	17.84	17.86	28.98	17.73	24.04
Lane Group LOS	C	C	C	C	C	C	B	B	C	B	C
Critical Lane Group	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.34	1.34	0.47	4.68	4.65	1.37	2.16	2.14	1.13	1.82	4.65
50th-Percentile Queue Length [ft/ln]	8.62	33.39	11.71	117.02	116.37	34.21	54.06	53.51	28.34	45.59	116.24
95th-Percentile Queue Length [veh/ln]	0.62	2.40	0.84	8.23	8.19	2.46	3.89	3.85	2.04	3.28	8.19
95th-Percentile Queue Length [ft/ln]	15.52	60.10	21.08	205.72	204.83	61.57	97.32	96.32	51.01	82.06	204.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.57	26.97	25.02	24.05	24.09	24.09	29.23	17.85	17.86	28.98	17.73	24.04
Movement LOS	C	C	C	C	C	C	C	B	B	C	B	C
d_A, Approach Delay [s/veh]	26.13			24.05			20.00			21.71		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	22.41											
Intersection LOS	C											
Intersection V/C	0.728											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	7.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.583

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	291	0	527	0	970	584	0	1171	602
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	33	0	69	0	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	291	0	560	0	1039	584	0	1182	602
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	1.0000	0.9500	1.0000	0.9500	0.9500	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	77	0	147	0	273	0	0	311	0
Total Analysis Volume [veh/h]	0	0	0	306	0	589	0	1094	0	0	1244	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	16	0	0	0	124	0	0	124	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		31	31	31	31	31	31	31
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		9	9	9	13	13	13	13
g / C, Green / Cycle		0.31	0.31	0.31	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate		0.17	0.19	0.19	0.16	0.00	0.25	0.00
s, saturation flow rate [veh/h]		1774	1584	1583	6765	1583	5074	1583
c, Capacity [veh/h]		549	490	490	2921	684	2191	684
d1, Uniform Delay [s]		8.91	9.06	9.06	5.96	0.00	6.62	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.88	1.19	1.19	0.08	0.00	0.23	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.56	0.60	0.60	0.37	0.00	0.57	0.00
d, Delay for Lane Group [s/veh]		9.79	10.25	10.25	6.04	0.00	6.85	0.00
Lane Group LOS		A	B	B	A	A	A	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		1.25	1.26	1.26	0.66	0.00	1.13	0.00
50th-Percentile Queue Length [ft/ln]		31.25	31.39	31.39	16.52	0.00	28.32	0.00
95th-Percentile Queue Length [veh/ln]		2.25	2.26	2.26	1.19	0.00	2.04	0.00
95th-Percentile Queue Length [ft/ln]		56.25	56.50	56.51	29.74	0.00	50.97	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.80	0.00	10.25	0.00	6.04	0.00	0.00	6.85	0.00
Movement LOS				A		B		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			10.09			6.04			6.85		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	7.47											
Intersection LOS	A											
Intersection V/C	0.583											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.780

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	363	0	54	0	471	422	0	637	456
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	15	61	0	56	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	363	0	54	0	486	483	0	693	456
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	1.0000	0.9500	1.0000	0.9500	0.9500	0.9250	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	96	0	14	0	128	127	0	182	120
Total Analysis Volume [veh/h]	0	0	0	382	0	57	0	512	508	0	729	480
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	36	0	0	36	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		27	27	27	27	27	27
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		7	7	12	12	12	12
g / C, Green / Cycle		0.25	0.25	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate		0.11	0.02	0.14	0.32	0.21	0.30
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		867	705	1601	715	1601	715
d1, Uniform Delay [s]		8.49	7.70	4.74	5.97	5.10	5.82
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.35	0.05	0.11	1.32	0.20	1.10
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.44	0.08	0.32	0.71	0.46	0.67
d, Delay for Lane Group [s/veh]		8.84	7.75	4.85	7.29	5.31	6.92
Lane Group LOS		A	A	A	A	A	A
Critical Lane Group		Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]		0.62	0.08	0.39	1.17	0.60	1.06
50th-Percentile Queue Length [ft/ln]		15.56	2.08	9.73	29.30	15.08	26.42
95th-Percentile Queue Length [veh/ln]		1.12	0.15	0.70	2.11	1.09	1.90
95th-Percentile Queue Length [ft/ln]		28.01	3.75	17.52	52.75	27.14	47.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.84	0.00	7.75	0.00	4.85	7.29	0.00	5.31	6.92
Movement LOS				A		A		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			8.70			6.07			5.95		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	6.45											
Intersection LOS	A											
Intersection V/C	0.780											

Sequence

Ring 1	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	7.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.520

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	328	0	480	0	0	0	0	930	331	0	1446	372
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	15	54	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	328	0	480	0	0	0	0	945	385	0	1457	372
Peak Hour Factor	0.9500	1.0000	0.9500	1.0000	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	86	0	126	0	0	0	0	249	0	0	383	0
Total Analysis Volume [veh/h]	345	0	505	0	0	0	0	995	0	0	1534	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	104	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	35	35	35		35	35	35	35
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10		17	17	17	17
g / C, Green / Cycle	0.28	0.28	0.28		0.49	0.49	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.16	0.17	0.18		0.20	0.00	0.23	0.00
s, saturation flow rate [veh/h]	1774	1616	1583		5074	1583	6765	1583
c, Capacity [veh/h]	497	453	444		2503	781	3337	781
d1, Uniform Delay [s]	10.96	11.07	11.09		5.64	0.00	5.87	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.11	1.38	1.45		0.10	0.00	0.10	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.62	0.63		0.40	0.00	0.46	0.00
d, Delay for Lane Group [s/veh]	12.07	12.45	12.54		5.74	0.00	5.96	0.00
Lane Group LOS	B	B	B		A	A	A	A
Critical Lane Group	No	No	Yes		No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.61	1.58	1.58		0.88	0.00	1.05	0.00
50th-Percentile Queue Length [ft/ln]	40.22	39.54	39.39		21.92	0.00	26.21	0.00
95th-Percentile Queue Length [veh/ln]	2.90	2.85	2.84		1.58	0.00	1.89	0.00
95th-Percentile Queue Length [ft/ln]	72.40	71.17	70.91		39.46	0.00	47.18	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.13	0.00	12.50	0.00	0.00	0.00	0.00	5.74	0.00	0.00	5.96	0.00
Movement LOS	B		B					A	A		A	A
d_A, Approach Delay [s/veh]	12.35			0.00			5.74			5.96		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	7.51											
Intersection LOS	A											
Intersection V/C	0.520											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	3.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.762

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	370	0	0	306	96	739	0	0	787	436
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	41	0	15	0	0	15	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	370	0	0	347	96	754	0	0	802	436
Peak Hour Factor	0.9380	1.0000	0.9500	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	97	0	0	91	25	198	0	0	211	115
Total Analysis Volume [veh/h]	0	0	389	0	0	365	101	794	0	0	844	459
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	19	100	0	0	81	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			22	22	22	22
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			3	18	11	11
g / C, Green / Cycle			0.15	0.82	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate			0.06	0.22	0.24	0.29
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			265	2905	1733	774
d1, Uniform Delay [s]			8.48	0.47	3.79	4.07
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			0.90	0.05	0.21	0.73
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.38	0.27	0.49	0.59
d, Delay for Lane Group [s/veh]			9.38	0.52	4.01	4.80
Lane Group LOS			A	A	A	A
Critical Lane Group			Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]			0.32	0.02	0.19	0.32
50th-Percentile Queue Length [ft/ln]			7.88	0.51	4.70	7.91
95th-Percentile Queue Length [veh/ln]			0.57	0.04	0.34	0.57
95th-Percentile Queue Length [ft/ln]			14.19	0.91	8.46	14.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	9.38	0.52	0.00	0.00	4.01	4.80
Movement LOS							A	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			1.52			4.29		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.16											
Intersection LOS	A											
Intersection V/C	0.762											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	47.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.589

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	447	46	102	77	106	103	99	901	412	143	1267	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	3	2	12	1	0	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	449	46	102	77	106	106	101	913	413	143	1273	41
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	118	12	27	20	28	28	27	240	109	38	335	11
Total Analysis Volume [veh/h]	473	48	107	81	112	112	106	961	435	151	1340	43
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	33	21	0	33	21	0	12	74	0	12	74	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	66	66	7	51	51	7	44	44	8	45	45
g / C, Green / Cycle	0.16	0.47	0.47	0.05	0.36	0.36	0.05	0.31	0.31	0.06	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.14	0.03	0.07	0.02	0.06	0.07	0.03	0.19	0.27	0.04	0.26	0.26
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1843	1583	3445	5074	1583	3445	3547	1833
c, Capacity [veh/h]	539	873	742	166	664	570	171	1581	493	198	1133	586
d1, Uniform Delay [s]	57.81	20.32	21.24	65.01	30.67	30.71	65.32	40.97	45.79	65.12	43.68	43.68
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.76	0.12	0.41	2.20	0.59	0.71	3.65	0.38	5.33	5.98	1.39	2.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.06	0.14	0.49	0.18	0.18	0.62	0.61	0.88	0.76	0.80	0.80
d, Delay for Lane Group [s/veh]	62.57	20.44	21.64	67.21	31.26	31.42	68.96	41.35	51.12	71.10	45.07	46.34
Lane Group LOS	E	C	C	E	C	C	E	D	D	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.57	0.90	2.12	1.47	2.91	2.57	1.95	9.51	15.08	2.83	14.70	15.41
50th-Percentile Queue Length [ft/ln]	214.22	22.62	53.09	36.69	72.86	64.34	48.79	237.67	376.90	70.83	367.62	385.20
95th-Percentile Queue Length [veh/ln]	13.37	1.63	3.82	2.64	5.25	4.63	3.51	14.56	21.44	5.10	20.99	21.85
95th-Percentile Queue Length [ft/ln]	334.23	40.71	95.57	66.04	131.16	115.81	87.82	364.09	536.09	127.50	524.85	546.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.57	20.44	21.64	67.21	31.26	31.42	68.96	41.35	51.12	71.10	45.48	46.34
Movement LOS	E	C	C	E	C	C	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	52.38			40.86			46.13			48.02		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	47.45											
Intersection LOS	D											
Intersection V/C	0.589											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	4.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.245

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	248	27	25	278	0	0	0	0	16	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	3	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	252	27	25	281	0	0	0	0	16	0	11
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	66	7	7	74	0	0	0	0	4	0	3
Total Analysis Volume [veh/h]	0	265	28	26	296	0	0	0	0	17	0	12
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	63	0	16	79	0	0	0	0	21	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	20	20	20	20		20	20	20
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	1	11		1	1	1
g / C, Green / Cycle	0.29	0.29	0.05	0.54		0.05	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.07	0.02	0.01	0.08		0.01	0.01	0.01
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1722	1583
c, Capacity [veh/h]	1022	456	88	1916		98	95	87
d1, Uniform Delay [s]	5.41	5.10	9.06	2.28		8.87	8.88	8.88
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.13	0.06	1.82	0.04		0.44	0.47	0.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.06	0.29	0.15		0.10	0.10	0.11
d, Delay for Lane Group [s/veh]	5.55	5.16	10.88	2.32		9.32	9.34	9.43
Lane Group LOS	A	A	B	A		A	A	A
Critical Lane Group	Yes	No	Yes	No		No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.16	0.04	0.11	0.01		0.03	0.03	0.04
50th-Percentile Queue Length [ft/ln]	4.09	0.90	2.64	0.25		0.86	0.86	0.88
95th-Percentile Queue Length [veh/ln]	0.29	0.06	0.19	0.02		0.06	0.06	0.06
95th-Percentile Queue Length [ft/ln]	7.36	1.61	4.76	0.44		1.54	1.55	1.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	5.55	5.16	10.88	2.32	0.00	0.00	0.00	0.00	9.33	0.00	9.41
Movement LOS		A	A	B	A					A		A
d_A, Approach Delay [s/veh]	5.51			3.01			0.00			9.36		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.43											
Intersection LOS	A											
Intersection V/C	0.245											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	322	130	57	41	183	329	229	545	334	37	573	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	0	0	10	5	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	130	57	41	183	329	229	555	339	37	584	52
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	34	15	11	48	87	60	146	89	10	154	14
Total Analysis Volume [veh/h]	343	137	60	43	193	346	241	584	357	39	615	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	28	0	27	37	0	24	34	0	11	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	62	62	62	62	62	62	62	62	62	62	62	62
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	22	22	4	16	16	7	18	18	3	14	14
g / C, Green / Cycle	0.14	0.35	0.35	0.06	0.26	0.26	0.11	0.28	0.28	0.06	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.10	0.04	0.04	0.02	0.10	0.22	0.07	0.16	0.23	0.01	0.13	0.13
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1786
c, Capacity [veh/h]	494	1231	549	105	490	416	380	1003	448	191	808	407
d1, Uniform Delay [s]	25.52	13.89	13.88	28.40	18.98	21.77	26.65	19.28	20.80	28.26	21.34	21.37
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.76	0.04	0.09	2.53	0.52	4.35	1.76	0.54	3.30	0.52	0.58	1.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

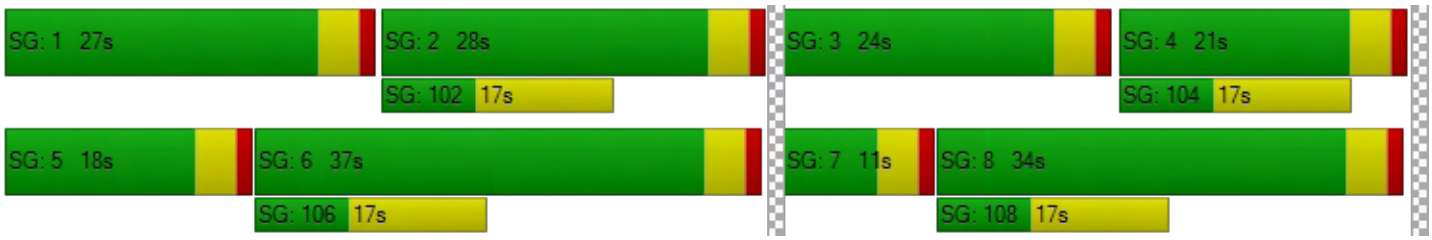
X, volume / capacity	0.69	0.11	0.11	0.41	0.39	0.83	0.63	0.58	0.80	0.20	0.55	0.56
d, Delay for Lane Group [s/veh]	27.28	13.93	13.96	30.93	19.50	26.13	28.41	19.82	24.10	28.78	21.92	22.55
Lane Group LOS	C	B	B	C	B	C	C	B	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.40	0.61	0.54	0.67	2.20	4.89	1.72	3.42	4.82	0.28	2.74	2.86
50th-Percentile Queue Length [ft/ln]	60.08	15.22	13.51	16.66	55.10	122.29	42.97	85.47	120.48	7.01	68.38	71.42
95th-Percentile Queue Length [veh/ln]	4.33	1.10	0.97	1.20	3.97	8.52	3.09	6.15	8.42	0.50	4.92	5.14
95th-Percentile Queue Length [ft/ln]	108.14	27.40	24.32	29.99	99.19	212.97	77.35	153.85	210.49	12.61	123.09	128.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.28	13.93	13.96	30.93	19.50	26.13	28.41	19.82	24.10	28.78	22.10	22.55
Movement LOS	C	B	B	C	B	C	C	B	C	C	C	C
d_A, Approach Delay [s/veh]	22.41			24.28			22.86			22.50		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	22.97											
Intersection LOS	C											
Intersection V/C	0.746											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.718

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	161	299	215	67	587	322	200	627	127	330	842	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	9	0	2	2	1	10	0	3	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	161	300	224	67	589	324	201	637	127	333	846	43
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	79	59	18	155	85	53	168	33	88	223	11
Total Analysis Volume [veh/h]	169	316	236	71	620	341	212	671	134	351	891	45
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	22	22	20	30	30	27	38	0	20	31	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	68	68	68	68	68	68	68	68	68	68	68	68
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	17	32	5	16	33	13	19	19	10	16	16
g / C, Green / Cycle	0.10	0.25	0.47	0.08	0.23	0.48	0.19	0.28	0.28	0.15	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.15	0.04	0.17	0.22	0.06	0.22	0.22	0.10	0.18	0.03
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1756	3445	5074	1583
c, Capacity [veh/h]	342	904	738	136	824	767	665	522	492	525	1215	379
d1, Uniform Delay [s]	28.94	20.67	11.36	30.12	24.22	11.49	23.52	22.59	22.59	27.13	23.79	20.19
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.11	0.23	0.25	3.08	1.42	0.41	0.27	2.78	2.94	1.48	0.87	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

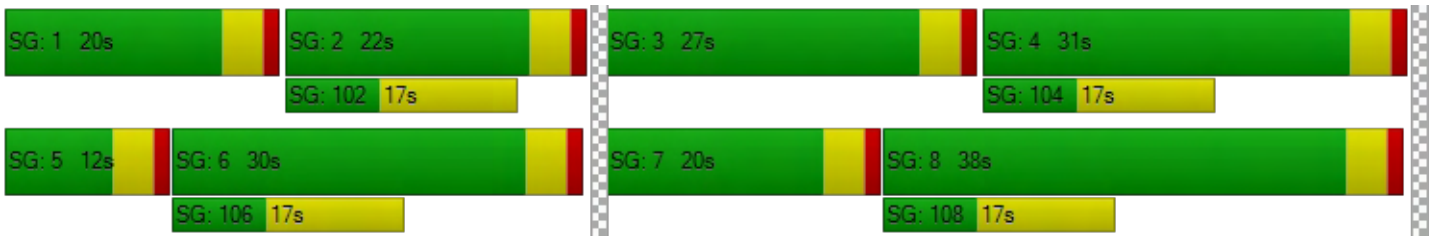
X, volume / capacity	0.49	0.35	0.32	0.52	0.75	0.44	0.32	0.79	0.79	0.67	0.73	0.12
d, Delay for Lane Group [s/veh]	30.05	20.90	11.61	33.20	25.63	11.89	23.79	25.37	25.53	28.61	24.67	20.33
Lane Group LOS	C	C	B	C	C	B	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.30	1.96	2.03	1.19	4.50	3.04	1.41	6.07	5.75	2.66	4.21	0.54
50th-Percentile Queue Length [ft/ln]	32.48	48.91	50.81	29.64	112.43	76.10	35.29	151.79	143.71	66.40	105.18	13.57
95th-Percentile Queue Length [veh/ln]	2.34	3.52	3.66	2.13	7.97	5.48	2.54	10.11	9.68	4.78	7.57	0.98
95th-Percentile Queue Length [ft/ln]	58.47	88.04	91.45	53.35	199.37	136.98	63.52	252.82	242.01	119.53	189.28	24.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.05	20.90	11.61	33.20	25.63	11.89	23.79	25.43	25.53	28.61	24.67	20.33
Movement LOS	C	C	B	C	C	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	20.00			21.61			25.10			25.59		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	23.46											
Intersection LOS	C											
Intersection V/C	0.718											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 24: Hanover Ln (NS) at Holland Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	216.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.937

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	2	81	137	1	53	46	491	70	197	640	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	10	7	17	0	0	15	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	2	81	137	1	63	53	508	70	197	655	190
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	1	21	36	0	17	14	134	18	52	172	50
Total Analysis Volume [veh/h]	73	2	85	144	1	66	56	535	74	207	689	200
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	430	431	455	535	537	423	889
Degree of Utilization, x	0.37	0.49	0.12	1.10	0.14	0.49	1.94

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.70	2.63	0.42	17.57	0.48	2.62	59.36
95th-Percentile Queue Length [ft]	42.44	65.71	10.44	439.29	11.90	65.43	1484.11
Approach Delay [s/veh]	16.29	19.12	80.73			366.77	
Approach LOS	C	C	F			F	
Intersection Delay [s/veh]	216.84						
Intersection LOS	F						

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME - Holland.vistro

Scenario 6 Existing Plus Ambient Growth Plus Project Plus Cumulative Evening Peak Hour - Holland Overpass

Report File: C:\...\PMEAPC W.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
4	Sherman Rd (NS) at Garbani Rd (EW)	All-way stop	HCM 2010	SB Left	0.347	9.5	A
5	Sherman Rd (NS) at MFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	9.1	A
6	Sherman Rd (NS) at SFR Access (EW)	Two-way stop	HCM 2010	WB Left	0.000	9.2	A
7	MFR Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Left	0.009	13.0	B
8	Commercial Access (NS) at Garbani Rd (EW)	Two-way stop	HCM 2010	NB Right	0.042	9.8	A
9	Haun Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.864	30.5	C
10	Haun Rd (NS) at Holland Road (EW)	All-way stop	HCM 2010	WB Thru	2.856	422.5	F
11	Haun Road (NS) at Garbani Road (EW)	Two-way stop	HCM 2010	EB Left	4.247	1,942.1	F
12	Haun Rd (NS) at North Project Access (EW)	Signalized	HCM 2010	EB Left	0.553	8.6	A
13	Haun Rd (NS) at Central Project Access (EW)	Signalized	HCM 2010	EB Left	0.481	10.0	A
14	Haun Rd (NS) at South Project Access (EW)	Two-way stop	HCM 2010	EB Right	0.059	12.8	B
15	Haun Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	WB Left	0.756	22.1	C
16	I-215 Fwy SB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Right	0.654	9.6	A
17	I-215 Fwy SB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.751	6.3	A
18	I-215 Fwy NB Ramps (NS) at Newport Rd (EW)	Signalized	HCM 2010	NB Right	0.656	9.6	A
19	I-215 Fwy NB Ramps (NS) at Scott Rd (EW)	Signalized	HCM 2010	EB Left	0.783	3.1	A
20	Antelope Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	EB Left	0.704	42.6	D

21	Antelope Rd (NS) at Holland Rd (EW)	Signalized	HCM 2010	NWB Right	0.483	6.5	A
22	Antelope Rd (NS) at Scott Rd (EW)	Signalized	HCM 2010	SB Left	0.756	26.4	C
23	Menifee Rd (NS) at Newport Rd (EW)	Signalized	HCM 2010	SB Left	0.682	19.8	B
24	Hanover Ln (NS) at Holland Rd (EW)	All-way stop	HCM 2010	WB Thru	1.823	206.6	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 4: Sherman Rd (NS) at Garbani Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.347

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	3	2	97	2	0	0	2	0	0	2	114
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	22	10	113	39	0	0	0	0	17	0	99
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	25	12	210	41	0	0	2	0	17	2	213
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	3	55	11	0	0	1	0	4	1	56
Total Analysis Volume [veh/h]	0	26	13	221	43	0	0	2	0	18	2	224
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	774	761	705	627	785
Degree of Utilization, x	0.05	0.35	0.00	0.03	0.29

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	1.55	0.01	0.10	1.18
95th-Percentile Queue Length [ft]	3.97	38.87	0.21	2.47	29.47
Approach Delay [s/veh]	7.90	10.22	8.12	9.07	
Approach LOS	A	B	A	A	
Intersection Delay [s/veh]	9.54				
Intersection LOS	A				

Intersection Level Of Service Report
Intersection 5: Sherman Rd (NS) at MFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	5	0	0	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	0	10	46	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	0	10	48	0	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	0	3	13	0	2
Total Analysis Volume [veh/h]	33	0	11	51	0	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.30	0.00	9.09	8.48
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.48	0.48	0.43	0.43
d_A, Approach Delay [s/veh]	0.00		1.29		8.48	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.30					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Sherman Rd (NS) at SFR Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	5	0	0	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	0	31	15	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	0	31	17	0	4
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	0	8	4	0	1
Total Analysis Volume [veh/h]	29	0	33	18	0	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.32	0.00	9.18	8.46
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.06	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.50	1.50	0.29	0.29
d_A, Approach Delay [s/veh]	0.00		4.74		8.46	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.28					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 7: MFR Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	97	0	0	114
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	30	117	6	50	112
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	30	214	6	50	226
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	8	56	2	13	59
Total Analysis Volume [veh/h]	4	32	225	6	53	238
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	13.05	9.68	0.00	0.00	7.80	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.00	0.00	0.12	0.06
95th-Percentile Queue Length [ft/ln]	3.78	3.78	0.00	0.00	2.91	1.46
d_A, Approach Delay [s/veh]	10.05		0.00		1.42	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.39					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Commercial Access (NS) at Garbani Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.042

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	97	0	0	114
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	31	132	16	0	162
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	31	229	16	0	276
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	8	60	4	0	73
Total Analysis Volume [veh/h]	0	33	241	17	0	291
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.76	0.00	0.00	0.00	0.00
Movement LOS		A	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.13	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	3.27	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.76		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.55					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 9: Haun Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.864

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	430	65	583	237	58	100	76	933	355	650	1083	166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	32	0	87	0	0	0	0	0	30	104	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	462	65	670	237	58	100	76	933	385	754	1083	166
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	122	17	176	62	15	26	20	246	101	198	285	44
Total Analysis Volume [veh/h]	486	68	705	249	61	105	80	982	405	794	1140	175
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups			2,7									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	28	33	33	16	21	0	11	49	0	42	80	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	106	106	106	106	106	106	106	106	106	106	106	106
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	17	51	10	9	9	6	32	32	30	56	56
g / C, Green / Cycle	0.17	0.16	0.48	0.10	0.09	0.09	0.06	0.31	0.31	0.29	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.14	0.04	0.25	0.07	0.03	0.07	0.02	0.19	0.26	0.23	0.25	0.25
s, saturation flow rate [veh/h]	3445	1863	2802	3445	1863	1583	3445	5074	1583	3445	3547	1740
c, Capacity [veh/h]	585	299	1358	332	162	138	206	1553	485	986	1889	927
d1, Uniform Delay [s]	42.59	38.81	18.84	46.71	45.71	47.35	48.02	31.68	34.33	35.12	15.41	15.48
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.15	0.38	0.31	3.42	1.43	8.32	1.19	0.43	3.88	1.60	0.18	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

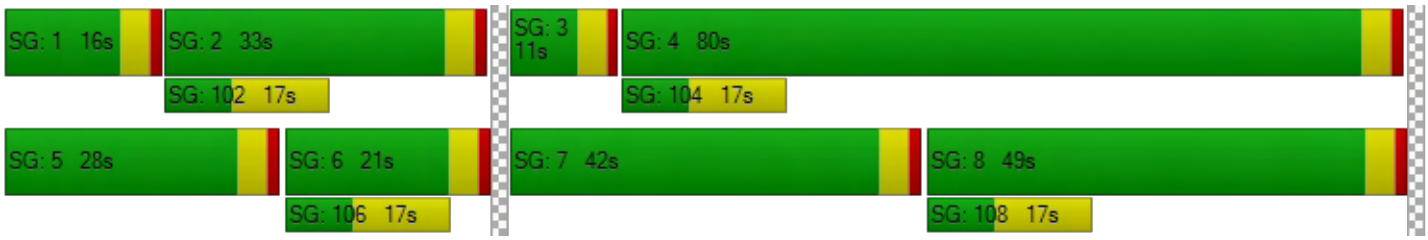
X, volume / capacity	0.83	0.23	0.52	0.75	0.38	0.76	0.39	0.63	0.84	0.81	0.47	0.47
d, Delay for Lane Group [s/veh]	45.73	39.19	19.15	50.13	47.14	55.67	49.22	32.11	38.21	36.72	15.59	15.85
Lane Group LOS	D	D	B	D	D	E	D	C	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.36	1.57	5.85	3.34	1.58	3.02	1.05	7.18	10.07	9.57	6.40	6.44
50th-Percentile Queue Length [ft/ln]	158.88	39.31	146.20	83.53	39.44	75.42	26.24	179.59	251.77	239.30	159.99	160.96
95th-Percentile Queue Length [veh/ln]	10.49	2.83	9.81	6.01	2.84	5.43	1.89	11.58	15.28	14.65	10.55	10.60
95th-Percentile Queue Length [ft/ln]	262.24	70.76	245.35	150.35	70.99	135.76	47.23	289.48	381.88	366.14	263.71	265.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.73	39.19	19.15	50.13	47.14	55.67	49.22	32.11	38.21	36.72	15.65	15.85
Movement LOS	D	D	B	D	D	E	D	C	D	D	B	B
d_A, Approach Delay [s/veh]	30.49			51.09			34.73			23.60		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]	30.54											
Intersection LOS	C											
Intersection V/C	0.864											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	All-way stop	Delay (sec / veh):	422.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.856

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	376	293	268	141	316	236	141	332	182	196	399	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	124	52	0	143	0	0	0	0	54	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	376	417	320	141	459	236	141	332	182	250	399	160
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	110	84	37	121	62	37	87	48	66	105	42
Total Analysis Volume [veh/h]	396	439	337	148	483	248	148	349	192	263	420	168
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	396	776	298	483	330	331	349	371	851
Degree of Utilization, x	1.30	2.39	0.50	1.56	0.75	0.45	1.01	0.52	2.86

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	19.21	61.15	2.61	28.09	5.81	2.22	11.63	2.86	73.47
95th-Percentile Queue Length [ft]	480.29	1528.65	65.24	702.23	145.37	55.47	290.71	71.48	1836.69
Approach Delay [s/veh]	499.24		177.81			53.44			868.31
Approach LOS	F		F			F			F
Intersection Delay [s/veh]	422.49								
Intersection LOS	F								

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Two-way stop	Delay (sec / veh):	1,942.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.247

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	89	929	0	0	669	25	8	0	89	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	118	146	0	0	176	44	57	0	106	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	1075	0	0	845	69	65	0	195	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	283	0	0	222	18	17	0	51	0	0	0
Total Analysis Volume [veh/h]	218	1132	0	0	889	73	68	0	205	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.30	0.01	0.00	0.00	0.01	0.00	4.25	0.00	0.60	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.22	0.00	0.00	10.83	0.00	0.00	1942.15	188.36	30.08	601.25	193.11	19.56
Movement LOS	B	A	A	B	A	A	F	F	D	F	F	C
95th-Percentile Queue Length [veh/ln]	1.29	0.00	0.00	0.00	0.00	0.00	9.25	3.69	3.69	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	32.20	0.00	0.00	0.00	0.00	0.00	231.36	92.26	92.26	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	1.97			0.00			506.34			271.31		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	54.51											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: Haun Rd (NS) at North Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.553

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	157	161	120	107	38
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	755	626	120	107	38
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	199	165	32	28	10
Total Analysis Volume [veh/h]	36	795	659	126	113	40
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	35	35	0	85	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	24	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	99	99	99	99	13
g / C, Green / Cycle	0.83	0.83	0.83	0.83	0.11
(v / s)_i Volume / Saturation Flow Rate	0.05	0.43	0.21	0.22	0.09
s, saturation flow rate [veh/h]	686	1863	1863	1763	1720
c, Capacity [veh/h]	580	1539	1539	1456	184
d1, Uniform Delay [s]	3.73	3.17	2.30	2.33	52.55
k, delay calibration	0.50	0.50	0.50	0.50	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	1.24	0.40	0.46	9.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

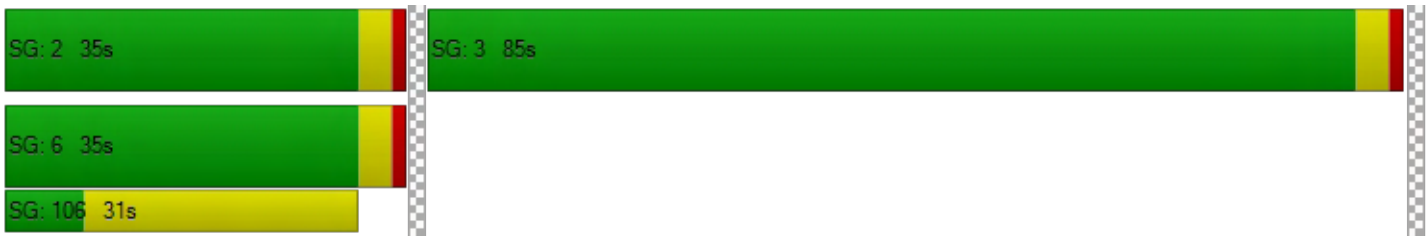
X, volume / capacity	0.06	0.52	0.26	0.27	0.83
d, Delay for Lane Group [s/veh]	3.93	4.41	2.70	2.79	61.73
Lane Group LOS	A	A	A	A	E
Critical Lane Group	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.23	4.55	1.61	1.65	4.99
50th-Percentile Queue Length [ft/ln]	5.76	113.81	40.32	41.20	124.72
95th-Percentile Queue Length [veh/ln]	0.41	8.05	2.90	2.97	8.65
95th-Percentile Queue Length [ft/ln]	10.37	201.29	72.57	74.17	216.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.93	4.41	2.74	2.79	61.73	61.73
Movement LOS	A	A	A	A	E	E
d_A, Approach Delay [s/veh]	4.39		2.74		61.73	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	8.62					
Intersection LOS	A					
Intersection V/C	0.553					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Haun Rd (NS) at Central Project Access (EW)

Control Type:	Signalized	Delay (sec / veh):	10.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.481

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.08	1.08	1.08	1.08	1.08	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	107	57	52	147	134	69
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	107	655	517	147	134	69
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	172	136	39	35	18
Total Analysis Volume [veh/h]	113	689	544	155	141	73
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	0	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	7	7	0	7	0
Maximum Green [s]	0	120	120	0	120	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	30	30	0	90	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	19	19	0	25	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
Minimum Recall		No	No		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	100	100	100	100	12	12
g / C, Green / Cycle	0.83	0.83	0.83	0.83	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.15	0.37	0.19	0.20	0.08	0.05
s, saturation flow rate [veh/h]	744	1863	1863	1728	1774	1583
c, Capacity [veh/h]	635	1553	1553	1440	177	158
d1, Uniform Delay [s]	3.65	2.63	2.04	2.08	52.90	51.05
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.61	0.92	0.34	0.40	8.00	2.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

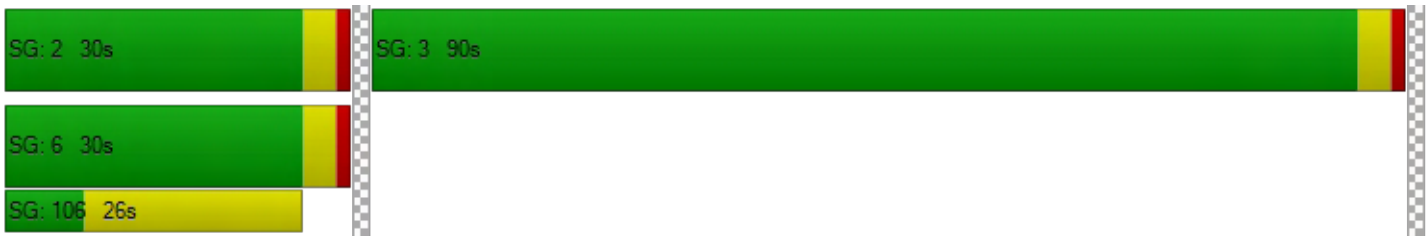
X, volume / capacity	0.18	0.44	0.23	0.24	0.80	0.46
d, Delay for Lane Group [s/veh]	4.26	3.55	2.38	2.48	60.90	53.16
Lane Group LOS	A	A	A	A	E	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.73	3.29	1.28	1.32	4.55	2.17
50th-Percentile Queue Length [ft/ln]	18.28	82.24	32.08	32.97	113.82	54.27
95th-Percentile Queue Length [veh/ln]	1.32	5.92	2.31	2.37	8.05	3.91
95th-Percentile Queue Length [ft/ln]	32.91	148.03	57.74	59.35	201.30	97.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.26	3.55	2.41	2.48	60.90	53.16
Movement LOS	A	A	A	A	E	D
d_A, Approach Delay [s/veh]	3.65		2.43		58.26	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	9.97					
Intersection LOS	A					
Intersection V/C	0.481					

Sequence

Ring 1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: Haun Rd (NS) at South Project Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.059

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	554	431	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.08	1.08	1.08	1.00	1.08
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	164	121	0	0	28
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	762	586	0	0	28
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	201	154	0	0	7
Total Analysis Volume [veh/h]	0	802	617	0	0	29
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	12.81
Movement LOS		A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.19
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	4.70
d_A, Approach Delay [s/veh]	0.00		0.00		12.81	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.26					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 15: Haun Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.756

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	78	91	94	304	34	34	40	475	22	102	432	355
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	101	0	21	24	0	0	0	0	121
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	91	94	405	34	55	64	475	22	102	432	476
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	24	25	107	9	14	17	125	6	27	114	125
Total Analysis Volume [veh/h]	82	96	99	426	36	58	67	500	23	107	455	501
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	23	0	11	26	0	30	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	63	63	63	63	63	63	63	63	63	63	63
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	7	12	12	5	22	22	6	23	23
g / C, Green / Cycle	0.11	0.11	0.11	0.19	0.19	0.08	0.35	0.35	0.09	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.06	0.15	0.15	0.04	0.14	0.14	0.06	0.13	0.32
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1738	1774	1863	1834	1774	3547	1583
c, Capacity [veh/h]	194	204	174	343	336	136	654	644	167	1306	583
d1, Uniform Delay [s]	26.36	26.51	26.82	24.23	24.23	28.08	15.55	15.56	27.70	14.52	18.52
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.45	1.68	2.93	3.61	3.68	2.72	0.40	0.41	4.08	0.16	3.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

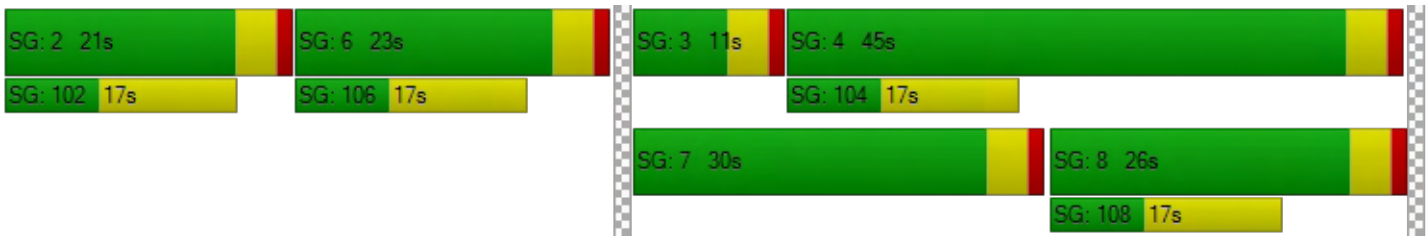
X, volume / capacity	0.42	0.47	0.57	0.77	0.77	0.49	0.40	0.40	0.64	0.35	0.86
d, Delay for Lane Group [s/veh]	27.81	28.18	29.75	27.84	27.91	30.80	15.95	15.97	31.78	14.68	22.37
Lane Group LOS	C	C	C	C	C	C	B	B	C	B	C
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.18	1.39	1.49	3.83	3.76	1.03	2.69	2.66	1.67	2.18	6.66
50th-Percentile Queue Length [ft/ln]	29.40	34.69	37.24	95.72	93.97	25.81	67.21	66.39	41.86	54.43	166.41
95th-Percentile Queue Length [veh/ln]	2.12	2.50	2.68	6.89	6.77	1.86	4.84	4.78	3.01	3.92	10.89
95th-Percentile Queue Length [ft/ln]	52.92	62.44	67.03	172.29	169.15	46.46	120.97	119.50	75.35	97.97	272.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.81	28.18	29.75	27.87	27.91	27.91	30.80	15.96	15.97	31.78	14.68	22.37
Movement LOS	C	C	C	C	C	C	C	B	B	C	B	C
d_A, Approach Delay [s/veh]	28.63			27.88			17.64			20.03		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	22.09											
Intersection LOS	C											
Intersection V/C	0.756											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: I-215 Fwy SB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	461	0	568	0	1256	497	0	1330	478
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	77	0	87	0	0	27	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	461	0	645	0	1343	497	0	1357	478
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	1.0000	0.9500	1.0000	0.9500	0.9500	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	0	0	0	121	0	170	0	353	0	0	357	0
Total Analysis Volume [veh/h]	0	0	0	485	0	679	0	1414	0	0	1428	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	96	0	0	0	44	0	0	44	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	R	C	R
C, Cycle Length [s]		41	41	41	41	41	41	41
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		14	14	14	19	19	19	19
g / C, Green / Cycle		0.35	0.35	0.35	0.46	0.46	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate		0.22	0.24	0.25	0.21	0.00	0.28	0.00
s, saturation flow rate [veh/h]		1774	1627	1583	6765	1583	5074	1583
c, Capacity [veh/h]		618	567	552	3089	723	2317	723
d1, Uniform Delay [s]		11.16	11.44	11.54	7.67	0.00	8.44	0.00
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		1.05	1.47	1.65	0.11	0.00	0.27	0.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

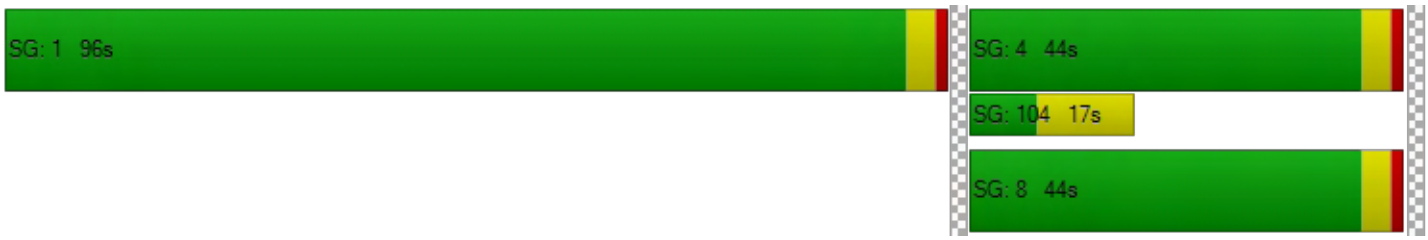
X, volume / capacity		0.63	0.68	0.70	0.46	0.00	0.62	0.00
d, Delay for Lane Group [s/veh]		12.21	12.91	13.19	7.77	0.00	8.71	0.00
Lane Group LOS		B	B	B	A	A	A	A
Critical Lane Group		No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		2.43	2.54	2.58	1.49	0.00	2.24	0.00
50th-Percentile Queue Length [ft/ln]		60.69	63.41	64.44	37.37	0.00	55.99	0.00
95th-Percentile Queue Length [veh/ln]		4.37	4.57	4.64	2.69	0.00	4.03	0.00
95th-Percentile Queue Length [ft/ln]		109.24	114.14	115.99	67.27	0.00	100.78	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	12.35	0.00	13.07	0.00	7.77	0.00	0.00	8.71	0.00
Movement LOS				B		B		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			12.77			7.77			8.71		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	9.56											
Intersection LOS	A											
Intersection V/C	0.654											

Sequence

Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: I-215 Fwy SB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	6.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.751

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	381	0	100	0	600	272	0	789	494
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	28	73	0	121	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	381	0	100	0	628	345	0	910	494
Peak Hour Factor	1.0000	1.0000	1.0000	0.9500	1.0000	0.9500	1.0000	0.9500	0.9500	0.9470	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	100	0	26	0	165	91	0	239	130
Total Analysis Volume [veh/h]	0	0	0	401	0	105	0	661	363	0	958	520
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	0	0	1	0	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	7	0	0	0	7	0	0	7	0
Maximum Green [s]	0	0	0	120	0	0	0	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	28	0	0	0	72	0	0	72	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	10	0	0	0	10	0	0	10	0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	C	R
C, Cycle Length [s]		29	29	29	29	29	29
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		7	7	15	15	15	15
g / C, Green / Cycle		0.23	0.23	0.49	0.49	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate		0.12	0.04	0.19	0.23	0.27	0.33
s, saturation flow rate [veh/h]		3445	2803	3547	1583	3547	1583
c, Capacity [veh/h]		809	658	1753	782	1753	782
d1, Uniform Delay [s]		9.78	8.98	4.64	4.90	5.18	5.62
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.47	0.11	0.13	0.43	0.27	0.98
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

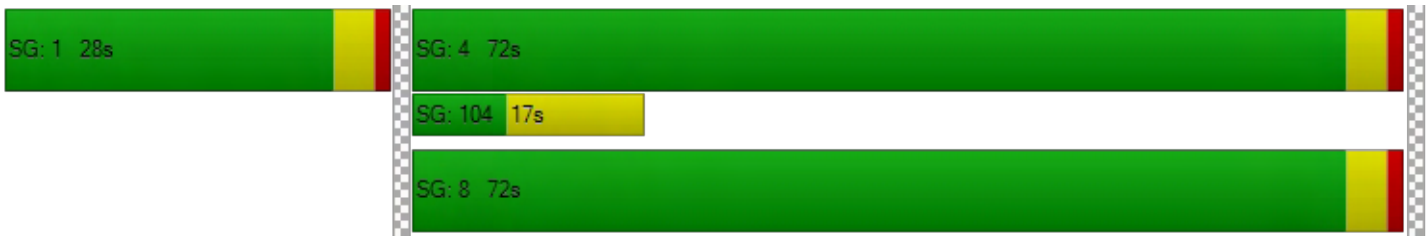
X, volume / capacity		0.50	0.16	0.38	0.46	0.55	0.66
d, Delay for Lane Group [s/veh]		10.25	9.09	4.78	5.33	5.44	6.60
Lane Group LOS		B	A	A	A	A	A
Critical Lane Group		Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		0.82	0.19	0.54	0.69	0.89	1.19
50th-Percentile Queue Length [ft/ln]		20.43	4.85	13.59	17.15	22.27	29.67
95th-Percentile Queue Length [veh/ln]		1.47	0.35	0.98	1.23	1.60	2.14
95th-Percentile Queue Length [ft/ln]		36.77	8.73	24.47	30.87	40.08	53.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	10.25	0.00	9.09	0.00	4.78	5.33	0.00	5.44	6.60
Movement LOS				B		A		A	A		A	A
d_A, Approach Delay [s/veh]	0.00			10.01			4.97			5.85		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	6.25											
Intersection LOS	A											
Intersection V/C	0.751											

Sequence

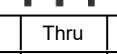
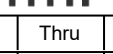
Ring 1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: I-215 Fwy NB Ramps (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.656

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	479	0	661	0	0	0	0	1282	435	0	1329	360
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	25	62	0	27	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	479	0	661	0	0	0	0	1307	497	0	1356	360
Peak Hour Factor	0.9500	1.0000	0.9500	1.0000	1.0000	1.0000	1.0000	0.9500	0.9500	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	126	0	174	0	0	0	0	344	0	0	357	0
Total Analysis Volume [veh/h]	504	0	696	0	0	0	0	1376	0	0	1427	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	7	0	0	0	0	0	0	7	0	0	7	0
Maximum Green [s]	120	0	0	0	0	0	0	120	0	0	120	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	98	0	0	0	0	0	0	42	0	0	42	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	10	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R		C	R	C	R
C, Cycle Length [s]	40	40	40		40	40	40	40
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	14		17	17	17	17
g / C, Green / Cycle	0.36	0.36	0.36		0.44	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.23	0.25	0.25		0.27	0.00	0.21	0.00
s, saturation flow rate [veh/h]	1774	1629	1583		5074	1583	6765	1583
c, Capacity [veh/h]	640	588	571		2228	695	2970	695
d1, Uniform Delay [s]	10.54	10.82	10.92		8.63	0.00	7.97	0.00
k, delay calibration	0.11	0.11	0.11		0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.01	1.40	1.57		0.28	0.00	0.12	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.68	0.70		0.62	0.00	0.48	0.00
d, Delay for Lane Group [s/veh]	11.55	12.22	12.50		8.91	0.00	8.09	0.00
Lane Group LOS	B	B	B		A	A	A	A
Critical Lane Group	No	No	Yes		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.34	2.45	2.49		2.15	0.00	1.53	0.00
50th-Percentile Queue Length [ft/ln]	58.53	61.19	62.25		53.66	0.00	38.13	0.00
95th-Percentile Queue Length [veh/ln]	4.21	4.41	4.48		3.86	0.00	2.75	0.00
95th-Percentile Queue Length [ft/ln]	105.35	110.15	112.06		96.59	0.00	68.64	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.69	0.00	12.38	0.00	0.00	0.00	0.00	8.91	0.00	0.00	8.09	0.00
Movement LOS	B		B					A	A		A	A
d_A, Approach Delay [s/veh]	12.09			0.00			8.91			8.09		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	9.57											
Intersection LOS	A											
Intersection V/C	0.656											

Sequence

Ring 1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 19: I-215 Fwy NB Ramps (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	3.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.783

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	583	0	0	446	101	880	0	0	838	517
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	92	0	28	0	0	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	583	0	0	538	101	908	0	0	867	517
Peak Hour Factor	0.9650	1.0000	0.9500	1.0000	1.0000	0.9500	0.9500	0.9500	1.0000	1.0000	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	153	0	0	142	27	239	0	0	228	136
Total Analysis Volume [veh/h]	0	0	614	0	0	566	106	956	0	0	913	544
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	0	0	0	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	0	0	0	0	0	7	7	0	0	7	0
Maximum Green [s]	0	0	0	0	0	0	120	120	0	0	120	0
Amber [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	18	100	0	0	82	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk								No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall							No	No			No	
Maximum Recall							No	No			No	
Pedestrian Recall							No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group			L	C	C	R
C, Cycle Length [s]			25	25	25	25
L, Total Lost Time per Cycle [s]			4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]			0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]			2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]			4	21	13	13
g / C, Green / Cycle			0.15	0.84	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate			0.06	0.27	0.26	0.34
s, saturation flow rate [veh/h]			1774	3547	3547	1583
c, Capacity [veh/h]			263	2975	1878	838
d1, Uniform Delay [s]			9.58	0.44	3.70	4.19
k, delay calibration			0.11	0.11	0.11	0.11
I, Upstream Filtering Factor			1.00	1.00	1.00	1.00
d2, Incremental Delay [s]			1.00	0.06	0.20	0.85
d3, Initial Queue Delay [s]			0.00	0.00	0.00	0.00
Rp, platoon ratio			1.00	1.00	1.00	1.00
PF, progression factor			1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity			0.40	0.32	0.49	0.65
d, Delay for Lane Group [s/veh]			10.57	0.50	3.90	5.04
Lane Group LOS			B	A	A	A
Critical Lane Group			Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]			0.41	0.03	0.27	0.49
50th-Percentile Queue Length [ft/ln]			10.20	0.64	6.70	12.28
95th-Percentile Queue Length [veh/ln]			0.73	0.05	0.48	0.88
95th-Percentile Queue Length [ft/ln]			18.37	1.15	12.06	22.10

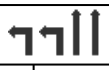
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	10.57	0.50	0.00	0.00	3.90	5.04
Movement LOS							B	A			A	A
d_A, Approach Delay [s/veh]	0.00			0.00			1.51			4.32		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	3.14											
Intersection LOS	A											
Intersection V/C	0.783											

Intersection Level Of Service Report
Intersection 20: Antelope Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	42.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	565	154	246	13	97	103	152	1197	499	169	1021	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	6	7	15	3	0	18	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	568	154	246	13	97	109	159	1212	502	169	1039	29
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	149	41	65	3	26	29	42	319	132	44	273	8
Total Analysis Volume [veh/h]	598	162	259	14	102	115	167	1276	528	178	1094	31
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	40	33	0	28	21	0	13	63	0	16	66	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	140	140	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	59	59	3	35	35	9	52	52	9	53	53
g / C, Green / Cycle	0.19	0.42	0.42	0.02	0.25	0.25	0.06	0.37	0.37	0.07	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.17	0.09	0.16	0.00	0.06	0.06	0.05	0.25	0.33	0.05	0.21	0.21
s, saturation flow rate [veh/h]	3445	1863	1583	3445	1828	1583	3445	5074	1583	3445	3547	1837
c, Capacity [veh/h]	671	789	670	74	457	396	216	1899	593	230	1342	695
d1, Uniform Delay [s]	54.99	25.52	27.86	67.37	42.03	42.13	64.72	36.66	41.17	64.39	34.25	34.25
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.36	0.59	1.68	1.21	1.31	1.58	5.84	0.42	4.88	5.55	0.36	0.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

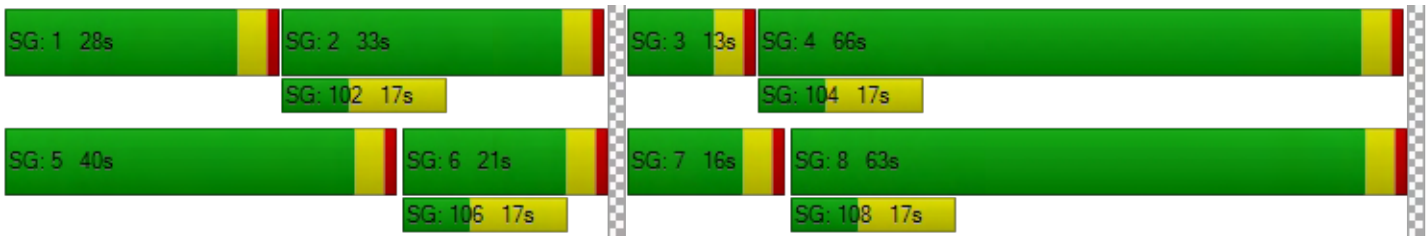
X, volume / capacity	0.89	0.21	0.39	0.19	0.25	0.26	0.77	0.67	0.89	0.78	0.55	0.55
d, Delay for Lane Group [s/veh]	59.36	26.11	29.54	68.58	43.33	43.72	70.56	37.08	46.05	69.93	34.61	34.94
Lane Group LOS	E	C	C	E	D	D	E	D	D	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	10.71	3.59	6.36	0.26	3.37	3.06	3.12	12.27	17.81	3.32	10.05	10.47
50th-Percentile Queue Length [ft/ln]	267.65	89.87	159.04	6.50	84.19	76.49	78.09	306.76	445.16	82.90	251.25	261.86
95th-Percentile Queue Length [veh/ln]	16.07	6.47	10.50	0.47	6.06	5.51	5.62	18.01	24.73	5.97	15.25	15.78
95th-Percentile Queue Length [ft/ln]	401.80	161.77	262.45	11.70	151.55	137.68	140.57	450.37	618.17	149.22	381.23	394.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.36	26.11	29.54	68.58	43.33	43.69	70.56	37.08	46.05	69.93	34.71	34.94
Movement LOS	E	C	C	E	D	D	E	D	D	E	C	C
d_A, Approach Delay [s/veh]	46.49			45.04			42.32			39.53		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.59											
Intersection LOS	D											
Intersection V/C	0.704											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 21: Antelope Rd (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	6.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.483

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	503	84	154	311	0	0	0	0	6	0	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	0	0	9	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	512	84	154	320	0	0	0	0	6	0	14
Peak Hour Factor	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500	0.9500	0.9500	0.9500	1.0000	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	135	22	41	84	0	0	0	0	2	0	4
Total Analysis Volume [veh/h]	0	539	88	162	337	0	0	0	0	6	0	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	0	0	0	7	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	7	7	0	0	0	0	7	0	0
Maximum Green [s]	0	120	0	120	120	0	0	0	0	120	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	0	48	0	31	79	0	0	0	0	21	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Minimum Recall		No		No	No					No		
Maximum Recall		No		No	No					No		
Pedestrian Recall		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C		L	C	R
C, Cycle Length [s]	25	25	25	25		25	25	25
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00		2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	5	16		1	1	1
g / C, Green / Cycle	0.28	0.28	0.19	0.64		0.04	0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.15	0.06	0.09	0.10		0.00	0.00	0.00
s, saturation flow rate [veh/h]	3547	1583	1774	3547		1774	1583	1583
c, Capacity [veh/h]	998	446	346	2260		72	64	64
d1, Uniform Delay [s]	7.56	6.78	8.86	1.80		11.47	11.48	11.48
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00
d2, Incremental Delay [s]	0.46	0.21	0.99	0.03		0.50	0.81	0.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00

Lane Group Results

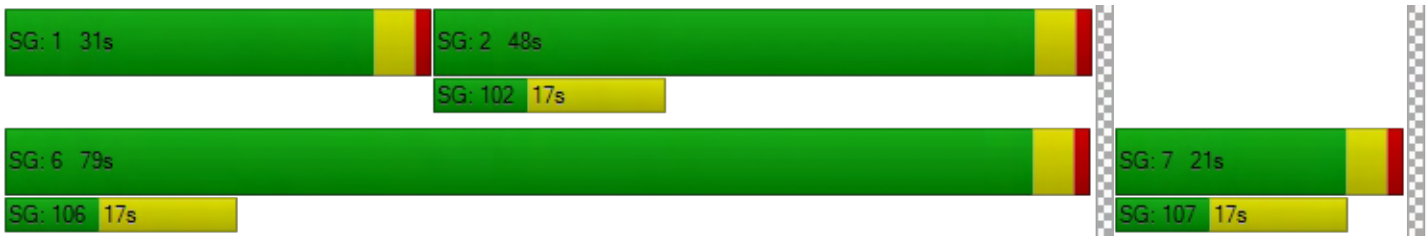
X, volume / capacity	0.54	0.20	0.47	0.15		0.08	0.12	0.12
d, Delay for Lane Group [s/veh]	8.01	7.00	9.85	1.83		11.97	12.29	12.29
Lane Group LOS	A	A	A	A		B	B	B
Critical Lane Group	Yes	No	Yes	No		No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.71	0.22	0.57	0.01		0.03	0.04	0.04
50th-Percentile Queue Length [ft/ln]	17.83	5.43	14.18	0.24		0.80	1.06	1.06
95th-Percentile Queue Length [veh/ln]	1.28	0.39	1.02	0.02		0.06	0.08	0.08
95th-Percentile Queue Length [ft/ln]	32.09	9.77	25.52	0.43		1.45	1.90	1.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	8.01	7.00	9.85	1.83	0.00	0.00	0.00	0.00	11.97	0.00	12.29
Movement LOS		A	A	A	A					B		B
d_A, Approach Delay [s/veh]	7.87			4.43			0.00			12.20		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	6.45											
Intersection LOS	A											
Intersection V/C	0.483											

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Antelope Rd (NS) at Scott Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	26.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.756

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	471	448	226	59	124	272	339	793	331	76	612	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	0	0	19	9	0	20	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	480	448	226	59	124	272	339	812	340	76	632	72
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	126	118	59	16	33	72	89	214	89	20	166	19
Total Analysis Volume [veh/h]	505	472	238	62	131	286	357	855	358	80	665	76
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	120	120	0	120	120	0	120	120	0	120	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	24	0	29	29	0	24	36	0	11	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	74	74	74	74	74	74	74	74	74	74	74	74
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	25	25	5	16	16	10	22	22	6	17	17
g / C, Green / Cycle	0.19	0.34	0.34	0.07	0.22	0.22	0.14	0.30	0.30	0.08	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.15	0.13	0.15	0.03	0.07	0.18	0.10	0.24	0.23	0.02	0.14	0.14
s, saturation flow rate [veh/h]	3445	3547	1583	1774	1863	1583	3445	3547	1583	3445	3547	1767
c, Capacity [veh/h]	650	1193	533	122	403	342	488	1068	477	265	838	418
d1, Uniform Delay [s]	28.43	18.72	19.10	33.13	24.35	27.63	30.30	23.71	23.26	32.16	24.96	25.00
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.04	0.21	0.59	3.27	0.46	5.37	2.14	1.44	2.40	0.64	0.66	1.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

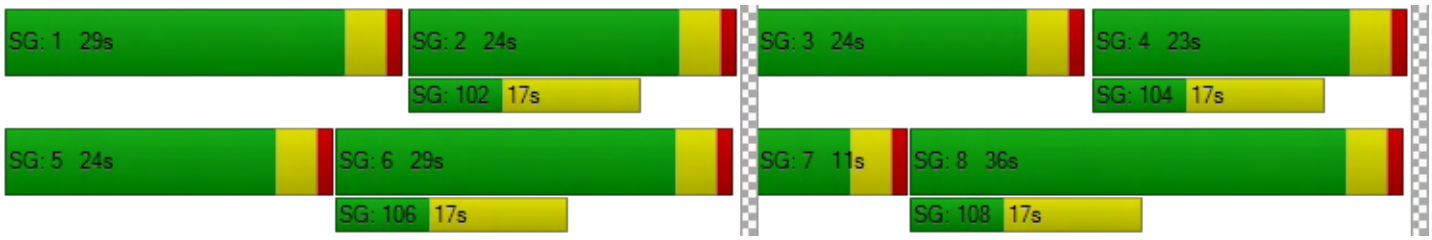
X, volume / capacity	0.78	0.40	0.45	0.51	0.33	0.84	0.73	0.80	0.75	0.30	0.59	0.59
d, Delay for Lane Group [s/veh]	30.47	18.94	19.69	36.40	24.81	32.99	32.44	25.15	25.66	32.79	25.62	26.35
Lane Group LOS	C	B	B	D	C	C	C	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.23	2.94	3.08	1.15	1.90	5.09	3.06	6.63	5.59	0.68	3.72	3.82
50th-Percentile Queue Length [ft/ln]	105.87	73.56	76.95	28.68	47.54	127.31	76.56	165.77	139.72	16.93	92.90	95.62
95th-Percentile Queue Length [veh/ln]	7.61	5.30	5.54	2.07	3.42	8.79	5.51	10.85	9.47	1.22	6.69	6.88
95th-Percentile Queue Length [ft/ln]	190.24	132.40	138.52	51.63	85.58	219.84	137.81	271.34	236.65	30.48	167.21	172.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.47	18.94	19.69	36.40	24.81	32.99	32.44	25.15	25.66	32.79	25.81	26.35
Movement LOS	C	B	B	D	C	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	23.88			31.20			26.92			26.54		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	26.44											
Intersection LOS	C											
Intersection V/C	0.756											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 23: Menifee Rd (NS) at Newport Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.682

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	148	377	236	19	331	272	265	704	137	192	534	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	6	0	3	3	4	9	0	9	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	381	242	19	334	275	269	713	137	201	546	48
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	100	64	5	88	72	71	188	36	53	144	13
Total Analysis Volume [veh/h]	156	401	255	20	352	289	283	751	144	212	575	51
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	2	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups			2,7			3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	0
Maximum Green [s]	120	120	120	120	120	120	120	120	0	120	120	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	27	27	11	27	27	15	51	0	11	47	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	10	0	10	10	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	59	59	59	59	59	59	59	59	59	59	59	59
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	14	27	2	9	24	11	18	18	9	16	16
g / C, Green / Cycle	0.11	0.23	0.46	0.03	0.16	0.42	0.19	0.30	0.30	0.16	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.05	0.11	0.16	0.01	0.10	0.18	0.08	0.25	0.25	0.06	0.11	0.03
s, saturation flow rate [veh/h]	3445	3547	1583	1774	3547	1583	3445	1863	1760	3445	5074	1583
c, Capacity [veh/h]	380	823	725	60	551	659	664	567	536	543	1366	426
d1, Uniform Delay [s]	24.35	19.53	10.29	27.74	23.26	12.24	20.85	18.86	18.88	22.20	17.68	16.20
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.45	0.29	3.26	1.24	0.46	0.43	2.84	3.04	0.46	0.21	0.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.49	0.35	0.34	0.64	0.44	0.43	0.81	0.81	0.39	0.42	0.12
d, Delay for Lane Group [s/veh]	25.07	19.98	10.59	31.00	24.50	12.70	21.28	21.70	21.91	22.66	17.89	16.33
Lane Group LOS	C	B	B	C	C	B	C	C	C	C	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.98	2.22	1.86	0.31	2.22	2.42	1.62	5.60	5.33	1.26	1.97	0.49
50th-Percentile Queue Length [ft/ln]	24.61	55.59	46.59	7.84	55.41	60.58	40.51	139.90	133.32	31.43	49.35	12.24
95th-Percentile Queue Length [veh/ln]	1.77	4.00	3.35	0.56	3.99	4.36	2.92	9.48	9.12	2.26	3.55	0.88
95th-Percentile Queue Length [ft/ln]	44.29	100.05	83.87	14.12	99.74	109.04	72.92	236.89	227.99	56.57	88.82	22.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.07	19.98	10.59	31.00	24.50	12.70	21.28	21.78	21.91	22.66	17.89	16.33
Movement LOS	C	B	B	C	C	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	18.01			19.54			21.68			19.00		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	19.78											
Intersection LOS	B											
Intersection V/C	0.682											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 24: Hanover Ln (NS) at Holland Rd (EW)

Control Type:	All-way stop	Delay (sec / veh):	206.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.823

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	90	3	108	68	4	124	51	564	70	154	603	117
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	21	21	31	0	0	33	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	3	108	68	4	145	72	595	70	154	636	117
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	1	28	18	1	38	19	157	18	41	167	31
Total Analysis Volume [veh/h]	95	3	114	72	4	153	76	626	74	162	669	123
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	426	434	438	626	513	405	792
Degree of Utilization, x	0.50	0.53	0.17	1.34	0.14	0.40	1.82

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.70	3.00	0.62	28.27	0.50	1.89	50.56
95th-Percentile Queue Length [ft]	67.51	75.03	15.54	706.77	12.53	47.17	1264.10
Approach Delay [s/veh]	19.54	20.20	155.95			334.04	
Approach LOS	C	C	F			F	
Intersection Delay [s/veh]	206.57						
Intersection LOS	F						

EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PLUS CUMULATIVE (WITH HOLLAND ROAD OVERPASS) – WITH IMPROVEMENTS

Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\AME - Holland.vistro

Scenario 8 Existing Plus Ambient Growth Plus Project Plus Cumulative Morning Peak Hour - Holland Overpass - With Improvements

Report File: C:\...\AMEAPCI W.pdf

1/15/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
10	Haun Rd (NS) at Holland Road (EW)	Signalized	HCM 2010	SB Left	0.773	31.9	C
11	Haun Road (NS) at Garbani Road (EW)	Signalized	HCM 2010	EB Right	0.822	35.5	D
24	Hanover Ln (NS) at Holland Rd (EW)	Signalized	HCM 2010	NB Right	0.890	33.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	Signalized	Delay (sec / veh):	31.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	266	127	162	132	322	201	144	314	208	278	336	147
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	87	24	0	63	0	0	0	0	25	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	266	214	186	132	385	201	144	314	208	303	336	147
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	56	49	35	101	53	38	83	55	80	88	39
Total Analysis Volume [veh/h]	280	225	196	139	405	212	152	331	219	319	354	155
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	42	11	0	42	11	0	0	47	0	0	47	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	35	35	10	27	27	43	43	43	43	43	43
g / C, Green / Cycle	0.18	0.35	0.35	0.10	0.27	0.27	0.43	0.43	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.16	0.12	0.12	0.08	0.22	0.13	0.15	0.18	0.14	0.31	0.10	0.10
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1583	1023	1863	1583	1045	3547	1583
c, Capacity [veh/h]	321	655	557	175	502	427	427	801	681	371	1524	681
d1, Uniform Delay [s]	39.89	23.92	24.00	44.15	34.14	30.84	25.05	19.80	18.89	36.61	18.08	18.04
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.38	1.43	1.74	7.98	13.01	4.09	0.50	0.34	0.27	5.86	0.08	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.34	0.35	0.80	0.81	0.50	0.36	0.41	0.32	0.86	0.23	0.23
d, Delay for Lane Group [s/veh]	47.27	25.35	25.74	52.13	47.15	34.93	25.55	20.14	19.16	42.47	18.16	18.21
Lane Group LOS	D	C	C	D	D	C	C	C	B	D	B	B
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.27	4.13	3.65	3.73	10.83	4.75	2.78	5.29	3.35	8.39	2.57	2.26
50th-Percentile Queue Length [ft/ln]	181.83	103.26	91.32	93.33	270.63	118.67	69.58	132.34	83.64	209.69	64.13	56.48
95th-Percentile Queue Length [veh/ln]	11.70	7.43	6.57	6.72	16.22	8.32	5.01	9.07	6.02	13.14	4.62	4.07
95th-Percentile Queue Length [ft/ln]	292.41	185.87	164.37	168.00	405.53	207.99	125.24	226.68	150.55	328.43	115.43	101.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.27	25.35	25.74	52.13	47.15	34.93	25.55	20.14	19.16	42.47	18.16	18.21
Movement LOS	D	C	C	D	D	C	C	C	B	D	B	B
d_A, Approach Delay [s/veh]	34.22			44.64			21.00			27.54		
Approach LOS	C			D			C			C		
d_I, Intersection Delay [s/veh]	31.90											
Intersection LOS	C											
Intersection V/C	0.773											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Signalized	Delay (sec / veh):	35.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.822

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	375	539	0	0	749	59	16	0	285	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	38	69	0	0	89	13	50	0	67	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	413	608	0	0	838	72	66	0	352	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	109	160	0	0	221	19	17	0	93	0	0	0
Total Analysis Volume [veh/h]	435	640	0	0	882	76	69	0	371	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	66	14	0	63	11	0	0	43	0	0	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	25	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	32	78	0	46	46	30	30	30
g / C, Green / Cycle	0.27	0.65	0.00	0.38	0.38	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.25	0.34	0.00	0.26	0.26	0.05	0.23	0.00
s, saturation flow rate [veh/h]	1774	1863	1774	1863	1811	1412	1583	1820
c, Capacity [veh/h]	471	1203	1	710	690	398	402	492
d1, Uniform Delay [s]	42.94	11.47	0.00	31.13	31.13	36.49	43.69	0.00
k, delay calibration	0.11	0.50	0.11	0.50	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.11	1.69	0.00	5.30	5.44	0.20	9.24	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

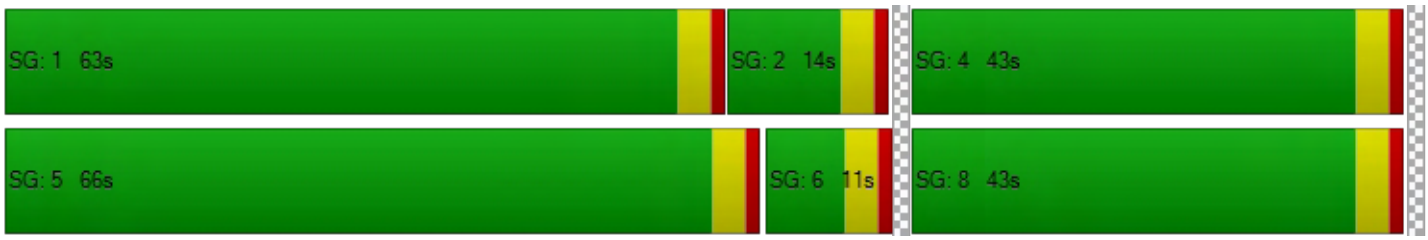
X, volume / capacity	0.92	0.53	0.00	0.68	0.68	0.17	0.92	0.00
d, Delay for Lane Group [s/veh]	51.05	13.16	0.00	36.43	36.57	36.70	52.94	0.00
Lane Group LOS	D	B	A	D	D	D	D	A
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	13.52	9.25	0.00	12.70	12.37	1.65	11.70	0.00
50th-Percentile Queue Length [ft/ln]	338.10	231.14	0.00	317.44	309.37	41.34	292.50	0.00
95th-Percentile Queue Length [veh/ln]	19.56	14.23	0.00	18.54	18.14	2.98	17.31	0.00
95th-Percentile Queue Length [ft/ln]	488.88	355.80	0.00	463.54	453.60	74.41	432.74	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.05	13.16	13.16	0.00	36.49	36.57	36.70	52.94	52.94	0.00	0.00	0.00
Movement LOS	D	B	B	A	D	D	D	D	D	A	A	A
d_A, Approach Delay [s/veh]	28.49			36.50			50.39			0.00		
Approach LOS	C			D			D			A		
d_I, Intersection Delay [s/veh]	35.49											
Intersection LOS	D											
Intersection V/C	0.822											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 24: Hanover Ln (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	33.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.890

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	69	2	81	137	1	53	46	491	70	197	640	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	10	7	17	0	0	15	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	2	81	137	1	63	53	508	70	197	655	190
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	1	21	36	0	17	14	134	18	52	172	50
Total Analysis Volume [veh/h]	73	2	85	144	1	66	56	535	74	207	689	200
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	47	0	16	52	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	15	6	44	44	14	52
g / C, Green / Cycle	0.12	0.15	0.06	0.44	0.44	0.14	0.52
(v / s)_i Volume / Saturation Flow Rate	0.10	0.12	0.03	0.29	0.05	0.12	0.50
s, saturation flow rate [veh/h]	1668	1710	1774	1863	1583	1774	1792
c, Capacity [veh/h]	195	249	98	817	694	246	935
d1, Uniform Delay [s]	43.09	41.58	46.02	22.09	16.52	41.94	22.66
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.28	7.76	5.11	0.90	0.07	7.54	6.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

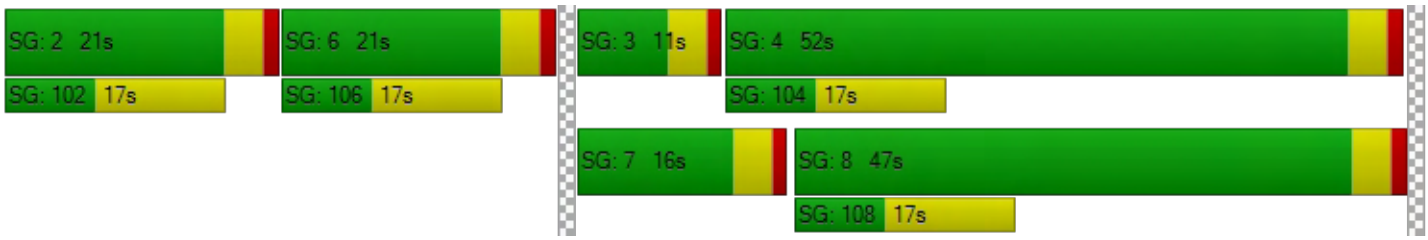
X, volume / capacity	0.82	0.85	0.57	0.66	0.11	0.84	0.95
d, Delay for Lane Group [s/veh]	51.36	49.34	51.13	22.99	16.59	49.48	28.93
Lane Group LOS	D	D	D	C	B	D	C
Critical Lane Group	Yes	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.27	5.54	1.49	9.72	1.00	5.43	19.92
50th-Percentile Queue Length [ft/ln]	106.69	138.49	37.15	242.91	24.92	135.79	497.96
95th-Percentile Queue Length [veh/ln]	7.66	9.40	2.67	14.83	1.79	9.25	27.24
95th-Percentile Queue Length [ft/ln]	191.40	234.99	66.86	370.71	44.85	231.34	680.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.36	51.36	51.36	49.34	49.34	49.34	51.13	22.99	16.59	49.48	28.93	28.93
Movement LOS	D	D	D	D	D	D	D	C	B	D	C	C
d_A, Approach Delay [s/veh]	51.36			49.34			24.65			32.81		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	33.29											
Intersection LOS	C											
Intersection V/C	0.890											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Millcreek Promenade / Rancho Bonito

Vistro File: C:\...\PME - Holland.vistro

Scenario 7 Existing Plus Ambient Growth Plus Project Plus Cumulative Evening Peak Hour - Holland Overpass - With Improvements

Report File: C:\...\PMEAPCI W.pdf

1/18/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
10	Haun Rd (NS) at Holland Road (EW)	Signalized	HCM 2010	SB Thru	0.829	38.9	D
11	Haun Road (NS) at Garbani Road (EW)	Signalized	HCM 2010	NB Left	0.819	22.5	C
24	Hanover Ln (NS) at Holland Rd (EW)	Signalized	HCM 2010	EB Left	0.891	35.5	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 10: Haun Rd (NS) at Holland Road (EW)

Control Type:	Signalized	Delay (sec / veh):	38.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.829

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	376	293	268	141	316	236	141	332	182	196	399	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	124	52	0	143	0	0	0	0	54	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	376	417	320	141	459	236	141	332	182	250	399	160
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	110	84	37	121	62	37	87	48	66	105	42
Total Analysis Volume [veh/h]	396	439	337	148	483	248	148	349	192	263	420	168
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	120	120	0	120	120	0	0	120	0	0	120	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	31	31	0	34	34	0	0	45	0	0	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	46	46	11	31	31	41	41	41	41	41	41
g / C, Green / Cycle	0.24	0.42	0.42	0.10	0.28	0.28	0.37	0.37	0.37	0.37	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.22	0.24	0.21	0.08	0.26	0.16	0.15	0.19	0.12	0.26	0.12	0.11
s, saturation flow rate [veh/h]	1774	1863	1583	1774	1863	1583	963	1863	1583	1028	3547	1583
c, Capacity [veh/h]	424	775	659	181	521	442	326	694	590	281	1322	590
d1, Uniform Delay [s]	41.06	24.55	23.84	48.42	38.60	33.90	34.60	26.67	24.66	45.60	24.58	24.24
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.79	2.99	2.82	8.63	25.09	5.06	0.99	0.57	0.32	13.74	0.14	0.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.57	0.51	0.82	0.93	0.56	0.45	0.50	0.33	0.94	0.32	0.28
d, Delay for Lane Group [s/veh]	50.84	27.54	26.67	57.05	63.69	38.96	35.58	27.23	24.98	59.34	24.72	24.51
Lane Group LOS	D	C	C	E	E	D	D	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	11.55	9.23	6.92	4.40	16.11	6.25	3.48	7.11	3.61	8.35	3.91	3.11
50th-Percentile Queue Length [ft/ln]	288.74	230.83	173.00	110.07	402.69	156.23	87.10	177.68	90.31	208.86	97.67	77.64
95th-Percentile Queue Length [veh/ln]	17.12	14.22	11.23	7.84	22.69	10.35	6.27	11.48	6.50	13.09	7.03	5.59
95th-Percentile Queue Length [ft/ln]	428.08	355.42	280.85	196.10	567.24	258.73	156.77	286.98	162.56	327.36	175.80	139.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.84	27.54	26.67	57.05	63.69	38.96	35.58	27.23	24.98	59.34	24.72	24.51
Movement LOS	D	C	C	E	E	D	D	C	C	E	C	C
d_A, Approach Delay [s/veh]	35.16			55.59			28.40			35.38		
Approach LOS	D			E			C			D		
d_I, Intersection Delay [s/veh]	38.92											
Intersection LOS	D											
Intersection V/C	0.829											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Haun Road (NS) at Garbani Road (EW)

Control Type:	Signalized	Delay (sec / veh):	22.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.819

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name												
Base Volume Input [veh/h]	89	929	0	0	669	25	8	0	89	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	118	146	0	0	176	44	57	0	106	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	1075	0	0	845	69	65	0	195	0	0	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	283	0	0	222	18	17	0	51	0	0	0
Total Analysis Volume [veh/h]	218	1132	0	0	889	73	68	0	205	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	68	21	0	58	11	0	0	41	0	0	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	24	0	0	25	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	90	0	73	73	18	18	18
g / C, Green / Cycle	0.14	0.75	0.00	0.61	0.61	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.12	0.61	0.00	0.26	0.26	0.05	0.13	0.00
s, saturation flow rate [veh/h]	1774	1863	1774	1863	1814	1412	1583	1737
c, Capacity [veh/h]	250	1398	2	1137	1107	247	235	288
d1, Uniform Delay [s]	50.46	9.52	0.00	12.32	12.32	47.45	49.95	0.00
k, delay calibration	0.11	0.50	0.11	0.50	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.15	5.17	0.00	1.18	1.21	0.60	9.66	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.81	0.00	0.43	0.43	0.28	0.87	0.00
d, Delay for Lane Group [s/veh]	59.60	14.68	0.00	13.50	13.53	48.05	59.60	0.00
Lane Group LOS	E	B	A	B	B	D	E	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.03	17.63	0.00	7.04	6.86	1.90	6.63	0.00
50th-Percentile Queue Length [ft/ln]	175.82	440.87	0.00	176.01	171.60	47.52	165.82	0.00
95th-Percentile Queue Length [veh/ln]	11.38	24.52	0.00	11.39	11.16	3.42	10.86	0.00
95th-Percentile Queue Length [ft/ln]	284.55	613.04	0.00	284.80	279.02	85.54	271.41	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.60	14.68	14.68	0.00	13.51	13.53	48.05	59.60	59.60	0.00	0.00	0.00
Movement LOS	E	B	B	A	B	B	D	E	E	A	A	A
d_A, Approach Delay [s/veh]	21.94			13.52			56.73			0.00		
Approach LOS	C			B			E			A		
d_I, Intersection Delay [s/veh]	22.48											
Intersection LOS	C											
Intersection V/C	0.819											

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 24: Hanover Ln (NS) at Holland Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	35.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.891

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	90	3	108	68	4	124	51	564	70	154	603	117
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	21	21	31	0	0	33	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	3	108	68	4	145	72	595	70	154	636	117
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	1	28	18	1	38	19	157	18	41	167	31
Total Analysis Volume [veh/h]	95	3	114	72	4	153	76	626	74	162	669	123
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	21	0	0	21	0	11	22	0	11	22	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	C	R	L	C
C, Cycle Length [s]	98	98	98	98	98	98	98
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	16	6	41	41	11	46
g / C, Green / Cycle	0.15	0.16	0.06	0.41	0.41	0.11	0.46
(v / s)_i Volume / Saturation Flow Rate	0.13	0.14	0.04	0.34	0.05	0.09	0.44
s, saturation flow rate [veh/h]	1667	1643	1774	1863	1583	1774	1813
c, Capacity [veh/h]	250	267	110	769	653	200	839
d1, Uniform Delay [s]	40.78	40.14	45.25	25.59	17.83	42.70	25.24
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.80	7.81	7.37	2.16	0.08	7.71	6.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

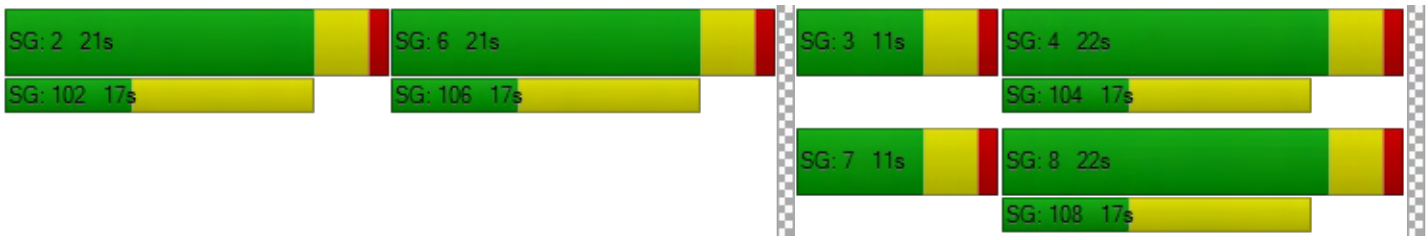
X, volume / capacity	0.85	0.86	0.69	0.81	0.11	0.81	0.94
d, Delay for Lane Group [s/veh]	48.58	47.96	52.62	27.76	17.90	50.41	31.47
Lane Group LOS	D	D	D	C	B	D	C
Critical Lane Group	Yes	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.48	5.90	2.03	12.87	1.04	4.24	18.04
50th-Percentile Queue Length [ft/ln]	137.05	147.51	50.78	321.79	25.89	105.90	451.00
95th-Percentile Queue Length [veh/ln]	9.32	9.88	3.66	18.76	1.86	7.61	25.01
95th-Percentile Queue Length [ft/ln]	233.04	247.10	91.40	468.89	46.60	190.28	625.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.58	48.58	48.58	47.96	47.96	47.96	52.62	27.76	17.90	50.41	31.47	31.47
Movement LOS	D	D	D	D	D	D	D	C	B	D	C	C
d_A, Approach Delay [s/veh]	48.58			47.96			29.25			34.69		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	35.50											
Intersection LOS	D											
Intersection V/C	0.891											

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX E

TRAFFIC SIGNAL WARRANT WORKSHEETS

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing

Major Street Name = **Bradley Road**

Total of Both Approaches (VPH) = **830**

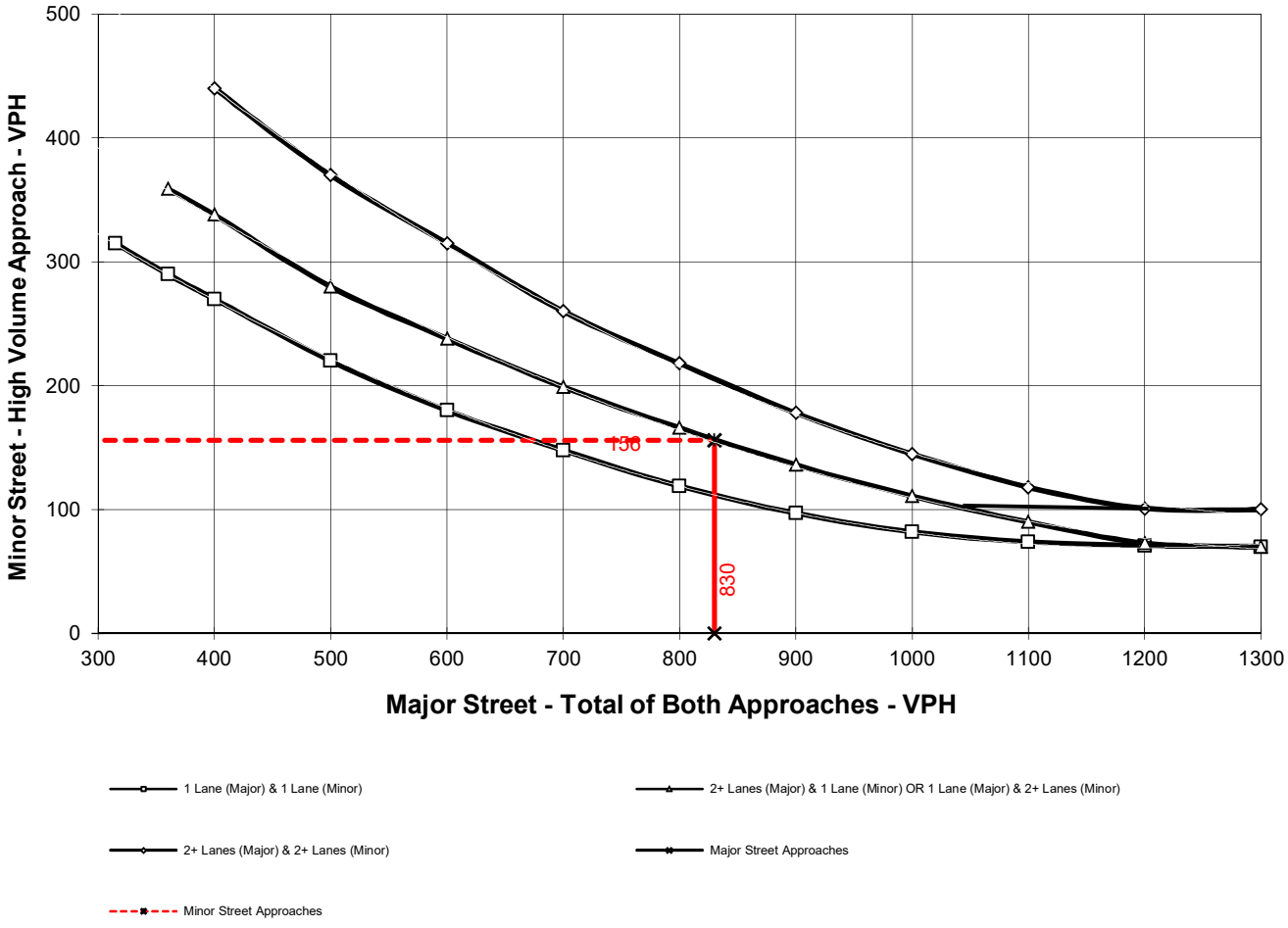
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Craig Avenue /Linda Lee Drive**

High Volume Approach (VPH) = **156**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



** NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing

Major Street Name = **Haun Road**

Total of Both Approaches (VPH) = **926**

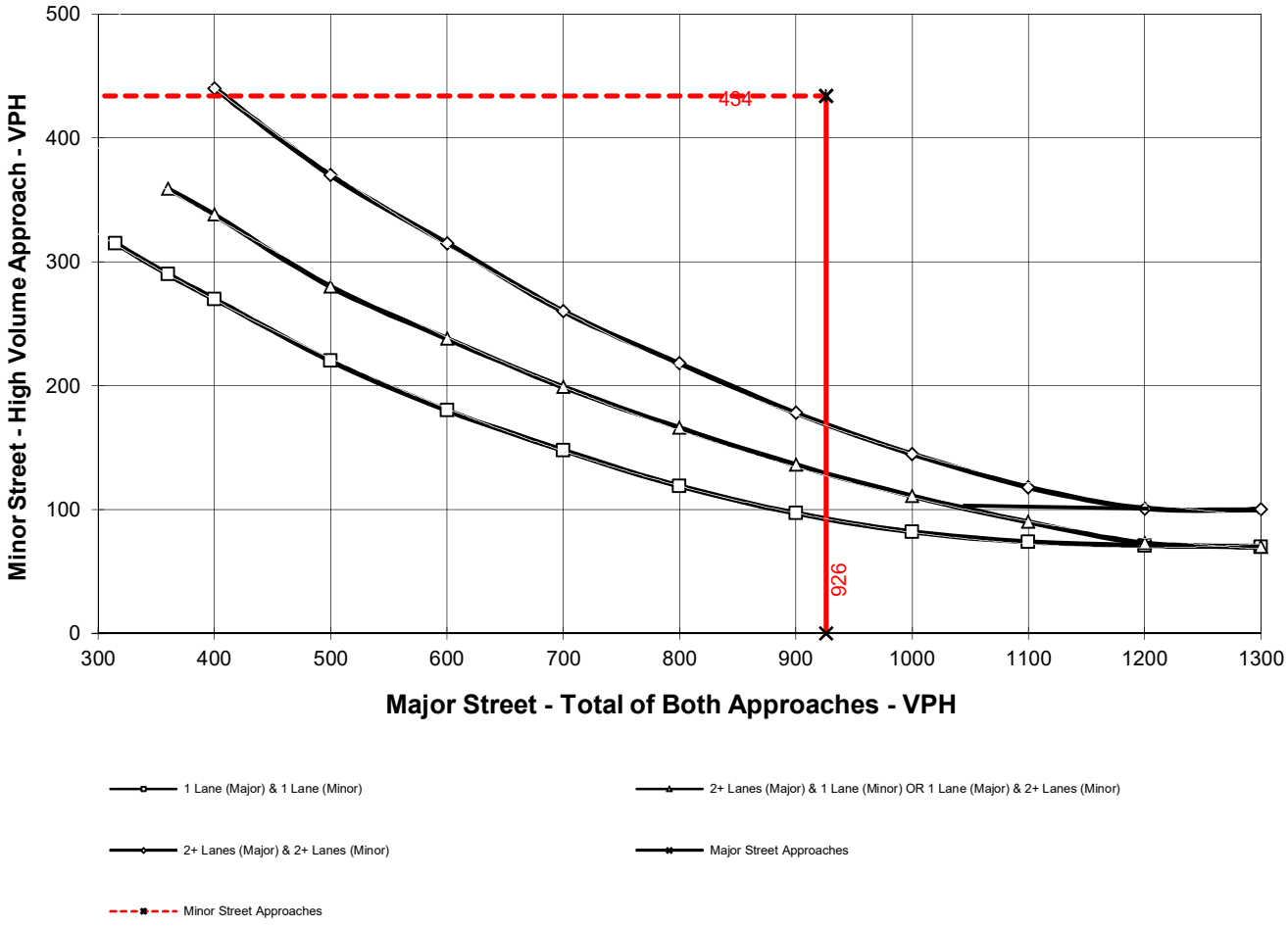
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Holland Road**

High Volume Approach (VPH) = **434**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



** NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing

Major Street Name = **Haun Road**

Total of Both Approaches (VPH) = **1023**

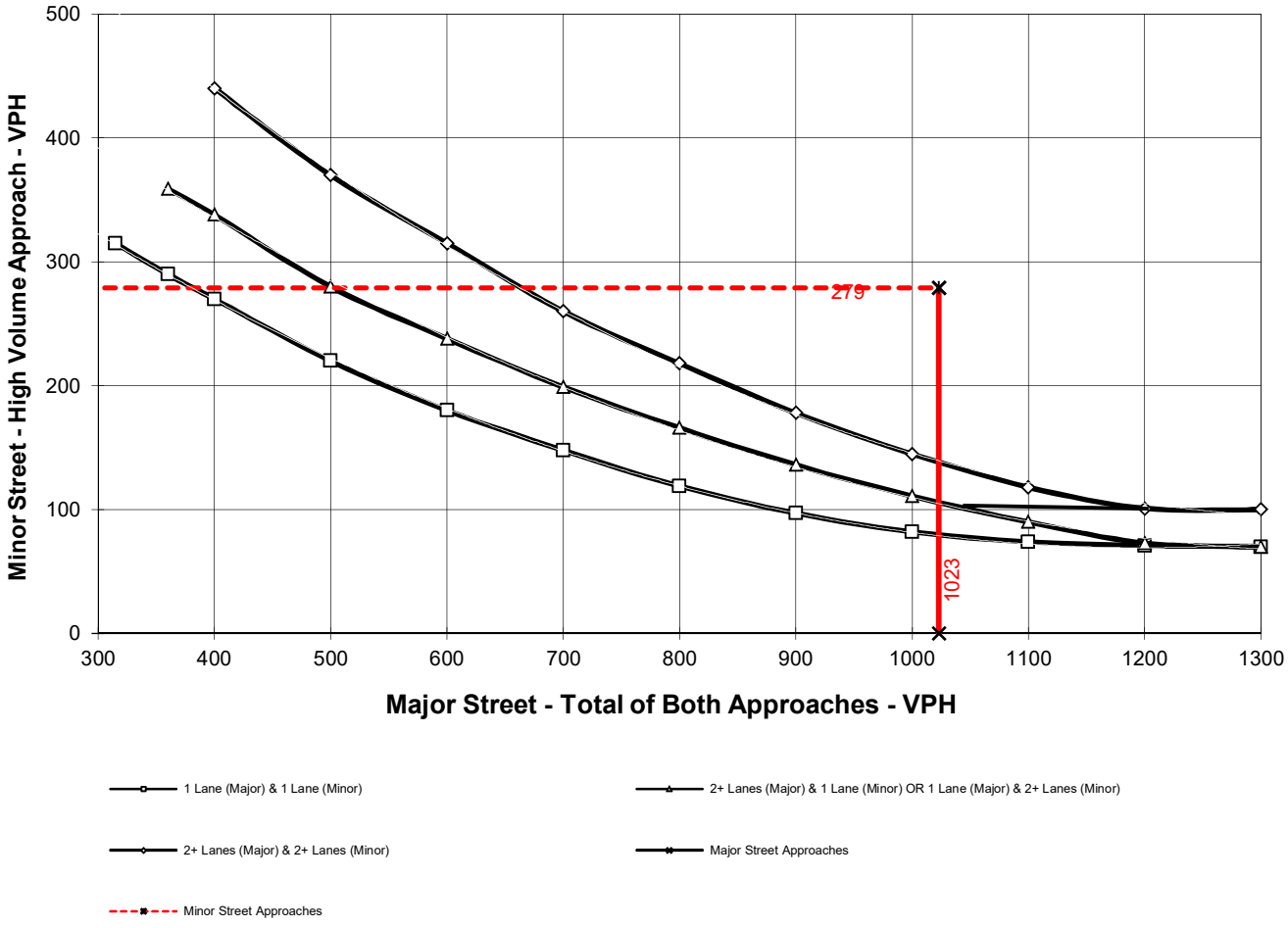
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Garbani Road**

High Volume Approach (VPH) = **279**

Number of Approach Lanes Minor Street = **2**

WARRANTED FOR A SIGNAL



** NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Project

Major Street Name = **Haun Road**

Total of Both Approaches (VPH) = **1437**

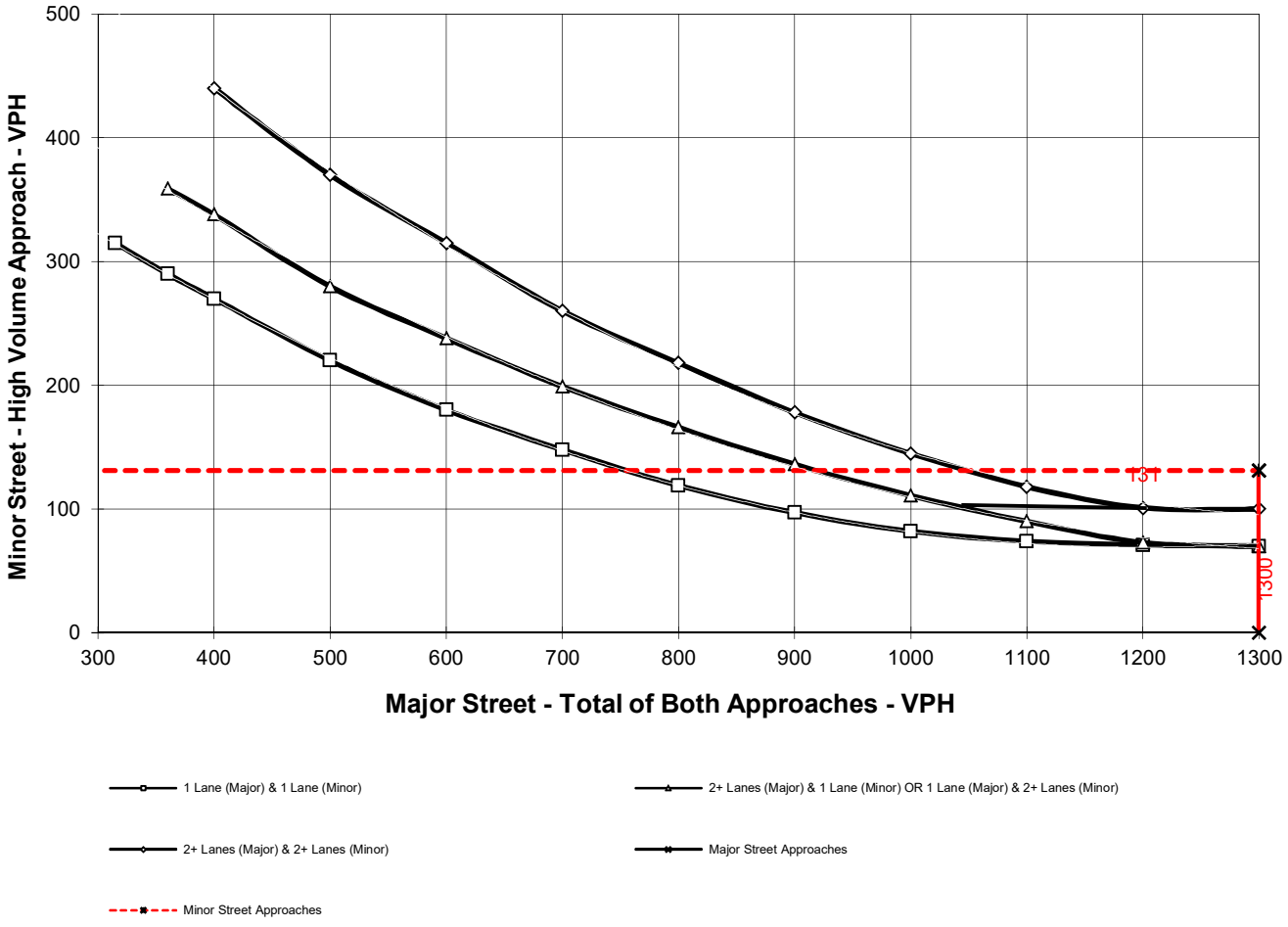
Number of Approach Lanes Major Street = **1**

Minor Street Name = **North Project Access**

High Volume Approach (VPH) = **131**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Project

Major Street Name = **Haun Road**

Total of Both Approaches (VPH) = **1364**

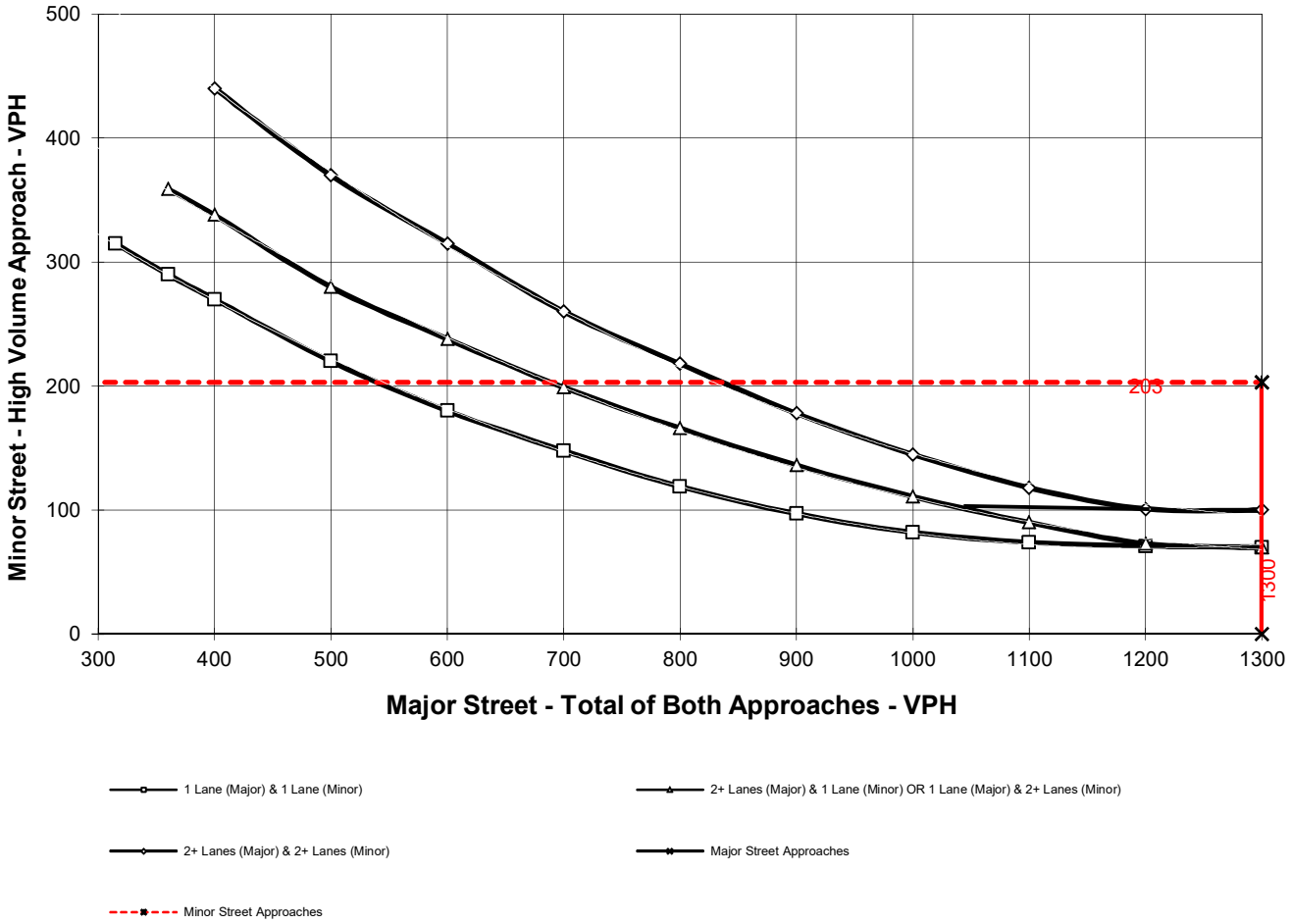
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Central Project Access**

High Volume Approach (VPH) = **203**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project

Major Street Name = **Haun Road**

Total of Both Approaches (VPH) = **1383**

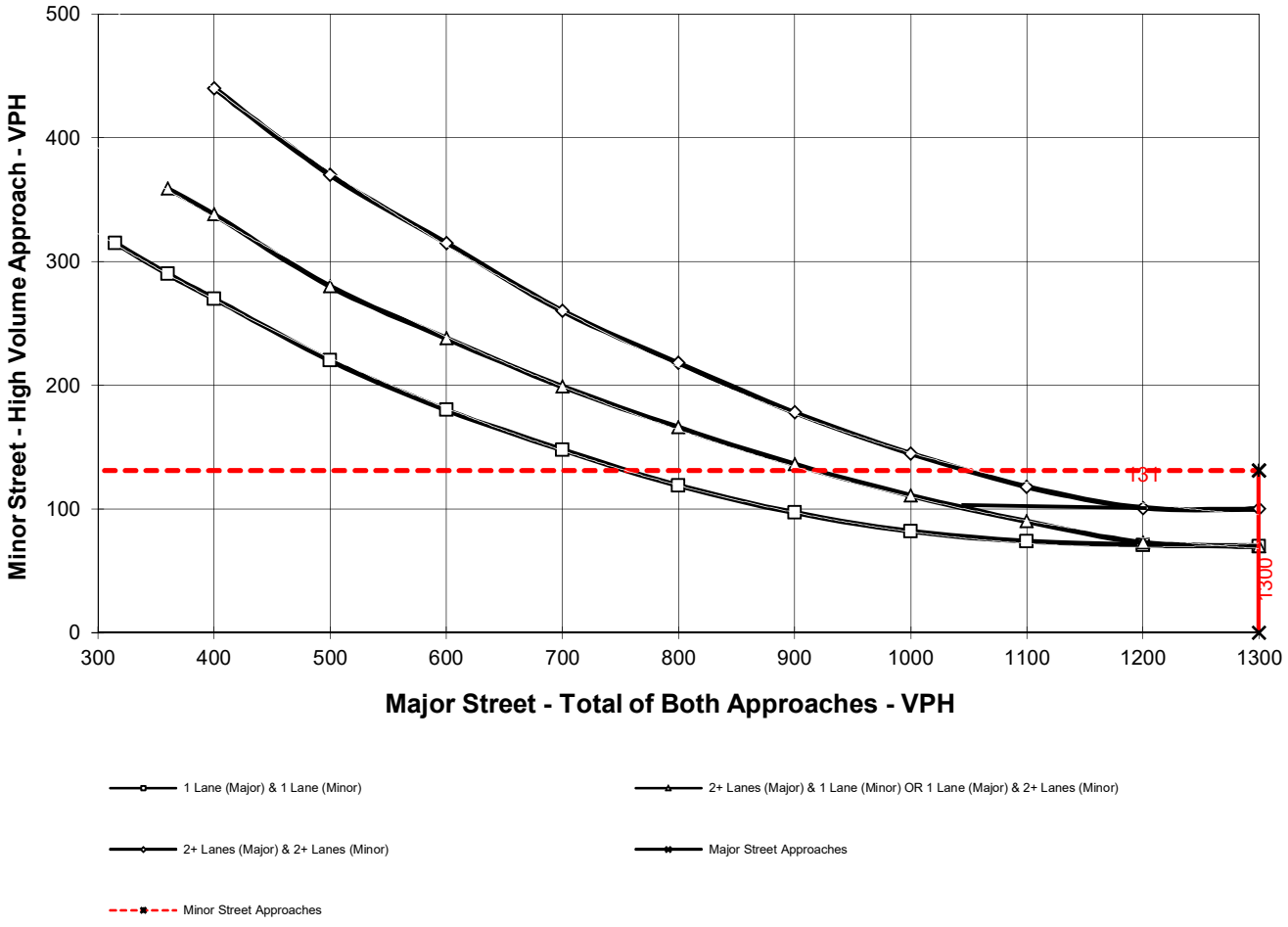
Number of Approach Lanes Major Street = **1**

Minor Street Name = **North Project Access**

High Volume Approach (VPH) = **131**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project

Major Street Name = **Haun Road**

Total of Both Approaches (VPH) = **1294**

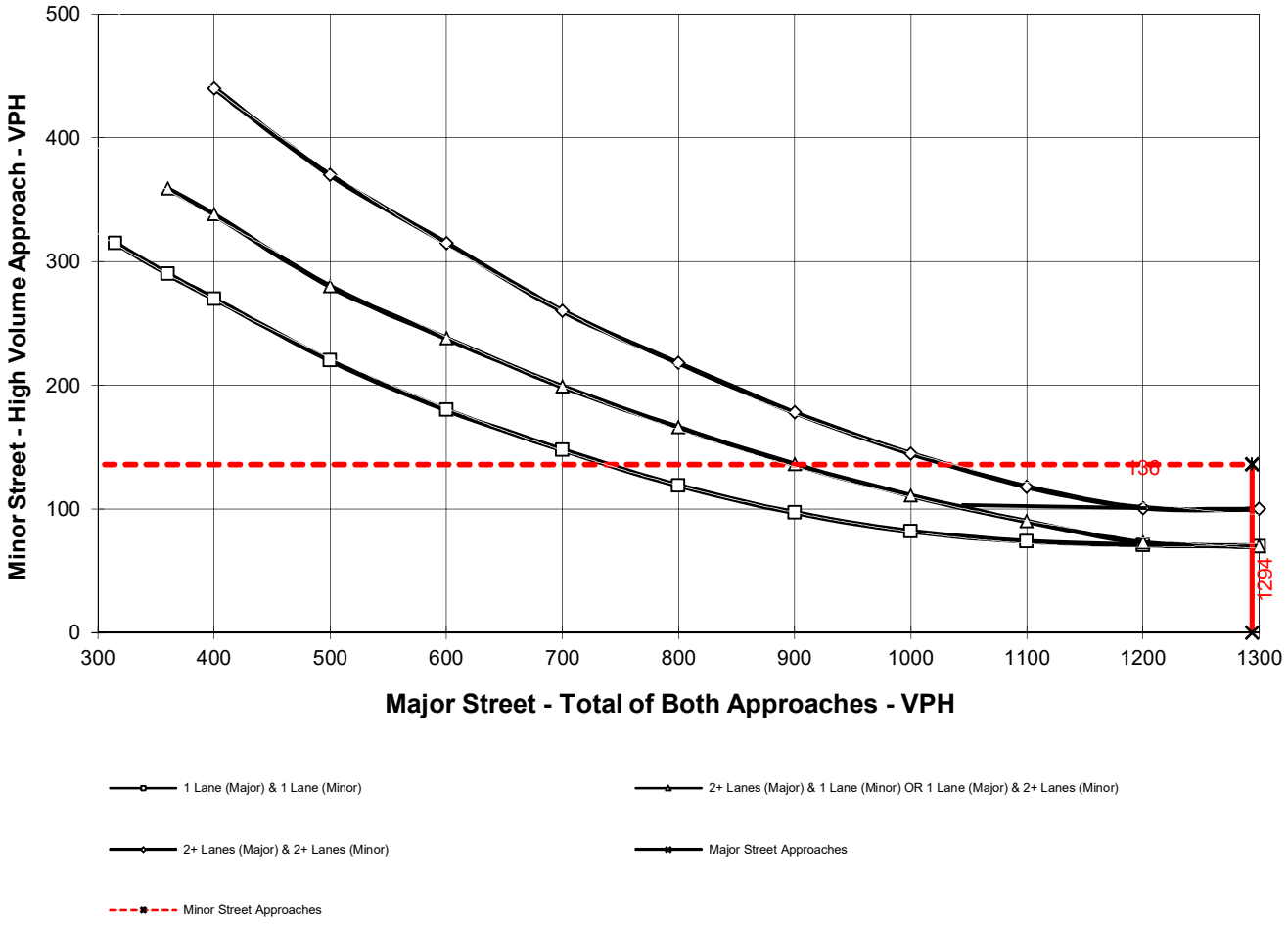
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Central Project Access**

High Volume Approach (VPH) = **136**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - Without Holland Overpass

Major Street Name = **Sherman Road**

Total of Both Approaches (VPH) = **297**

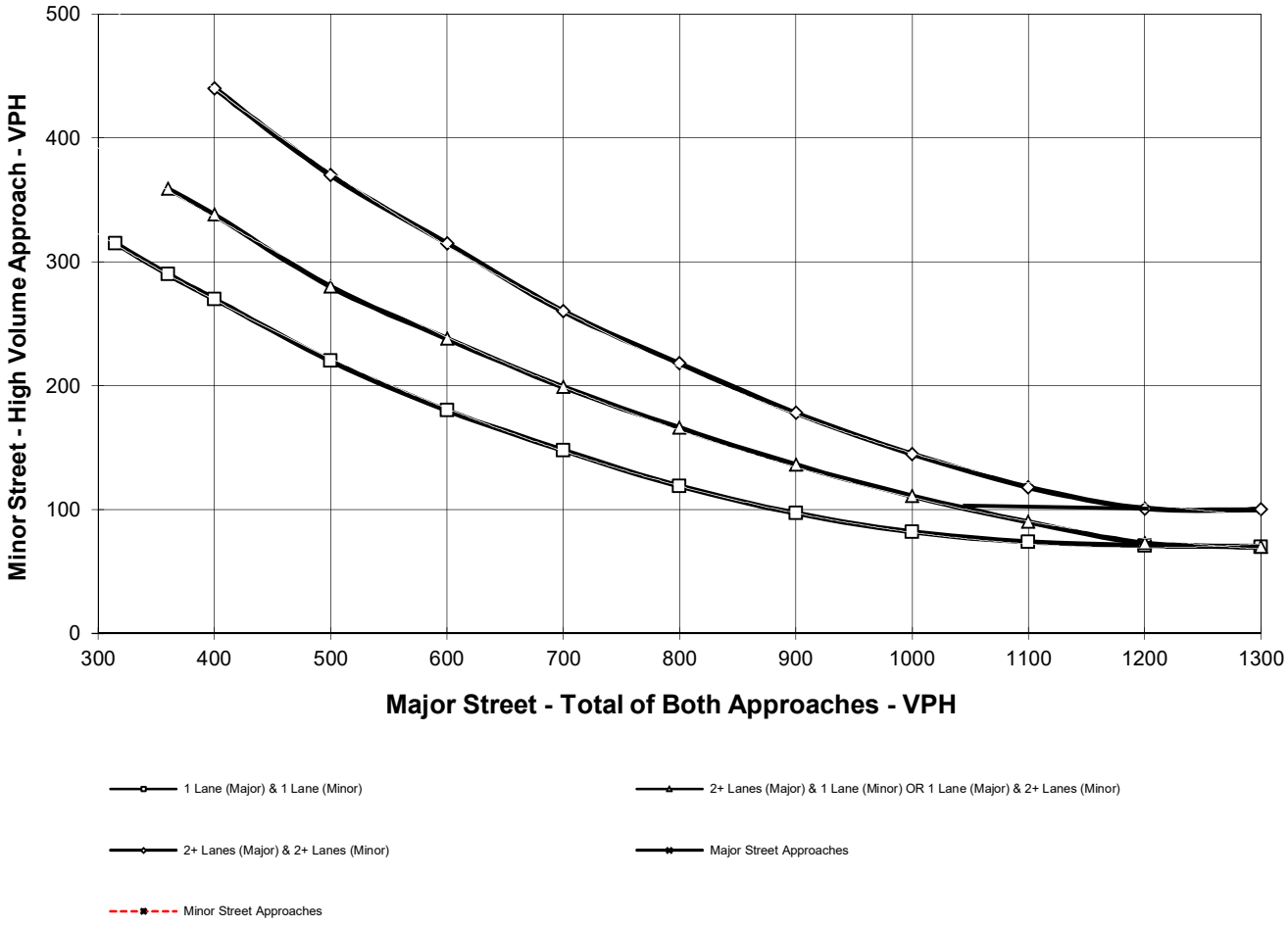
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Garbani Road**

High Volume Approach (VPH) = **233**

Number of Approach Lanes Minor Street = **2**

SIGNAL WARRANT NOT SATISFIED



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - With Holland Overpass

Major Street Name = **Sherman Road**

Total of Both Approaches (VPH) = **288**

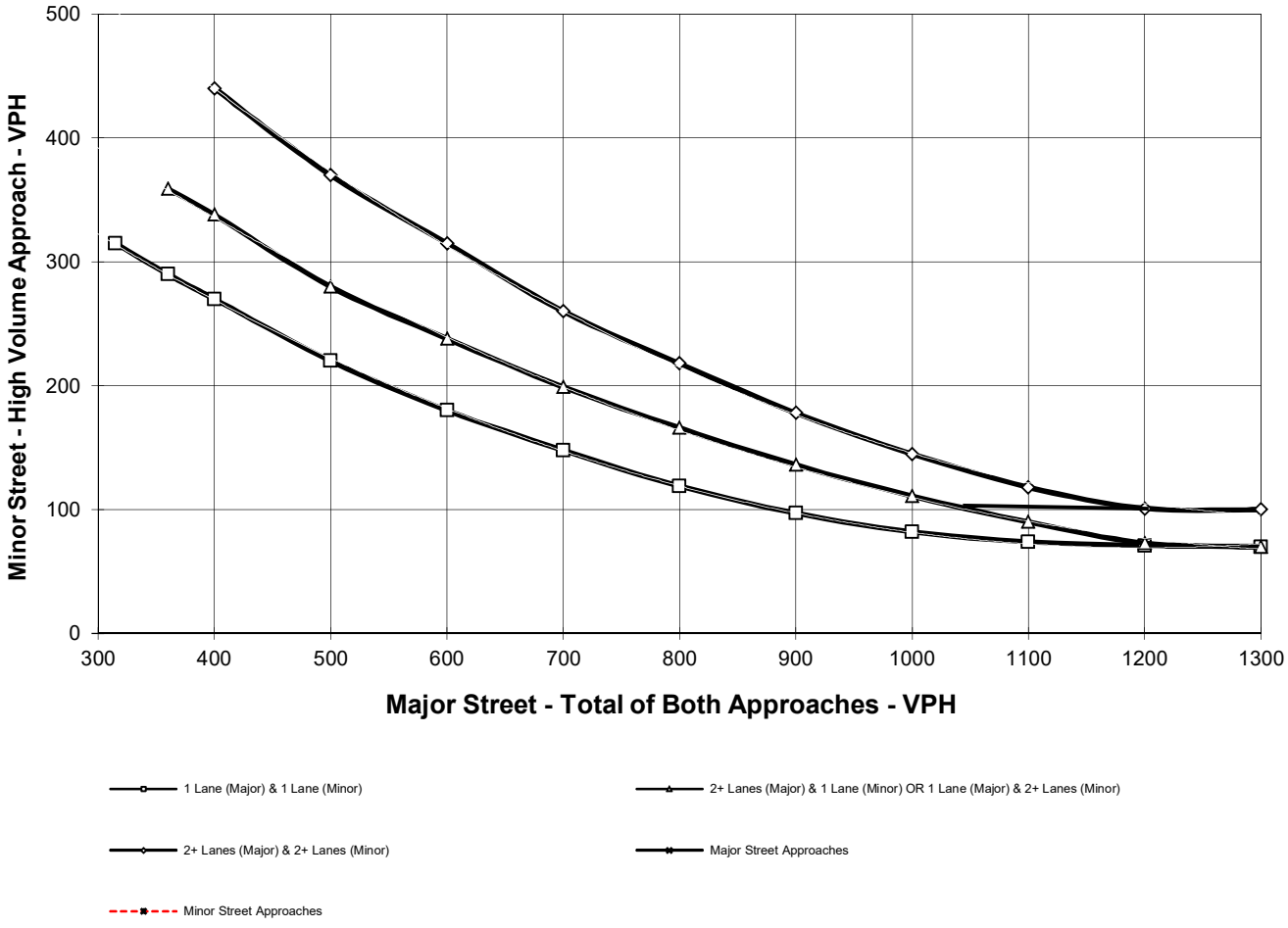
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Garbani Road**

High Volume Approach (VPH) = **232**

Number of Approach Lanes Minor Street = **2**

SIGNAL WARRANT NOT SATISFIED



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - Without Holland Overpass

Major Street Name = **Sherman Raod**

Total of Both Approaches (VPH) = **89**

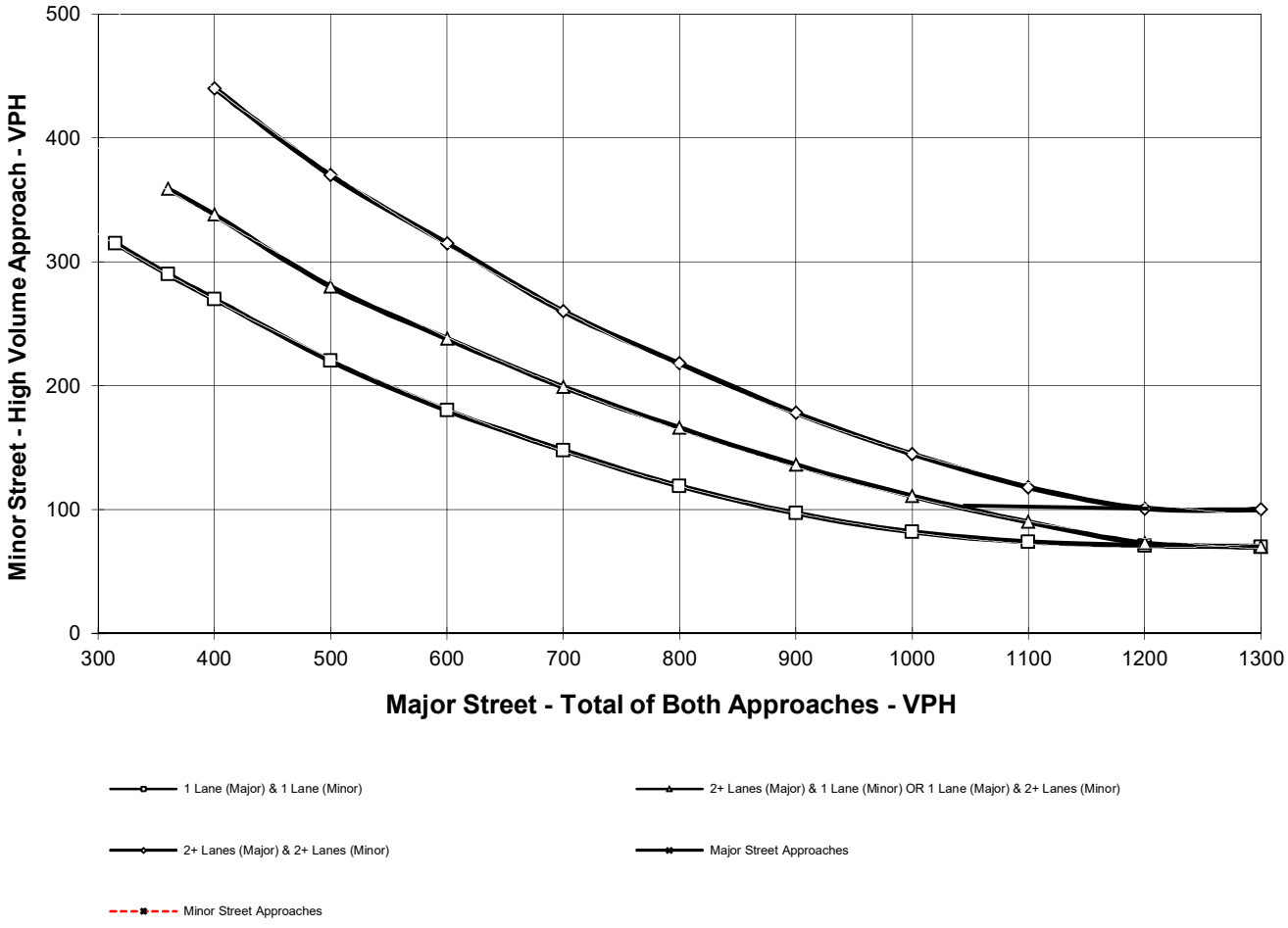
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Multi-Family Residential Access**

High Volume Approach (VPH) = **6**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - With Holland Overpass

Major Street Name = **Sherman Raod**

Total of Both Approaches (VPH) = **89**

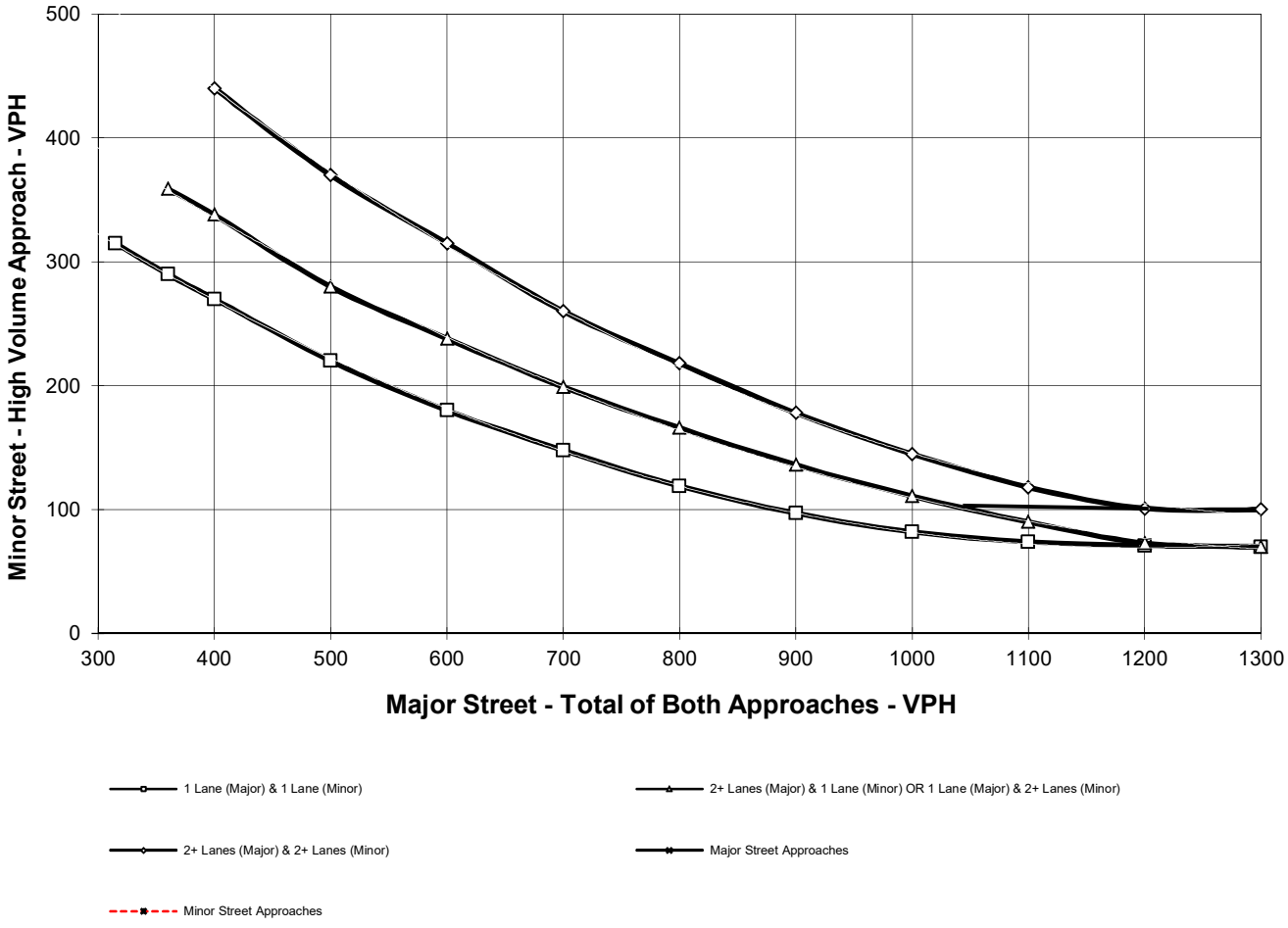
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Multi-Family Residential Access**

High Volume Approach (VPH) = **6**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - Without Holland Overpass

Major Street Name = **Sherman Raod**

Total of Both Approaches (VPH) = **79**

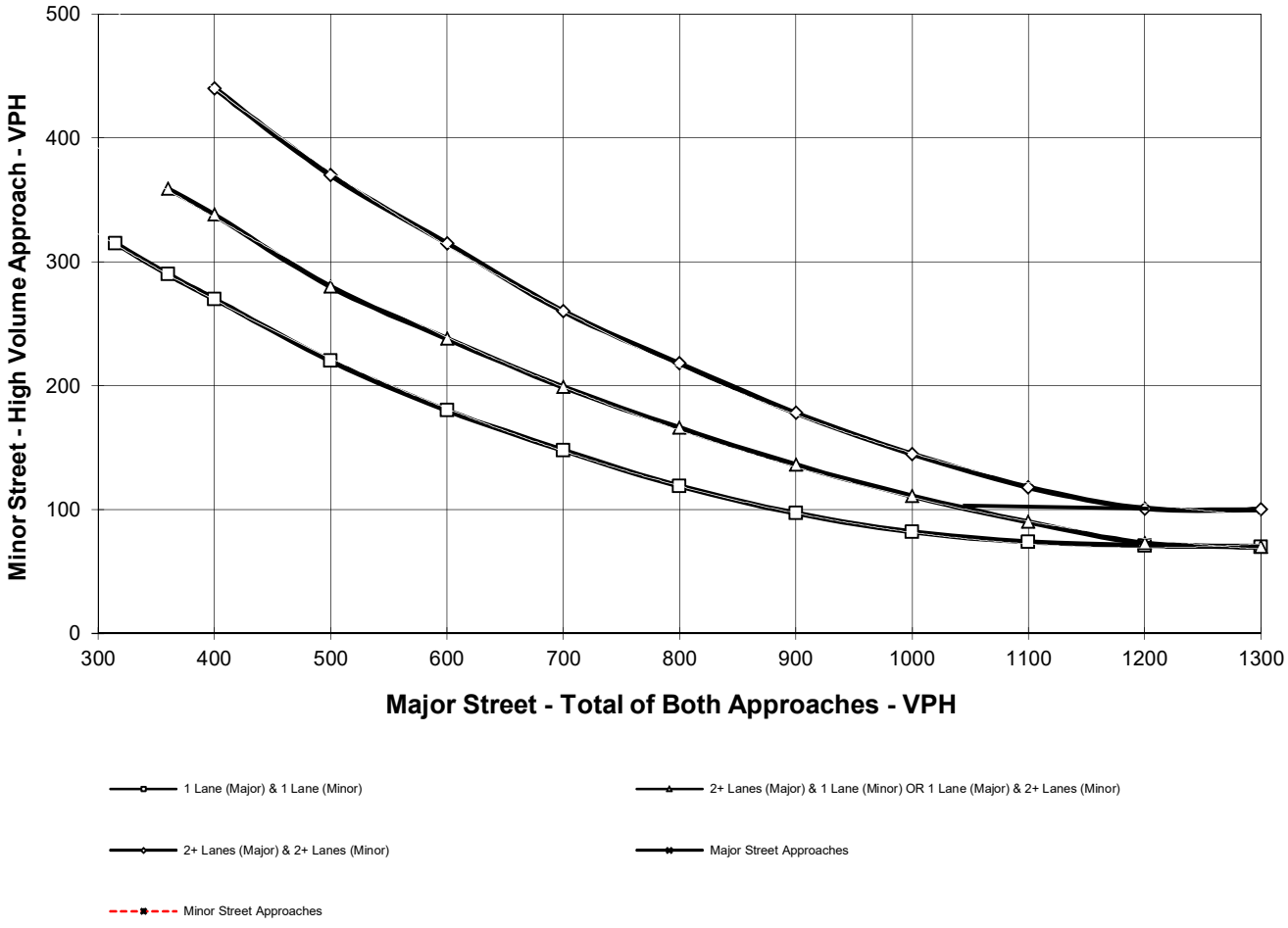
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Single-Family Residential Access**

High Volume Approach (VPH) = **0**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - With Holland Overpass

Major Street Name = **Sherman Raod**

Total of Both Approaches (VPH) = **76**

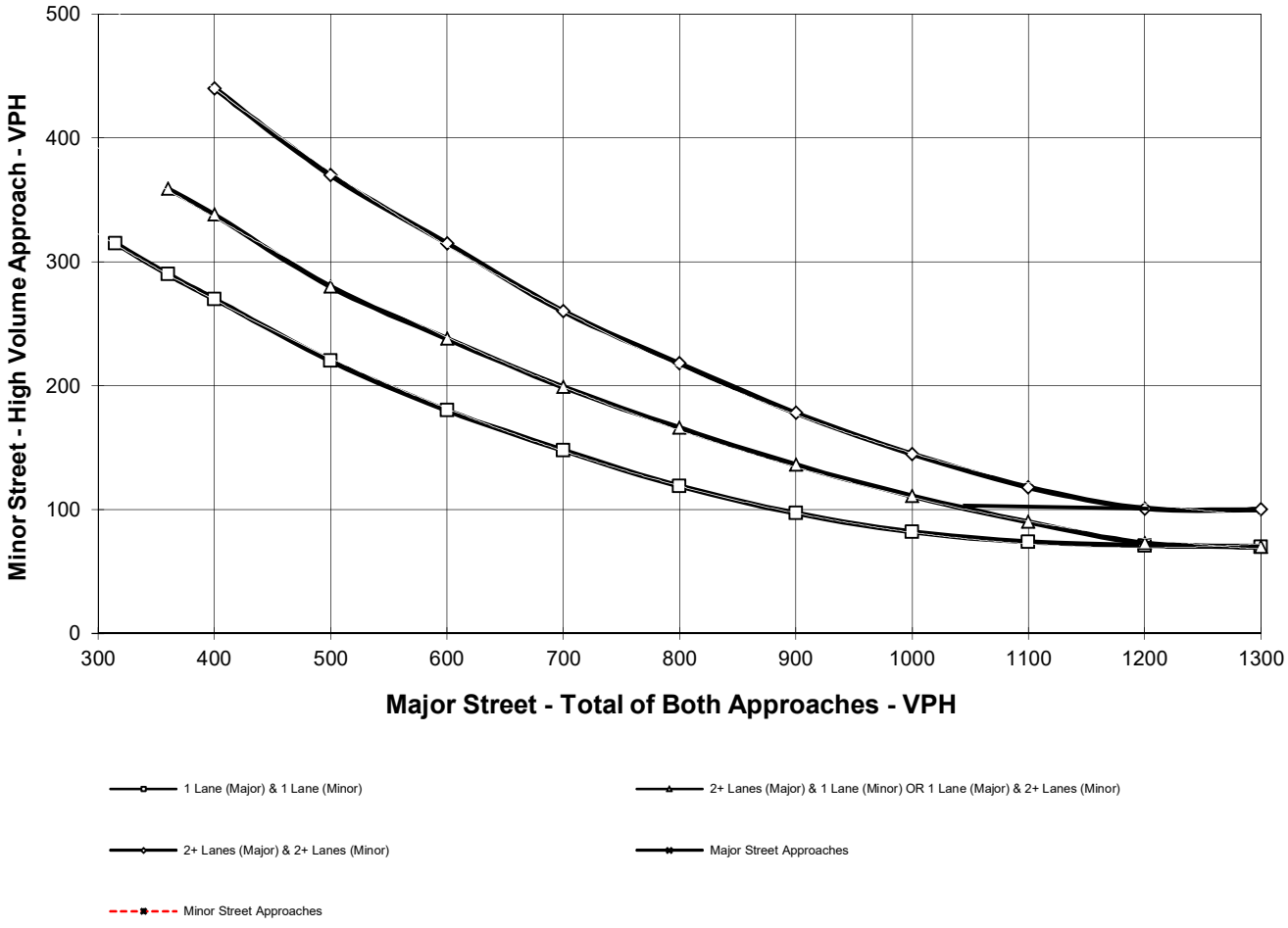
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Single-Family Residential Access**

High Volume Approach (VPH) = **4**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - Without Holland Overpass

Major Street Name = **Garbani Road**

Total of Both Approaches (VPH) = **510**

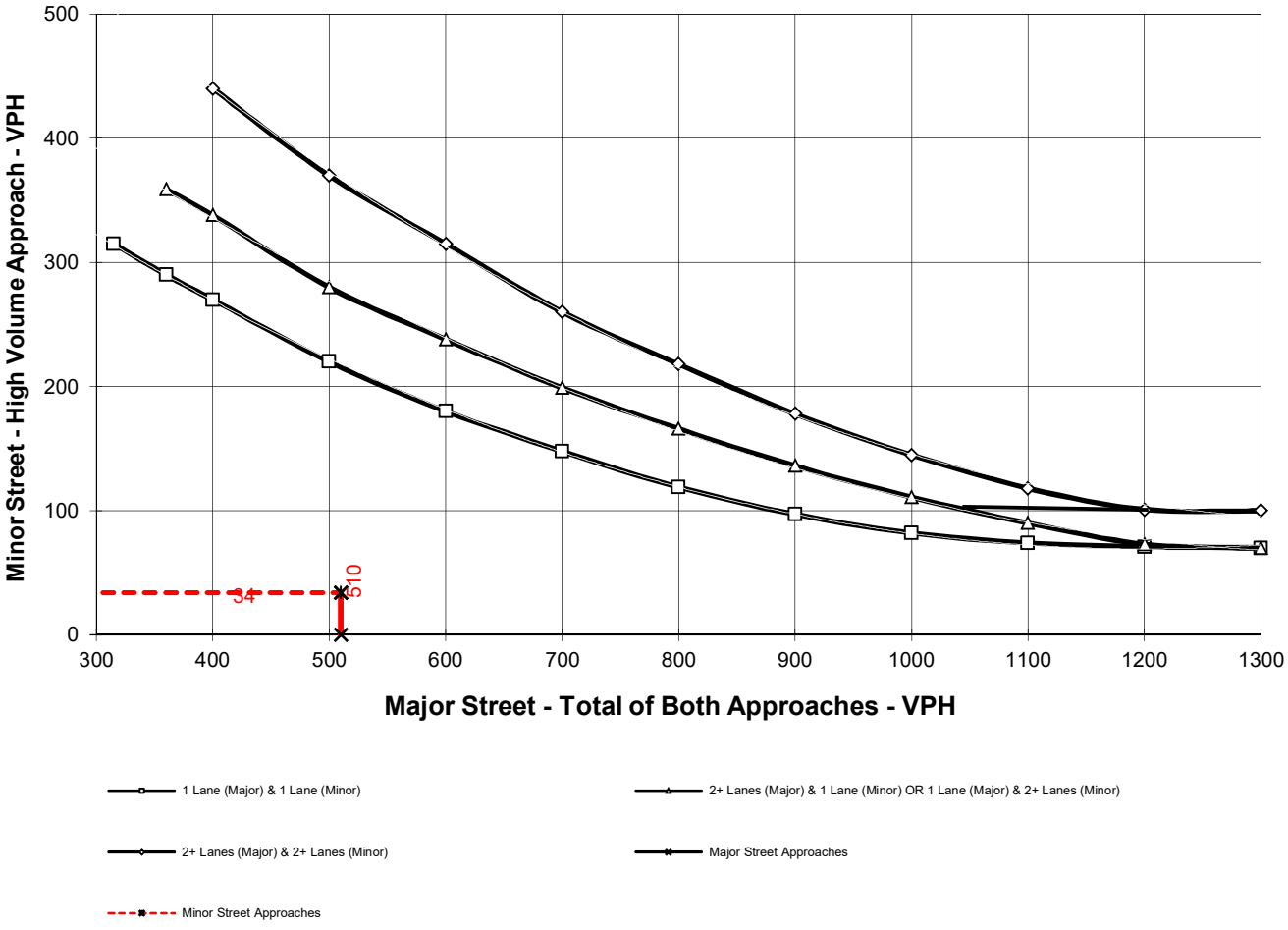
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Multi-Family Residential Access**

High Volume Approach (VPH) = **34**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - With Holland Overpass

Major Street Name = **Garbani Road**

Total of Both Approaches (VPH) = **496**

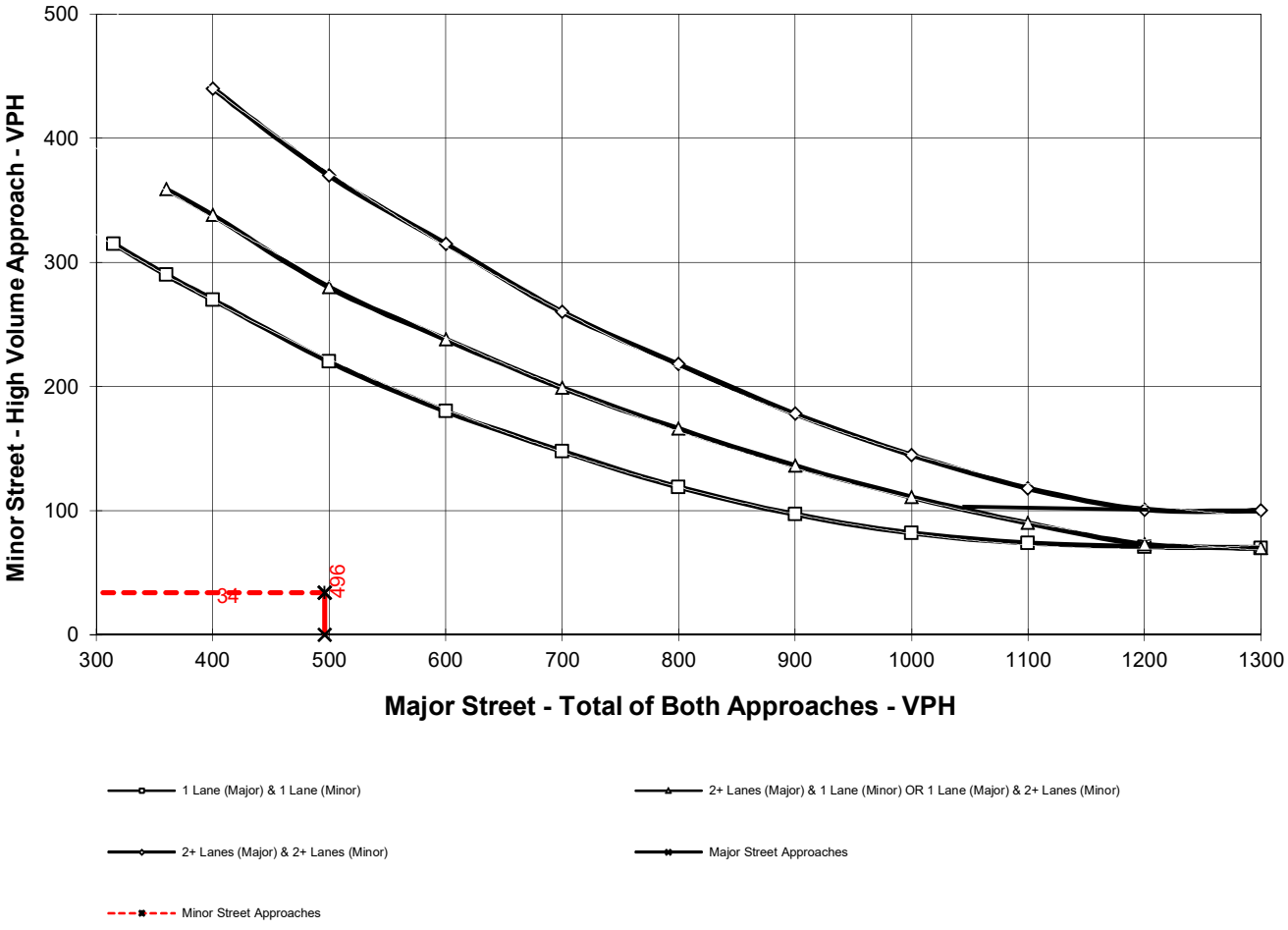
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Multi-Family Residential Access**

High Volume Approach (VPH) = **34**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - Without Holland Overpass

Major Street Name = **Garbani Road**

Total of Both Approaches (VPH) = **535**

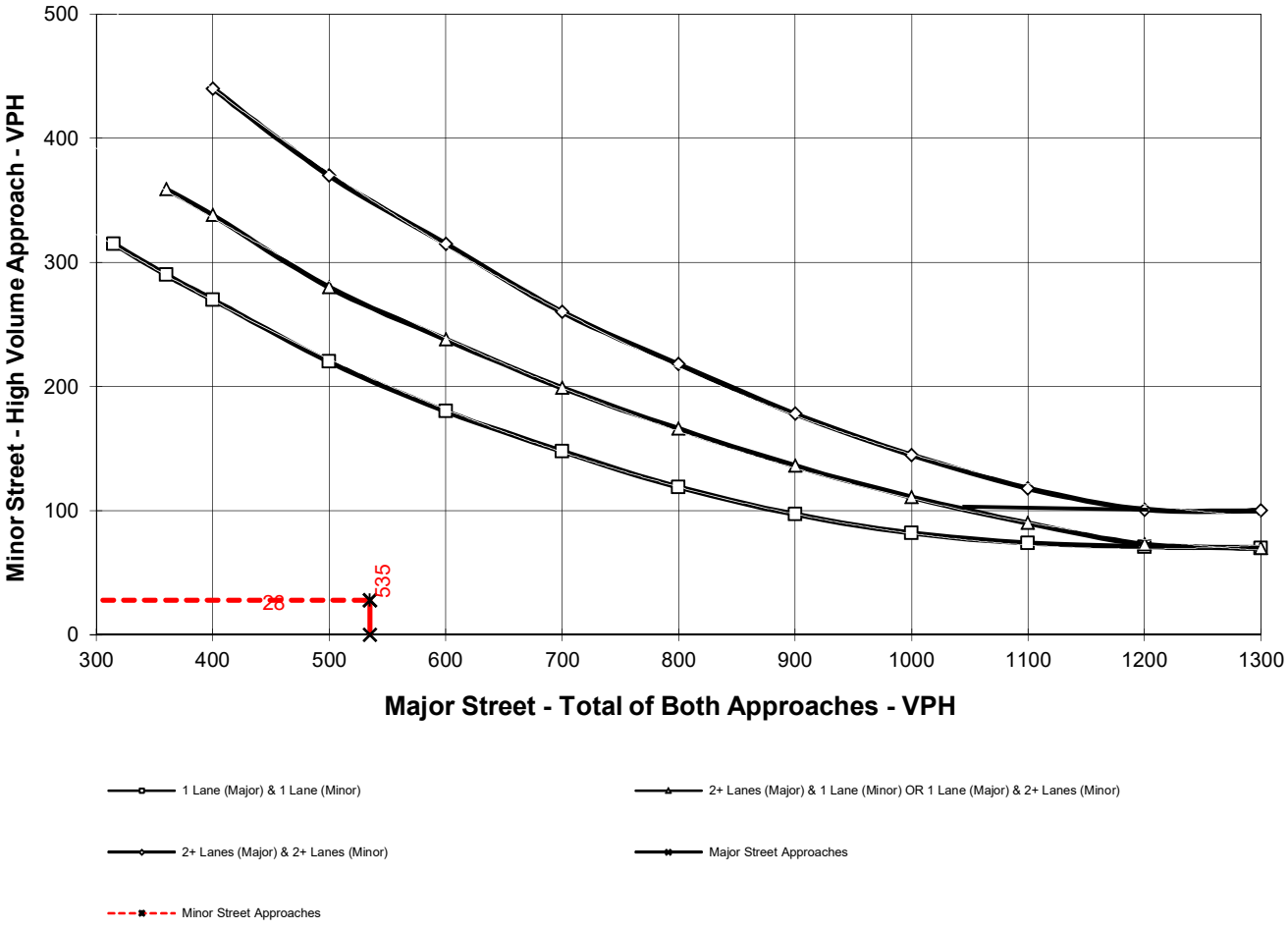
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Commercial Access**

High Volume Approach (VPH) = **28**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - With Holland Overpass

Major Street Name = **Garbani Road**

Total of Both Approaches (VPH) = **521**

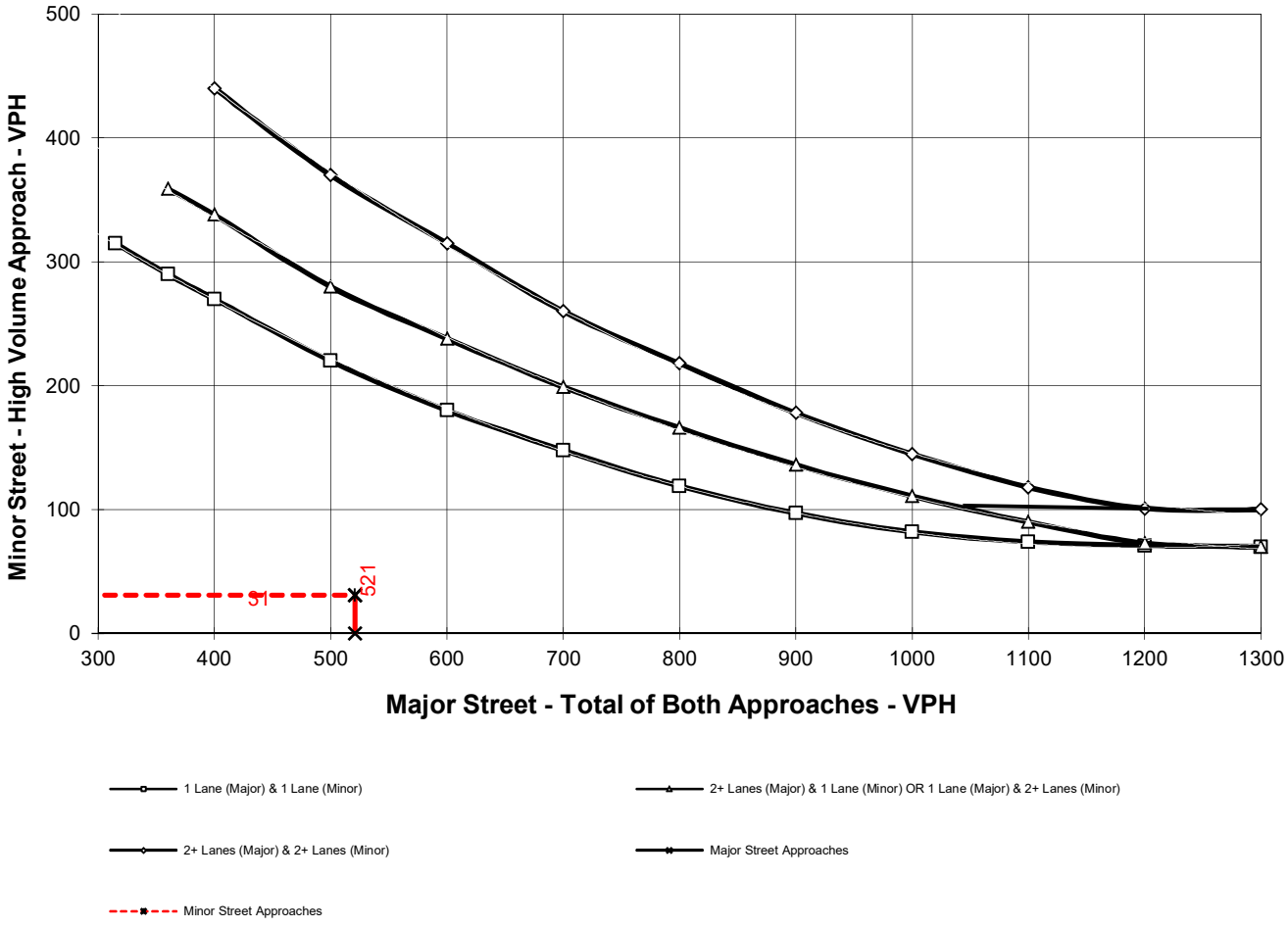
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Commercial Access**

High Volume Approach (VPH) = **31**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - Without Holland Overpass

Major Street Name = **Haun Road**

Total of Both Approaches (VPH) = **2203**

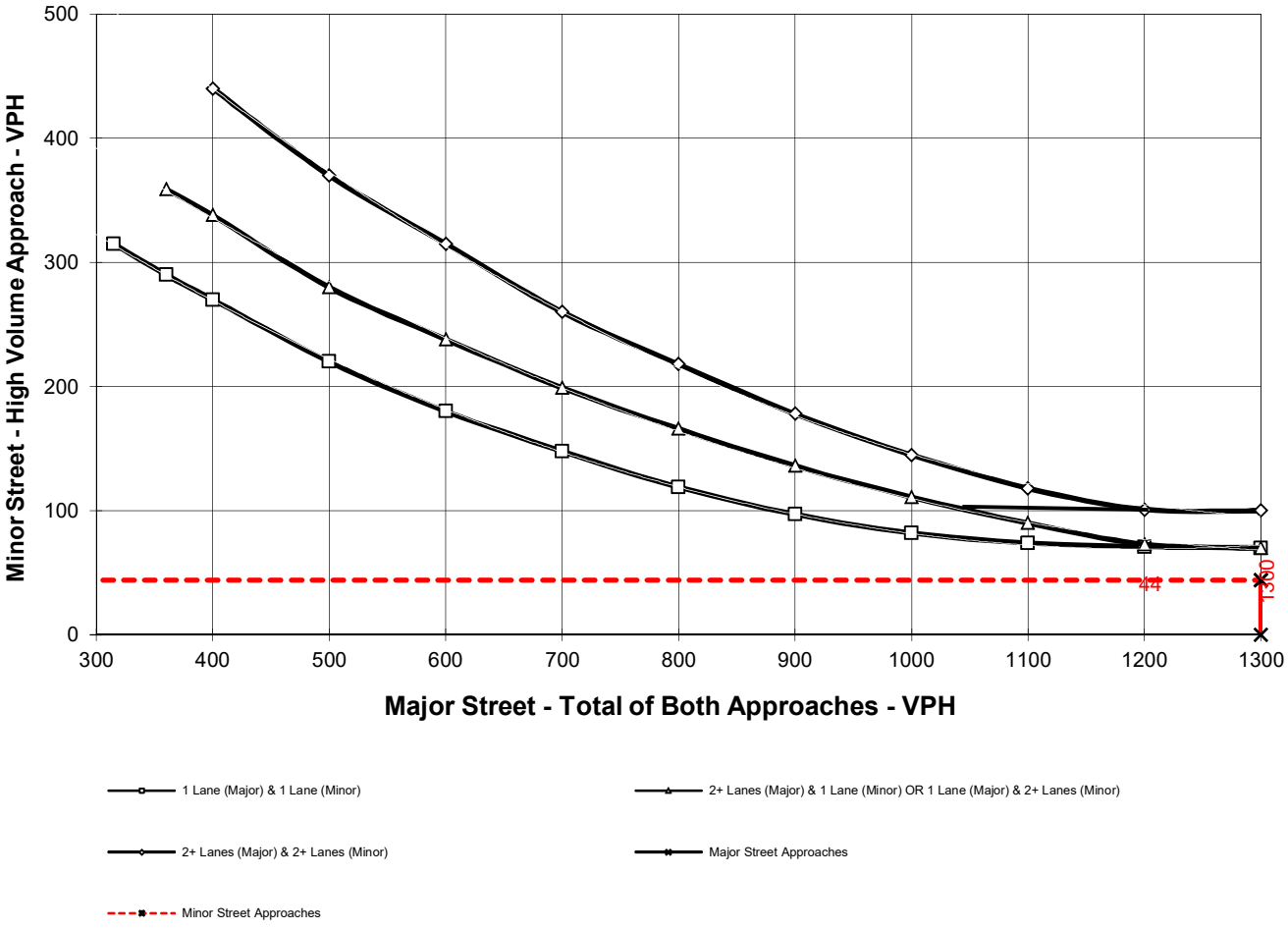
Number of Approach Lanes Major Street = **1**

Minor Street Name = **South Project Access**

High Volume Approach (VPH) = **44**

Number of Approach Lanes Minor Street = **2**

SIGNAL WARRANT NOT SATISFIED



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PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing Plus Ambient Growth Plus Project Plus Cumulative - With Holland Overpass

Major Street Name = **Haun Road**

Total of Both Approaches (VPH) = **1348**

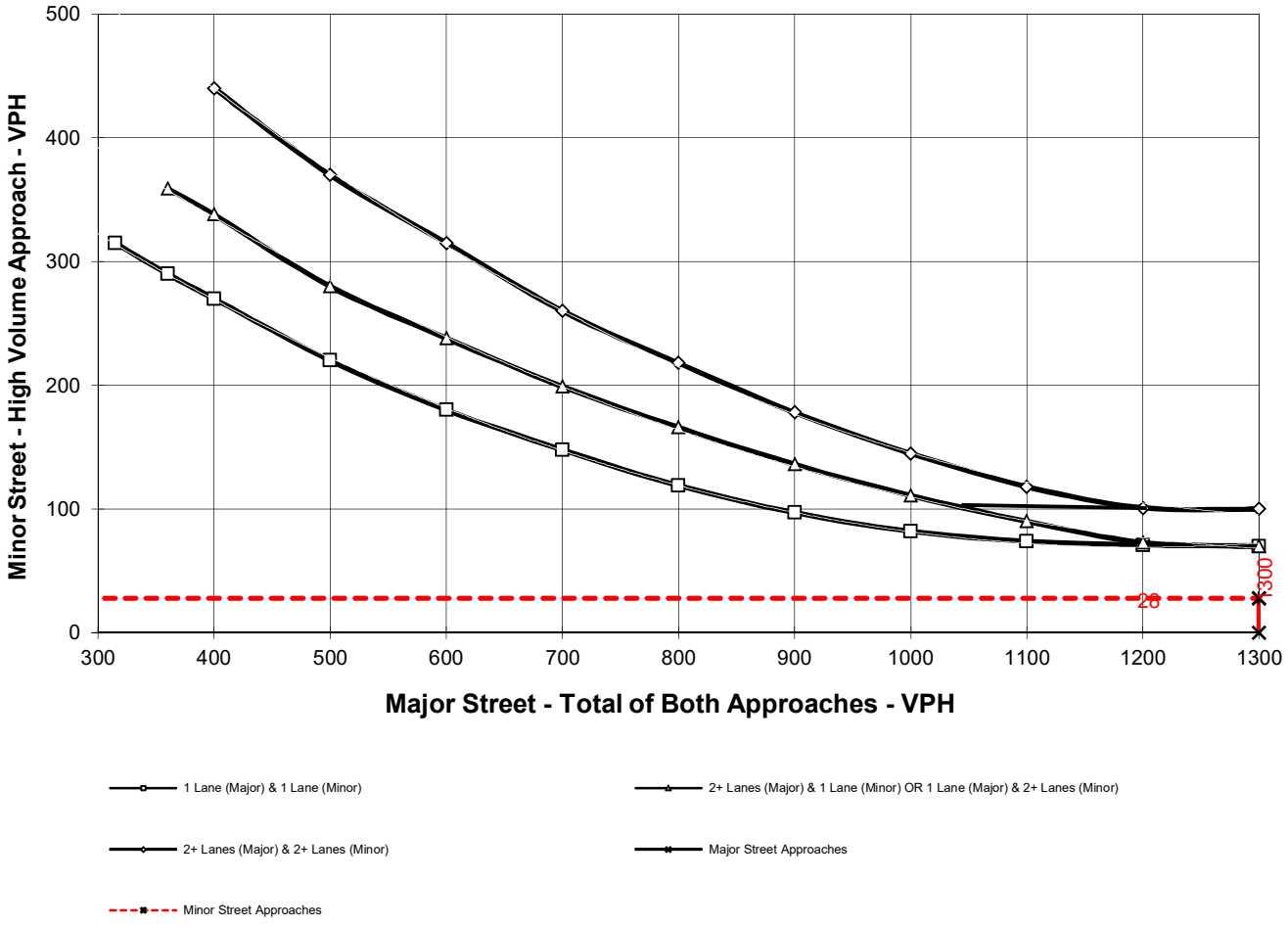
Number of Approach Lanes Major Street = **1**

Minor Street Name = **South Project Access**

High Volume Approach (VPH) = **28**

Number of Approach Lanes Minor Street = **2**

SIGNAL WARRANT NOT SATISFIED



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APPENDIX F

TRIP GENERATION COMPARISON

Appendix F
Trip Generation Comparison[1]

Project Land Uses											
		ITE		Peak Hour							
				Morning			Evening				
Descriptor	Land Use	Land Use	Units[2]	Inbound	Outbound	Total	Inbound	Outbound	Total	Daily	
Trip Generation Rates	Industrial Park	130	TSF	0.32	0.08	0.40	0.08	0.32	0.40	3.37	
	Multi-Family Housing (Low-Rise)	220	DU	0.11	0.35	0.46	0.35	0.21	0.56	7.32	
	Single-Family Detached Residential	210	DU	0.19	0.56	0.74	0.62	0.37	0.99	9.44	
	Commercial Retail	820	TSF	(0.50(X) + 151.78) 62% In, 38% Out			(0.74Ln(X) + 2.89) 48% In 52% Out			(0.68Ln(X) + 5.57)	
	High-Turnover (Sit-Down) Restaurant	932	TSF	5.47	4.47	9.94	6.06	3.71	9.77	112.18	

M-SC / I-P Land Uses										
		ITE		Peak Hour						
				Morning			Evening			
Descriptor	Land Use	Land Use	Units[2]	Inbound	Outbound	Total	Inbound	Outbound	Total	Daily
Trip Generation Rates	General Light Industrial	110	TSF	0.62	0.08	0.70	0.08	0.55	0.63	4.96
	Industrial Park	130	TSF	0.32	0.08	0.40	0.08	0.32	0.40	3.37
	Manufacturing	140	TSF	0.48	0.14	0.62	0.21	0.46	0.67	3.82
	Warehousing	150	TSF	0.13	0.04	0.17	0.05	0.14	0.19	1.74
	Mini Warehouse	151	TSF	0.06	0.04	0.10	0.08	0.09	0.17	1.51
	High-Cube Warehouse Distribution Center and Short-Term Storage Warehouse	154	TSF	0.06	0.04	0.10	0.08	0.09	0.17	1.51
	Health / Fitness Club	492	TSF	0.67	0.64	1.31	1.97	1.48	3.45	--
	Athletic Club	493	TSF	1.93	1.23	3.16	3.90	2.39	6.29	--
	Church	560	TSF	0.20	0.13	0.33	0.22	0.27	0.49	6.95
	Synagogue	561	TSF	1.52	0.89	2.41	1.66	1.26	2.92	--
	Mosque	562	TSF	2.83	1.39	4.22	--	--	18.39	--
	Daycare Center	565	TSF	5.83	5.17	11.00	5.23	5.89	11.12	47.62
	General Office Urban/Suburban	710	TSF	1.00	0.16	1.16	0.18	0.97	1.15	9.74
	General Office Dense Multi-Use Urban	710	TSF	0.71	0.12	0.83	0.15	0.72	0.87	--
	General Office Center City Core	710	TSF	--	--	0.50	--	--	0.43	--
	Corporate Headquarters	714	TSF	0.68	0.04	0.72	0.02	0.58	0.60	7.95
	Single Tenant Office Building	715	TSF	1.58	0.20	1.78	0.26	1.45	1.71	11.25
	Medical / Dental Office	720	TSF	2.17	0.61	2.78	0.97	2.49	3.46	34.80
	Government Office Building	730	TSF	2.51	0.83	3.34	0.43	1.28	1.71	22.59
	State Motor Vehicles Department	731	TSF	3.09	2.24	9.84	1.98	3.22	5.20	11.21
	U.S. Post Office	732	TSF	4.31	3.97	8.28	5.72	5.49	11.21	103.94
	Government Office Complex	733	TSF	1.90	0.23	2.13	0.87	1.95	2.82	33.98
	Office Park	750	TSF	1.28	0.16	1.44	0.07	1.00	1.07	11.07
	R & D Center	760	TSF	0.32	0.10	0.42	0.07	0.42	0.49	11.26
	Business Park	770	TSF	0.24	0.16	0.40	0.19	0.23	0.42	12.44
	Tractor Supply Store	810	TSF	--	--	--	0.66	0.74	1.40	--
	Construction Equipment Store	811	TSF	--	--	--	0.28	0.71	0.99	--
	Building Materials / Lumber	812	TSF	1.04	0.81	1.85	2.12	2.21	4.33	50.70
	Hardware / Paint Store	816	TSF	0.58	0.50	1.08	1.26	1.42	2.68	9.14
	Nursery (Garden Center)	817	TSF	--	--	2.43	--	--	6.94	68.10
	Nursery (Wholesale)	818	TSF	--	--	2.40	--	--	5.18	39.00
	Shopping Center[4]	820	TSF	0.58	0.36	0.94	1.83	1.98	3.81	37.75
	Home Improvement Superstore	862	TSF	0.89	0.68	1.57	1.14	1.19	2.33	30.74
	Walk-In Bank	911	TSF	--	--	--	5.34	6.79	12.13	--
	Drive-In Bank	912	TSF	5.51	3.99	9.50	10.23	10.22	20.45	100.03
	Quality Restaurant	931	TSF	--	--	0.73	5.23	2.57	7.80	83.84
	High-Turnover (Sit-Down) Restaurant	932	TSF	5.47	4.47	9.94	6.06	3.71	9.77	112.18
	Fast Food Restaurant without Drive-Thru	933	TSF	15.06	10.04	25.10	14.17	14.17	28.34	346.23
	Fast Food Restaurant with Drive-Thru	934	TSF	20.50	19.69	40.19	16.99	15.68	32.67	470.95
	Coffee / Donut Shop without Drive-Thru	936	TSF	51.58	49.56	101.14	18.16	18.15	36.31	--
	Coffee / Donut Shop with Drive-Thru	937	TSF	45.38	43.61	88.99	21.69	21.69	43.38	820.38
	Coffee / Donut Shop Drive-Thru Only	938	TSF	168.52	168.52	337.04	41.67	41.66	83.33	2000.00
	Bread / Bagel Shop without Drive-Thru	939	TSF	33.15	37.39	70.54	14.00	14.00	28.00	--
	Bread / Bagel Shop with Drive-Thru	940	TSF	19.33	19.32	38.65	9.32	9.70	19.02	--
	Quick Lube Vehicle Shop	941	SB	2.01	0.99	3.00	2.72	2.13	4.85	40.00
	Automobile Care Center	942	TSF	1.49	0.76	2.25	1.49	1.62	3.11	--
	Automobile Parts and Service Center	943	TSF	1.43	0.53	1.96	0.90	1.36	2.26	16.28
	Gasoline / Service Station	944	FP	5.49	5.49	10.98	7.02	7.01	14.03	172.01
	Service Station with Convenience Market	945	FP	6.36	6.11	12.47	11.18	11.18	22.36	205.36
	Super Convenience Mkt/Gas Station	960	FP	14.04	14.04	28.08	11.48	11.48	22.96	230.52

Notes:

(1) Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

(2) TSF = Thousand Square Feet; DU = Dwelling Units; SB = Service Bays; FP = Fueling Position

(3) Based on the trip generation equation for this land use.

(4) Trip generation based on the trip generation rates and not equations for this land use.

APPENDIX G

SYNCHRO SIGNAL TIMING AND DELAY REPORTS

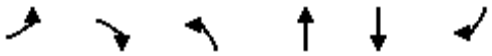
EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PLUS CUMULATIVE (WITHOUT HOLLAND OVERPASS)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	0	355	1	0	1	417	566	0	0	606	41
Future Volume (vph)	65	0	355	1	0	1	417	566	0	0	606	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.850			0.850						0.991	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1583	0	1770	1583	0	1770	1863	0	1863	3507	0
Flt Permitted	0.757			0.357			0.950					
Satd. Flow (perm)	1410	1583	0	665	1583	0	1770	1863	0	1863	3507	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		601			324						6	
Link Speed (mph)		35			30			50			50	
Link Distance (ft)		623			578			270			2533	
Travel Time (s)		12.1			13.1			3.7			34.5	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	84	0	461	1	0	1	542	735	0	0	787	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	461	0	1	1	0	542	735	0	0	840	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4								
Detector Phase	8	8		4	4		5	2		1	6	
Switch Phase												

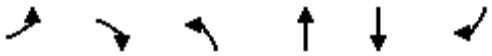
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	24.0	24.0		24.0	24.0		53.0	85.0		11.0	43.0	
Total Split (%)	20.0%	20.0%		20.0%	20.0%		44.2%	70.8%		9.2%	35.8%	
Maximum Green (s)	20.0	20.0		20.0	20.0		49.0	81.0		7.0	39.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lag	Lead		Lag	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	11.2	11.2		11.2	11.2		41.0	96.8			49.9	
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.34	0.81			0.42	
v/c Ratio	0.65	0.67		0.02	0.00		0.90	0.49			0.57	
Control Delay	73.2	5.2		46.0	0.0		55.1	2.5			30.5	
Queue Delay	0.0	0.0		0.0	0.0		53.7	1.3			0.0	
Total Delay	73.2	5.2		46.0	0.0		108.8	3.8			30.5	
LOS	E	A		D	A		F	A			C	
Approach Delay		15.7			23.0			48.3			30.5	
Approach LOS		B			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 118 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 36.0		Intersection LOS: D	
Intersection Capacity Utilization 77.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 11: Haun Road & Garbani Road



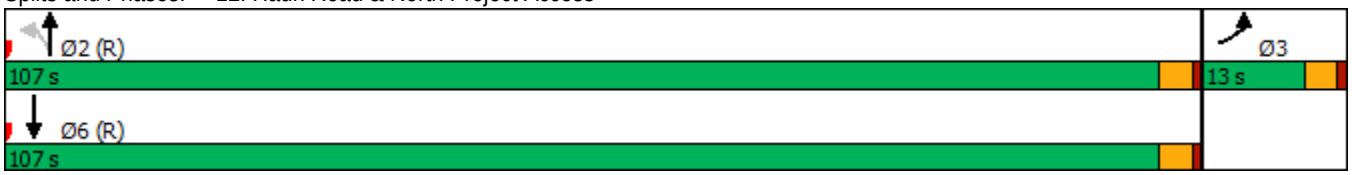
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	10	16	957	918	44
Future Volume (vph)	24	10	16	957	918	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.959				0.993	
Flt Protected	0.966		0.950			
Satd. Flow (prot)	1726	0	1770	1863	3514	0
Flt Permitted	0.966		0.282			
Satd. Flow (perm)	1726	0	525	1863	3514	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	11				18	
Link Speed (mph)	25			50	50	
Link Distance (ft)	289			328	270	
Travel Time (s)	7.9			4.5	3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	25	11	17	1007	966	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	17	1007	1012	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	3			2	6	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases			2			
Detector Phase	3		2	2	6	
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	11.0		11.0	11.0	11.0	
Total Split (s)	13.0		107.0	107.0	107.0	
Total Split (%)	10.8%		89.2%	89.2%	89.2%	
Maximum Green (s)	9.0		103.0	103.0	103.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	2.0		2.0	2.0	2.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		C-Min	C-Min	C-Min	
Act Effct Green (s)	5.9		108.9	108.9	108.9	
Actuated g/C Ratio	0.05		0.91	0.91	0.91	
v/c Ratio	0.38		0.04	0.60	0.32	
Control Delay	53.0		0.4	4.2	0.6	
Queue Delay	0.1		0.0	0.8	0.2	
Total Delay	53.1		0.4	5.0	0.8	
LOS	D		A	A	A	
Approach Delay	53.1			4.9	0.8	
Approach LOS	D			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 30 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 3.7		Intersection LOS: A	
Intersection Capacity Utilization 65.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 12: Haun Road & North Project Access



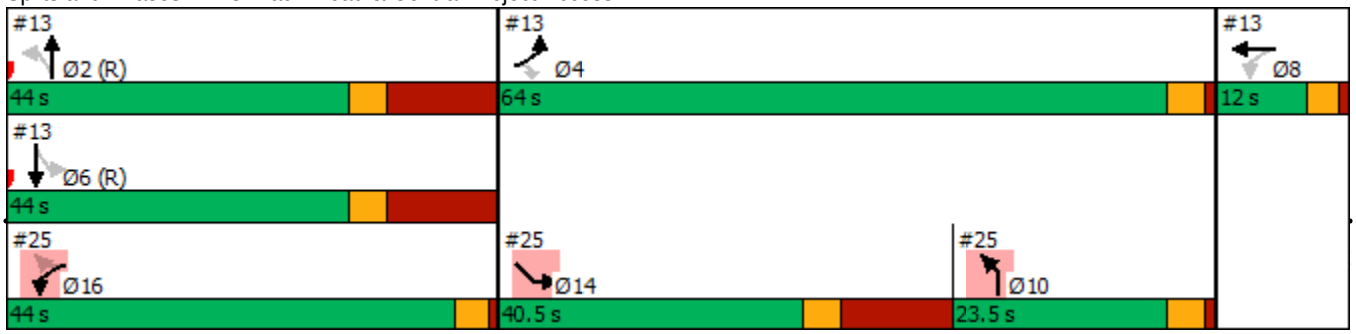
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	0	57	1	1	1	62	902	1	1	851	77
Future Volume (vph)	71	0	57	1	1	1	62	902	1	1	851	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	75		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850		0.955						0.988	
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1805	0	1615	0	1785	0	1805	1863	0	1805	3502	0
Flt Permitted	0.950				0.984		0.260			0.078		
Satd. Flow (perm)	1805	0	1615	0	1785	0	494	1863	0	148	3502	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			132		1							
Link Speed (mph)		25			30			50			50	
Link Distance (ft)		116			174			227			328	
Travel Time (s)		3.2			4.0			3.1			4.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	108%	100%	108%	108%	108%	100%	100%	108%	108%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	75	0	60	1	1	1	65	949	1	1	896	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	0	60	0	3	0	65	950	0	1	977	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			10			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2		1	2		1	2	
Detector Template	Left		Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20		20	20	100		20	100		20	100	
Trailing Detector (ft)	0		0	0	0		0	0		0	0	
Detector 1 Position(ft)	0		0	0	0		0	0		0	0	
Detector 1 Size(ft)	20		20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Perm	Perm	NA		Perm	NA		Perm	NA	

Lane Group	Ø10	Ø14	Ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4				8			2			6	
Permitted Phases			4	8			2			6		
Detector Phase	4		4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	32.5		32.5	11.0	11.0		22.5	22.5		39.5	39.5	
Total Split (s)	64.0		64.0	12.0	12.0		44.0	44.0		44.0	44.0	
Total Split (%)	53.3%		53.3%	10.0%	10.0%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	59.5		59.5	8.0	8.0		30.5	30.5		30.5	30.5	
Yellow Time (s)	3.5		3.5	3.0	3.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0		10.0	10.0		10.0	10.0	
Lost Time Adjust (s)	2.0		2.0		2.0		2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.5		6.5		6.0		15.5	15.5		15.5	15.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None		None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0		7.0							7.0	7.0	
Flash Dont Walk (s)	21.0		21.0							19.0	19.0	
Pedestrian Calls (#/hr)	0		0							0	0	
Act Effct Green (s)	27.4		27.4		5.0		68.4	68.4		68.4	68.4	
Actuated g/C Ratio	0.23		0.23		0.04		0.57	0.57		0.57	0.57	
v/c Ratio	0.18		0.13		0.04		0.23	0.90		0.01	0.49	
Control Delay	4.0		0.6		50.0		20.2	35.0		7.0	6.1	
Queue Delay	0.1		0.2		0.0		0.0	1.2		0.0	0.3	
Total Delay	4.1		0.8		50.0		20.2	36.2		7.0	6.4	
LOS	A		A		D		C	D		A	A	
Approach Delay		2.6			50.0			35.2			6.4	
Approach LOS		A			D			D			A	

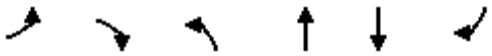
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 18 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 82.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 13: Haun Road & Central Project Access



Lane Group	Ø10	Ø14	Ø16
Protected Phases	10	14	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	7.0	7.0	7.0
Minimum Split (s)	22.5	39.5	30.0
Total Split (s)	23.5	40.5	44.0
Total Split (%)	20%	34%	37%
Maximum Green (s)	19.0	27.0	40.0
Yellow Time (s)	3.5	3.5	3.0
All-Red Time (s)	1.0	10.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	11	0	964	909	0
Future Volume (vph)	0	11	0	964	909	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	1863	0
Link Speed (mph)	25			50	50	
Link Distance (ft)	188			1601	66	
Travel Time (s)	5.1			21.8	0.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	0	12	0	1015	957	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	12	0	1015	957	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.1%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	11	0	964	909	0
Future Vol, veh/h	0	11	0	964	909	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	0	1015	957	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	957	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	313	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	313	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	0	0
HCM LOS	C		

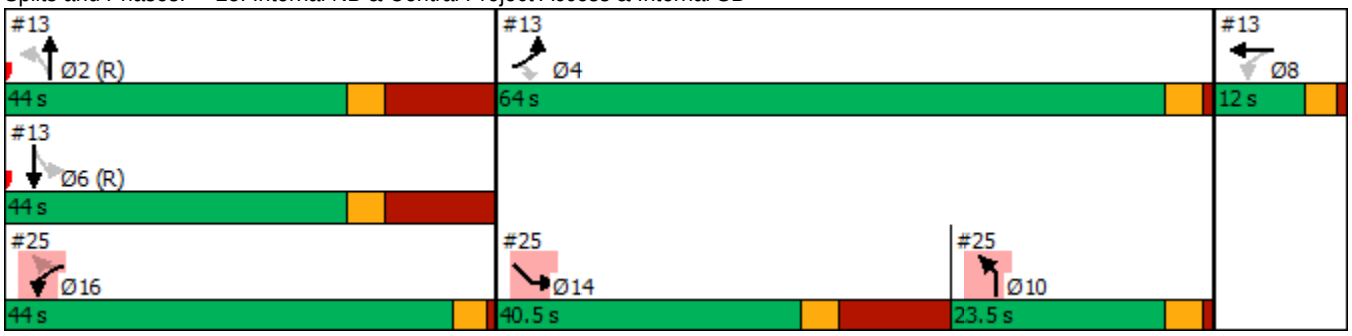
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	313	-	-
HCM Lane V/C Ratio	-	0.037	-	-
HCM Control Delay (s)	-	16.9	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

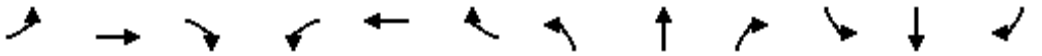
Lane Group	WBL	WBR	NBL	NBR	SEL	SER	Ø2	Ø4	Ø6	Ø8
Lane Configurations										
Traffic Volume (vph)	66	73	0	23	105	0				
Future Volume (vph)	66	73	0	23	105	0				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt		0.850	0.865							
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1805	1615	1644	0	1805	0				
Flt Permitted	0.950				0.950					
Satd. Flow (perm)	1805	1615	1644	0	1805	0				
Right Turn on Red		No		No		No				
Satd. Flow (RTOR)										
Link Speed (mph)	25		25		25					
Link Distance (ft)	116		227		231					
Travel Time (s)	3.2		6.2		6.3					
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Growth Factor	100%	100%	100%	100%	100%	100%				
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%				
Adj. Flow (vph)	69	77	0	24	111	0				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	69	77	24	0	111	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Right	Left	Right				
Median Width(ft)	12		12		12					
Link Offset(ft)	0		0		0					
Crosswalk Width(ft)	16		10		10					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15	9	15	9				
Number of Detectors	1	1	1		1					
Detector Template	Left	Right	Left		Left					
Leading Detector (ft)	20	20	20		20					
Trailing Detector (ft)	0	0	0		0					
Detector 1 Position(ft)	0	0	0		0					
Detector 1 Size(ft)	20	20	20		20					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0					
Detector 1 Queue (s)	0.0	0.0	0.0		0.0					
Detector 1 Delay (s)	0.0	0.0	0.0		0.0					
Turn Type	Prot	Perm	Prot		Prot					
Protected Phases	16		10		14		2	4	6	8
Permitted Phases		16								
Detector Phase	16	16	10		14					
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0		7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	30.0	30.0	22.5		39.5		22.5	32.5	39.5	11.0
Total Split (s)	44.0	44.0	23.5		40.5		44.0	64.0	44.0	12.0
Total Split (%)	36.7%	36.7%	19.6%		33.8%		37%	53%	37%	10%

Lane Group	WBL	WBR	NBL	NBR	SEL	SER	Ø2	Ø4	Ø6	Ø8
Maximum Green (s)	40.0	40.0	19.0		27.0		30.5	59.5	30.5	8.0
Yellow Time (s)	3.0	3.0	3.5		3.5		3.5	3.5	3.5	3.0
All-Red Time (s)	1.0	1.0	1.0		10.0		10.0	1.0	10.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0		2.0					
Total Lost Time (s)	6.0	6.0	6.5		15.5					
Lead/Lag			Lag		Lead					
Lead-Lag Optimize?			Yes		Yes					
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	None		None		C-Max	None	C-Max	None
Walk Time (s)								7.0	7.0	
Flash Dont Walk (s)								21.0	19.0	
Pedestrian Calls (#/hr)								0	0	
Act Effct Green (s)	77.9	77.9	5.8		10.7					
Actuated g/C Ratio	0.65	0.65	0.05		0.09					
v/c Ratio	0.06	0.07	0.30		0.69					
Control Delay	0.2	0.2	64.7		73.9					
Queue Delay	0.6	0.6	0.0		0.0					
Total Delay	0.7	0.8	64.7		73.9					
LOS	A	A	E		E					
Approach Delay	0.8		64.7		73.9					
Approach LOS	A		E		E					

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 18 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 35.1		Intersection LOS: D	
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 25: Internal NB & Central Project Access & Internal SB



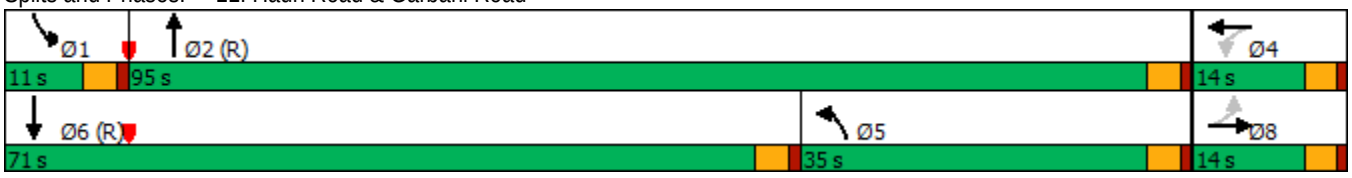


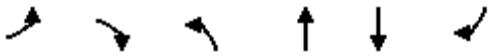
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	0	207	4	0	0	218	1056	0	0	930	58
Future Volume (vph)	62	0	207	4	0	0	218	1056	0	0	930	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.850									0.991	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1583	0	1770	1863	0	1770	1863	0	1863	3507	0
Flt Permitted	0.757			0.513			0.950					
Satd. Flow (perm)	1410	1583	0	956	1863	0	1770	1863	0	1863	3507	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		397									8	
Link Speed (mph)		35			30			50			50	
Link Distance (ft)		623			578			270			2533	
Travel Time (s)		12.1			13.1			3.7			34.5	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	81	0	269	5	0	0	283	1371	0	0	1208	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	81	269	0	5	0	0	283	1371	0	0	1283	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm			Prot	NA		Prot	NA	
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4								
Detector Phase	8	8		4	4		5	2		1	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	14.0	14.0		14.0	14.0		35.0	95.0		11.0	71.0	
Total Split (%)	11.7%	11.7%		11.7%	11.7%		29.2%	79.2%		9.2%	59.2%	
Maximum Green (s)	10.0	10.0		10.0	10.0		31.0	91.0		7.0	67.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	7.8	7.8		7.8			29.0	100.2			65.2	
Actuated g/C Ratio	0.06	0.06		0.06			0.24	0.84			0.54	
v/c Ratio	0.88	0.57		0.08			0.66	0.88			0.67	
Control Delay	121.8	4.9		55.8			44.3	10.1			21.8	
Queue Delay	0.0	0.2		0.0			60.1	5.8			0.3	
Total Delay	121.8	5.1		55.8			104.4	15.8			22.1	
LOS	F	A		E			F	B			C	
Approach Delay		32.1			55.8			31.0			22.1	
Approach LOS		C			E			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 102 (85%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 27.7		Intersection LOS: C	
Intersection Capacity Utilization 87.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 11: Haun Road & Garbani Road



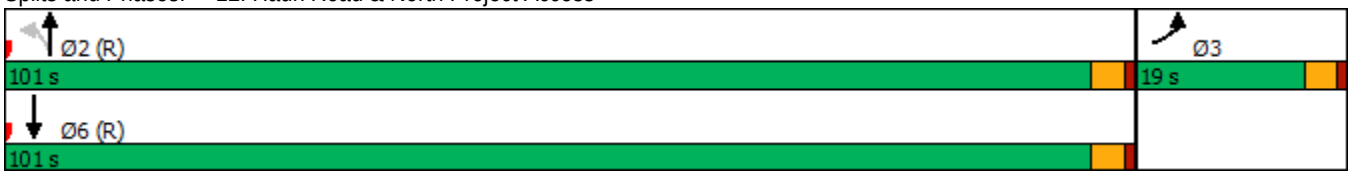


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	93	38	34	1180	1031	104
Future Volume (vph)	93	38	34	1180	1031	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.961				0.986	
Flt Protected	0.966		0.950			
Satd. Flow (prot)	1729	0	1770	1863	3490	0
Flt Permitted	0.966		0.220			
Satd. Flow (perm)	1729	0	410	1863	3490	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	14				30	
Link Speed (mph)	25			50	50	
Link Distance (ft)	289			328	270	
Travel Time (s)	7.9			4.5	3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	98	40	36	1242	1085	109
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	0	36	1242	1194	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	3			2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases			2			
Detector Phase	3		2	2	6	
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	11.0		11.0	11.0	11.0	
Total Split (s)	19.0		101.0	101.0	101.0	
Total Split (%)	15.8%		84.2%	84.2%	84.2%	
Maximum Green (s)	15.0		97.0	97.0	97.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	2.0		2.0	2.0	2.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		C-Min	C-Min	C-Min	
Act Effct Green (s)	11.3		96.7	96.7	96.7	
Actuated g/C Ratio	0.09		0.81	0.81	0.81	
v/c Ratio	0.79		0.11	0.83	0.42	
Control Delay	76.8		1.0	9.2	4.8	
Queue Delay	1.8		0.0	22.1	0.4	
Total Delay	78.6		1.0	31.3	5.2	
LOS	E		A	C	A	
Approach Delay	78.6			30.5	5.2	
Approach LOS	E			C	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 21.4		Intersection LOS: C	
Intersection Capacity Utilization 78.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 12: Haun Road & North Project Access



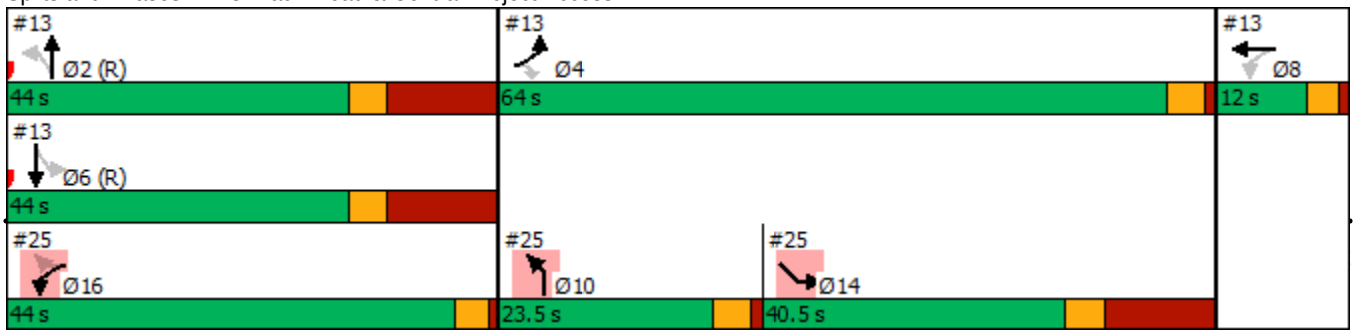
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	0	71	1	1	1	125	1082	1	1	924	124
Future Volume (vph)	132	0	71	1	1	1	125	1082	1	1	924	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	75		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850		0.955						0.982	
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1805	0	1615	0	1785	0	1805	1863	0	1805	3484	0
Flt Permitted	0.950				0.984		0.212			0.063		
Satd. Flow (perm)	1805	0	1615	0	1785	0	403	1863	0	120	3484	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			132		1							
Link Speed (mph)		25			30			50			50	
Link Distance (ft)		116			174			227			328	
Travel Time (s)		3.2			4.0			3.1			4.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	108%	100%	108%	108%	108%	100%	100%	108%	108%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	139	0	75	1	1	1	132	1139	1	1	973	131
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	0	75	0	3	0	132	1140	0	1	1104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			10			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2		1	2		1	2	
Detector Template	Left		Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20		20	20	100		20	100		20	100	
Trailing Detector (ft)	0		0	0	0		0	0		0	0	
Detector 1 Position(ft)	0		0	0	0		0	0		0	0	
Detector 1 Size(ft)	20		20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Perm	Perm	NA		Perm	NA		Perm	NA	

Lane Group	Ø10	Ø14	Ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4				8			2			6	
Permitted Phases			4	8			2			6		
Detector Phase	4		4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	32.5		32.5	11.0	11.0		22.5	22.5		39.5	39.5	
Total Split (s)	64.0		64.0	12.0	12.0		44.0	44.0		44.0	44.0	
Total Split (%)	53.3%		53.3%	10.0%	10.0%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	59.5		59.5	8.0	8.0		30.5	30.5		30.5	30.5	
Yellow Time (s)	3.5		3.5	3.0	3.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0		10.0	10.0		10.0	10.0	
Lost Time Adjust (s)	2.0		2.0		2.0		2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.5		6.5		6.0		15.5	15.5		15.5	15.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None		None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0		7.0							7.0	7.0	
Flash Dont Walk (s)	21.0		21.0							19.0	19.0	
Pedestrian Calls (#/hr)	0		0							0	0	
Act Effct Green (s)	27.4		27.4		5.0		68.4	68.4		68.4	68.4	
Actuated g/C Ratio	0.23		0.23		0.04		0.57	0.57		0.57	0.57	
v/c Ratio	0.34		0.16		0.04		0.58	1.07		0.01	0.56	
Control Delay	15.3		0.7		50.0		32.4	74.9		4.0	4.9	
Queue Delay	0.2		0.2		0.0		0.0	10.6		0.0	0.2	
Total Delay	15.5		0.9		50.0		32.4	85.5		4.0	5.2	
LOS	B		A		D		C	F		A	A	
Approach Delay		10.4			50.0			80.0			5.2	
Approach LOS		B			D			E			A	

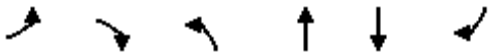
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 16 (13%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 42.3		Intersection LOS: D	
Intersection Capacity Utilization 104.3%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 13: Haun Road & Central Project Access



Lane Group	Ø10	Ø14	Ø16
Protected Phases	10	14	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	7.0	7.0	7.0
Minimum Split (s)	22.5	39.5	30.0
Total Split (s)	23.5	40.5	44.0
Total Split (%)	20%	34%	37%
Maximum Green (s)	19.0	27.0	40.0
Yellow Time (s)	3.5	3.5	3.0
All-Red Time (s)	1.0	10.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	44	0	1207	996	0
Future Volume (vph)	0	44	0	1207	996	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	1863	0
Link Speed (mph)	25			50	50	
Link Distance (ft)	188			1601	66	
Travel Time (s)	5.1			21.8	0.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	0	46	0	1271	1048	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	46	0	1271	1048	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	44	0	1207	996	0
Future Vol, veh/h	0	44	0	1207	996	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	46	0	1271	1048	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1048	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	277	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	277	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.6	0	0
HCM LOS	C		

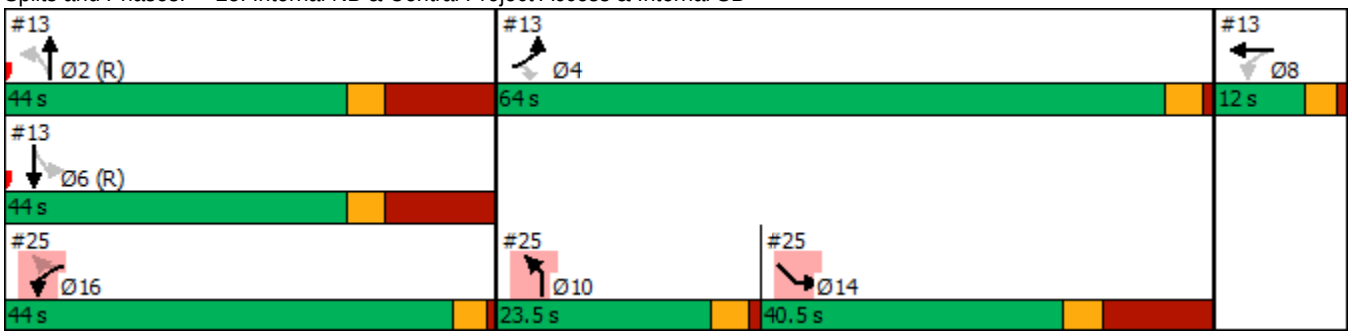
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	277	-	-
HCM Lane V/C Ratio	-	0.167	-	-
HCM Control Delay (s)	-	20.6	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.6	-	-

Lane Group	WBL	WBR	NBL	NBR	SEL	SER	Ø2	Ø4	Ø6	Ø8
Lane Configurations										
Traffic Volume (vph)	66	73	0	23	105	0				
Future Volume (vph)	66	73	0	23	105	0				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt		0.850	0.865							
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1805	1615	1644	0	1805	0				
Flt Permitted	0.950				0.950					
Satd. Flow (perm)	1805	1615	1644	0	1805	0				
Right Turn on Red		No		No		No				
Satd. Flow (RTOR)										
Link Speed (mph)	25		25		25					
Link Distance (ft)	116		227		231					
Travel Time (s)	3.2		6.2		6.3					
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Growth Factor	100%	100%	100%	100%	100%	100%				
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%				
Adj. Flow (vph)	69	77	0	24	111	0				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	69	77	24	0	111	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Right	Left	Right				
Median Width(ft)	12		12		12					
Link Offset(ft)	0		0		0					
Crosswalk Width(ft)	16		10		10					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15	9	15	9				
Number of Detectors	1	1	1		1					
Detector Template	Left	Right	Left		Left					
Leading Detector (ft)	20	20	20		20					
Trailing Detector (ft)	0	0	0		0					
Detector 1 Position(ft)	0	0	0		0					
Detector 1 Size(ft)	20	20	20		20					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0					
Detector 1 Queue (s)	0.0	0.0	0.0		0.0					
Detector 1 Delay (s)	0.0	0.0	0.0		0.0					
Turn Type	Prot	Perm	Prot		Prot					
Protected Phases	16		10		14		2	4	6	8
Permitted Phases		16								
Detector Phase	16	16	10		14					
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0		7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	30.0	30.0	22.5		39.5		22.5	32.5	39.5	11.0
Total Split (s)	44.0	44.0	23.5		40.5		44.0	64.0	44.0	12.0
Total Split (%)	36.7%	36.7%	19.6%		33.8%		37%	53%	37%	10%

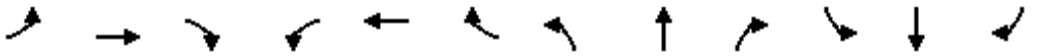
Lane Group	WBL	WBR	NBL	NBR	SEL	SER	Ø2	Ø4	Ø6	Ø8
Maximum Green (s)	40.0	40.0	19.0		27.0		30.5	59.5	30.5	8.0
Yellow Time (s)	3.0	3.0	3.5		3.5		3.5	3.5	3.5	3.0
All-Red Time (s)	1.0	1.0	1.0		10.0		10.0	1.0	10.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0		2.0					
Total Lost Time (s)	6.0	6.0	6.5		15.5					
Lead/Lag			Lead		Lag					
Lead-Lag Optimize?			Yes		Yes					
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	None		None		C-Max	None	C-Max	None
Walk Time (s)								7.0	7.0	
Flash Dont Walk (s)								21.0	19.0	
Pedestrian Calls (#/hr)								0	0	
Act Effct Green (s)	77.9	77.9	5.8		10.7					
Actuated g/C Ratio	0.65	0.65	0.05		0.09					
v/c Ratio	0.06	0.07	0.30		0.69					
Control Delay	0.1	0.2	64.7		73.9					
Queue Delay	0.7	0.8	0.0		0.0					
Total Delay	0.8	0.9	64.7		73.9					
LOS	A	A	E		E					
Approach Delay	0.8		64.7		73.9					
Approach LOS	A		E		E					

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 16 (13%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 35.2		Intersection LOS: D	
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 25: Internal NB & Central Project Access & Internal SB



EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PLUS CUMULATIVE (WITH HOLLAND OVERPASS)

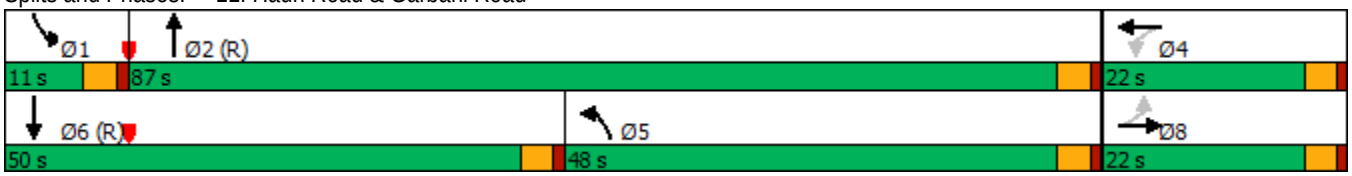


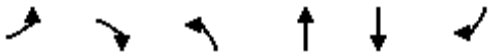
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	0	352	0	0	0	413	608	0	0	838	72
Future Volume (vph)	66	0	352	0	0	0	413	608	0	0	838	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.850									0.988	
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1583	0	1863	1863	0	1770	1863	0	1863	3497	0
Flt Permitted	0.757						0.950					
Satd. Flow (perm)	1410	1583	0	1863	1863	0	1770	1863	0	1863	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		567									8	
Link Speed (mph)		35			30			50			50	
Link Distance (ft)		623			578			270			2533	
Travel Time (s)		12.1			13.1			3.7			34.5	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	86	0	457	0	0	0	536	790	0	0	1088	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	457	0	0	0	0	536	790	0	0	1182	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm			Prot	NA		Prot	NA	
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4								
Detector Phase	8	8		4	4		5	2		1	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	22.0	22.0		22.0	22.0		48.0	87.0		11.0	50.0	
Total Split (%)	18.3%	18.3%		18.3%	18.3%		40.0%	72.5%		9.2%	41.7%	
Maximum Green (s)	18.0	18.0		18.0	18.0		44.0	83.0		7.0	46.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	11.0	11.0					42.0	97.0			49.0	
Actuated g/C Ratio	0.09	0.09					0.35	0.81			0.41	
v/c Ratio	0.67	0.69					0.87	0.52			0.82	
Control Delay	75.9	6.7					50.6	3.2			38.1	
Queue Delay	0.0	0.0					50.8	0.5			0.0	
Total Delay	75.9	6.7					101.4	3.6			38.1	
LOS	E	A					F	A			D	
Approach Delay		17.7						43.2			38.1	
Approach LOS		B						D			D	

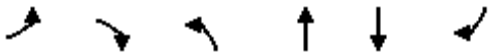
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 36.7		Intersection LOS: D	
Intersection Capacity Utilization 84.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 11: Haun Road & Garbani Road





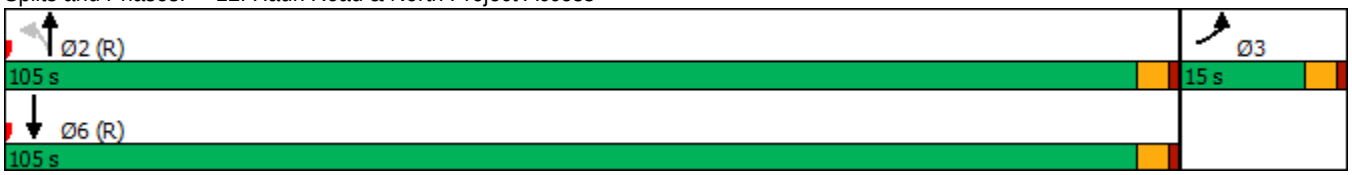
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	11	16	800	747	51
Future Volume (vph)	27	11	16	800	747	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.959				0.990	
Flt Protected	0.966		0.950			
Satd. Flow (prot)	1726	0	1770	1863	3504	0
Flt Permitted	0.966		0.336			
Satd. Flow (perm)	1726	0	626	1863	3504	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	12				24	
Link Speed (mph)	25			50	50	
Link Distance (ft)	289			328	270	
Travel Time (s)	7.9			4.5	3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	28	12	17	842	786	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	17	842	840	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	3			2	6	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases			2			
Detector Phase	3		2	2	6	
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	11.0		11.0	11.0	11.0	
Total Split (s)	15.0		105.0	105.0	105.0	
Total Split (%)	12.5%		87.5%	87.5%	87.5%	
Maximum Green (s)	11.0		101.0	101.0	101.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	2.0		2.0	2.0	2.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		C-Min	C-Min	C-Min	
Act Effct Green (s)	6.1		105.3	105.3	105.3	
Actuated g/C Ratio	0.05		0.88	0.88	0.88	
v/c Ratio	0.41		0.03	0.51	0.27	
Control Delay	53.9		0.8	2.9	0.6	
Queue Delay	0.0		0.0	0.5	0.6	
Total Delay	53.9		0.8	3.4	1.1	
LOS	D		A	A	A	
Approach Delay	53.9			3.4	1.1	
Approach LOS	D			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 70 (58%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 3.5		Intersection LOS: A	
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 12: Haun Road & North Project Access



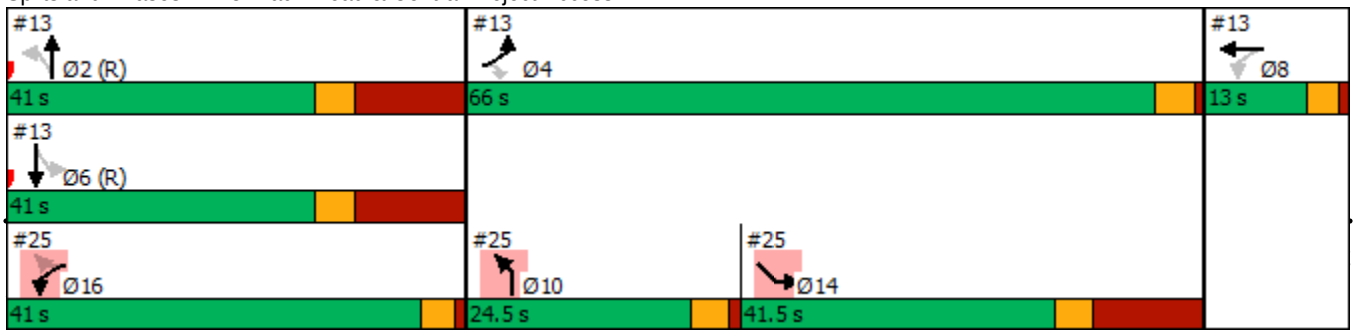
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	0	56	1	1	1	54	743	1	1	678	80
Future Volume (vph)	73	0	56	1	1	1	54	743	1	1	678	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	75		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850		0.955						0.984	
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1805	0	1615	0	1785	0	1805	1863	0	1805	3490	0
Flt Permitted	0.950				0.984		0.341			0.206		
Satd. Flow (perm)	1805	0	1615	0	1785	0	648	1863	0	391	3490	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			132		1							
Link Speed (mph)		25			30			50			50	
Link Distance (ft)		116			174			227			328	
Travel Time (s)		3.2			4.0			3.1			4.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	108%	100%	108%	108%	108%	100%	100%	108%	108%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	77	0	59	1	1	1	57	782	1	1	714	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	0	59	0	3	0	57	783	0	1	798	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			10			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2		1	2		1	2	
Detector Template	Left		Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20		20	20	100		20	100		20	100	
Trailing Detector (ft)	0		0	0	0		0	0		0	0	
Detector 1 Position(ft)	0		0	0	0		0	0		0	0	
Detector 1 Size(ft)	20		20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Perm	Perm	NA		Perm	NA		Perm	NA	

Lane Group	Ø10	Ø14	Ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4				8			2			6	
Permitted Phases			4	8			2			6		
Detector Phase	4		4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	32.5		32.5	11.0	11.0		22.5	22.5		39.5	39.5	
Total Split (s)	66.0		66.0	13.0	13.0		41.0	41.0		41.0	41.0	
Total Split (%)	55.0%		55.0%	10.8%	10.8%		34.2%	34.2%		34.2%	34.2%	
Maximum Green (s)	61.5		61.5	9.0	9.0		27.5	27.5		27.5	27.5	
Yellow Time (s)	3.5		3.5	3.0	3.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0		10.0	10.0		10.0	10.0	
Lost Time Adjust (s)	2.0		2.0		2.0		2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.5		6.5		6.0		15.5	15.5		15.5	15.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None		None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0		7.0							7.0	7.0	
Flash Dont Walk (s)	21.0		21.0							19.0	19.0	
Pedestrian Calls (#/hr)	0		0							0	0	
Act Effct Green (s)	27.4		27.4		5.0		68.4	68.4		68.4	68.4	
Actuated g/C Ratio	0.23		0.23		0.04		0.57	0.57		0.57	0.57	
v/c Ratio	0.19		0.13		0.04		0.15	0.74		0.00	0.40	
Control Delay	1.6		0.5		50.0		17.1	25.0		7.0	6.0	
Queue Delay	0.1		0.1		0.0		0.0	0.0		0.0	0.3	
Total Delay	1.7		0.7		50.0		17.1	25.0		7.0	6.3	
LOS	A		A		D		B	C		A	A	
Approach Delay		1.3			50.0			24.5			6.3	
Approach LOS		A			D			C			A	

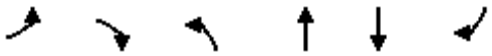
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 42 (35%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 14.6		Intersection LOS: B	
Intersection Capacity Utilization 75.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 13: Haun Road & Central Project Access



Lane Group	Ø10	Ø14	Ø16
Protected Phases	10	14	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	7.0	7.0	7.0
Minimum Split (s)	22.5	39.5	30.0
Total Split (s)	24.5	41.5	41.0
Total Split (%)	20%	35%	34%
Maximum Green (s)	20.0	28.0	37.0
Yellow Time (s)	3.5	3.5	3.0
All-Red Time (s)	1.0	10.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	6	0	797	734	0
Future Volume (vph)	0	6	0	797	734	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	1863	0
Link Speed (mph)	25			50	50	
Link Distance (ft)	188			1601	66	
Travel Time (s)	5.1			21.8	0.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	0	6	0	839	773	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	6	0	839	773	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	6	0	797	734	0
Future Vol, veh/h	0	6	0	797	734	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	6	0	839	773	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	773	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	399	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	399	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0	0
HCM LOS	B		

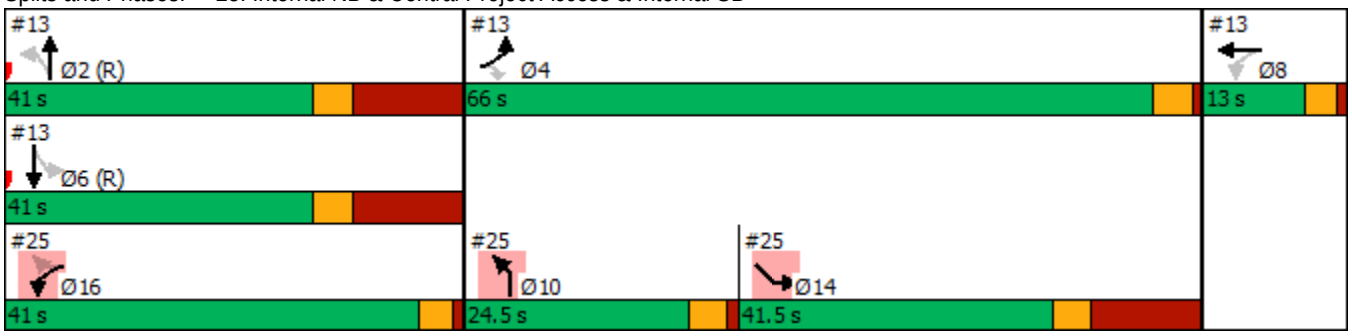
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	399	-	-
HCM Lane V/C Ratio	-	0.016	-	-
HCM Control Delay (s)	-	14.2	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

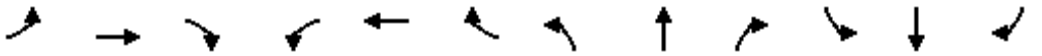
Lane Group	WBL	WBR	NBL	NBR	SEL	SER	Ø2	Ø4	Ø6	Ø8
Lane Configurations										
Traffic Volume (vph)	66	73	0	23	105	0				
Future Volume (vph)	66	73	0	23	105	0				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt		0.850	0.865							
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1805	1615	1644	0	1805	0				
Flt Permitted	0.950				0.950					
Satd. Flow (perm)	1805	1615	1644	0	1805	0				
Right Turn on Red		No		No		No				
Satd. Flow (RTOR)										
Link Speed (mph)	25		25		25					
Link Distance (ft)	116		227		231					
Travel Time (s)	3.2		6.2		6.3					
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Growth Factor	100%	100%	100%	100%	100%	100%				
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%				
Adj. Flow (vph)	69	77	0	24	111	0				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	69	77	24	0	111	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Right	Left	Right				
Median Width(ft)	12		12		12					
Link Offset(ft)	0		0		0					
Crosswalk Width(ft)	16		10		10					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15	9	15	9				
Number of Detectors	1	1	1		1					
Detector Template	Left	Right	Left		Left					
Leading Detector (ft)	20	20	20		20					
Trailing Detector (ft)	0	0	0		0					
Detector 1 Position(ft)	0	0	0		0					
Detector 1 Size(ft)	20	20	20		20					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0					
Detector 1 Queue (s)	0.0	0.0	0.0		0.0					
Detector 1 Delay (s)	0.0	0.0	0.0		0.0					
Turn Type	Prot	Perm	Prot		Prot					
Protected Phases	16		10		14		2	4	6	8
Permitted Phases		16								
Detector Phase	16	16	10		14					
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0		7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	30.0	30.0	22.5		39.5		22.5	32.5	39.5	11.0
Total Split (s)	41.0	41.0	24.5		41.5		41.0	66.0	41.0	13.0
Total Split (%)	34.2%	34.2%	20.4%		34.6%		34%	55%	34%	11%

Lane Group	WBL	WBR	NBL	NBR	SEL	SER	Ø2	Ø4	Ø6	Ø8
Maximum Green (s)	37.0	37.0	20.0		28.0		27.5	61.5	27.5	9.0
Yellow Time (s)	3.0	3.0	3.5		3.5		3.5	3.5	3.5	3.0
All-Red Time (s)	1.0	1.0	1.0		10.0		10.0	1.0	10.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0		2.0					
Total Lost Time (s)	6.0	6.0	6.5		15.5					
Lead/Lag			Lead		Lag					
Lead-Lag Optimize?			Yes		Yes					
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	None		None		C-Max	None	C-Max	None
Walk Time (s)								7.0	7.0	
Flash Dont Walk (s)								21.0	19.0	
Pedestrian Calls (#/hr)								0	0	
Act Effct Green (s)	77.9	77.9	5.8		10.7					
Actuated g/C Ratio	0.65	0.65	0.05		0.09					
v/c Ratio	0.06	0.07	0.30		0.69					
Control Delay	0.4	0.5	64.7		73.9					
Queue Delay	0.5	0.6	0.0		0.0					
Total Delay	1.0	1.1	64.7		73.9					
LOS	A	A	E		E					
Approach Delay	1.1		64.7		73.9					
Approach LOS	A		E		E					

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 42 (35%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 35.3		Intersection LOS: D	
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 25: Internal NB & Central Project Access & Internal SB



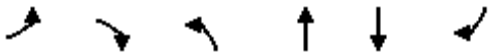


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	0	195	0	0	0	207	1075	0	0	845	69
Future Volume (vph)	65	0	195	0	0	0	207	1075	0	0	845	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.850									0.989	
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1770	1583	0	1863	1863	0	1770	1863	0	1863	3500	0
Flt Permitted	0.757						0.950					
Satd. Flow (perm)	1410	1583	0	1863	1863	0	1770	1863	0	1863	3500	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		408									11	
Link Speed (mph)		35			30			50			50	
Link Distance (ft)		623			578			270			2533	
Travel Time (s)		12.1			13.1			3.7			34.5	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	84	0	253	0	0	0	269	1396	0	0	1097	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	253	0	0	0	0	269	1396	0	0	1187	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm			Prot	NA		Prot	NA	
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4								
Detector Phase	8	8		4	4		5	2		1	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	13.0	13.0		13.0	13.0		35.0	96.0		11.0	72.0	
Total Split (%)	10.8%	10.8%		10.8%	10.8%		29.2%	80.0%		9.2%	60.0%	
Maximum Green (s)	9.0	9.0		9.0	9.0		31.0	92.0		7.0	68.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	7.0	7.0					21.4	101.0			73.6	
Actuated g/C Ratio	0.06	0.06					0.18	0.84			0.61	
v/c Ratio	1.02	0.53					0.85	0.89			0.55	
Control Delay	161.9	4.2					70.9	15.7			15.5	
Queue Delay	0.0	0.0					6.7	0.6			0.0	
Total Delay	161.9	4.2					77.7	16.4			15.5	
LOS	F	A					E	B			B	
Approach Delay		43.5						26.3			15.5	
Approach LOS		D						C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 24.1		Intersection LOS: C	
Intersection Capacity Utilization 87.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 11: Haun Road & Garbani Road

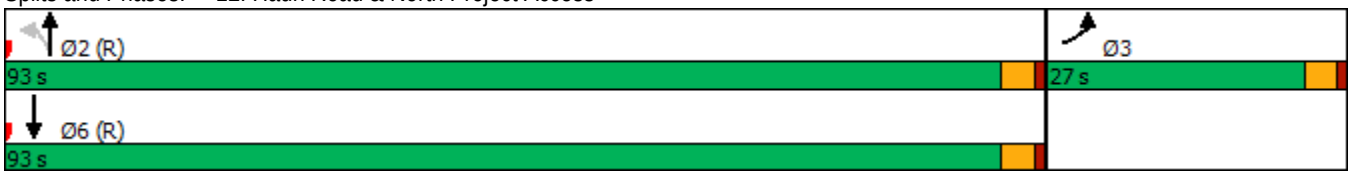


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	107	38	34	755	626	120
Future Volume (vph)	107	38	34	755	626	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.965				0.976	
Flt Protected	0.964		0.950			
Satd. Flow (prot)	1733	0	1770	1863	3454	0
Flt Permitted	0.964		0.349			
Satd. Flow (perm)	1733	0	650	1863	3454	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	13				48	
Link Speed (mph)	25			50	50	
Link Distance (ft)	289			328	270	
Travel Time (s)	7.9			4.5	3.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	113	40	36	795	659	126
Shared Lane Traffic (%)						
Lane Group Flow (vph)	153	0	36	795	785	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	3			2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases			2			
Detector Phase	3		2	2	6	
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	
Minimum Split (s)	11.0		11.0	11.0	11.0	
Total Split (s)	27.0		93.0	93.0	93.0	
Total Split (%)	22.5%		77.5%	77.5%	77.5%	
Maximum Green (s)	23.0		89.0	89.0	89.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	2.0		2.0	2.0	2.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		C-Min	C-Min	C-Min	
Act Effct Green (s)	13.0		95.0	95.0	95.0	
Actuated g/C Ratio	0.11		0.79	0.79	0.79	
v/c Ratio	0.77		0.07	0.54	0.29	
Control Delay	71.1		2.1	4.2	0.9	
Queue Delay	3.3		0.0	0.5	0.2	
Total Delay	74.4		2.1	4.7	1.1	
LOS	E		A	A	A	
Approach Delay	74.4			4.6	1.1	
Approach LOS	E			A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 36 (30%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 12: Haun Road & North Project Access



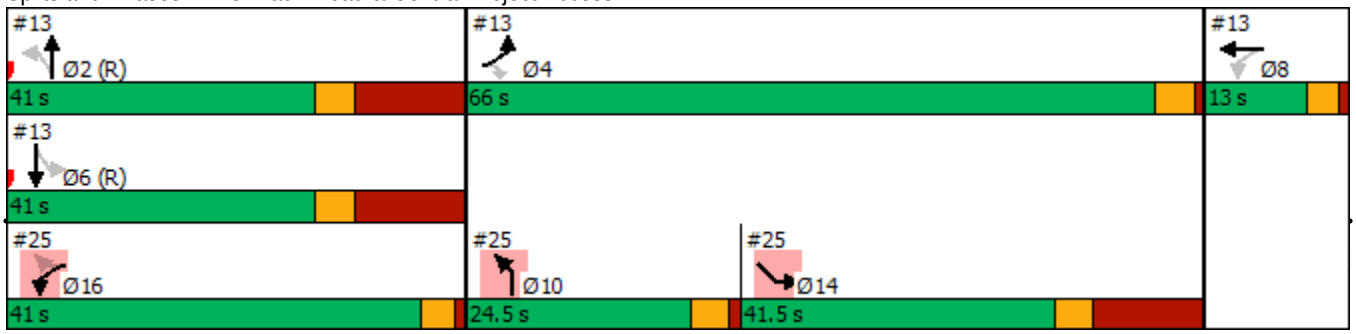
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	0	69	1	1	1	107	655	1	1	517	147
Future Volume (vph)	134	0	69	1	1	1	107	655	1	1	517	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	75		0
Storage Lanes	1		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850		0.955						0.967	
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1805	0	1615	0	1785	0	1805	1863	0	1805	3437	0
Flt Permitted	0.950				0.984		0.386			0.278		
Satd. Flow (perm)	1805	0	1615	0	1785	0	733	1863	0	528	3437	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			132		1							
Link Speed (mph)		25			30			50			50	
Link Distance (ft)		116			174			227			328	
Travel Time (s)		3.2			4.0			3.1			4.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	108%	100%	108%	108%	108%	100%	100%	108%	108%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	141	0	73	1	1	1	113	689	1	1	544	155
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	0	73	0	3	0	113	690	0	1	699	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			10			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2		1	2		1	2	
Detector Template	Left		Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20		20	20	100		20	100		20	100	
Trailing Detector (ft)	0		0	0	0		0	0		0	0	
Detector 1 Position(ft)	0		0	0	0		0	0		0	0	
Detector 1 Size(ft)	20		20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Perm	Perm	NA		Perm	NA		Perm	NA	

Lane Group	Ø10	Ø14	Ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Growth Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4				8			2			6	
Permitted Phases			4	8			2			6		
Detector Phase	4		4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	32.5		32.5	11.0	11.0		22.5	22.5		39.5	39.5	
Total Split (s)	66.0		66.0	13.0	13.0		41.0	41.0		41.0	41.0	
Total Split (%)	55.0%		55.0%	10.8%	10.8%		34.2%	34.2%		34.2%	34.2%	
Maximum Green (s)	61.5		61.5	9.0	9.0		27.5	27.5		27.5	27.5	
Yellow Time (s)	3.5		3.5	3.0	3.0		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0		10.0	10.0		10.0	10.0	
Lost Time Adjust (s)	2.0		2.0		2.0		2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.5		6.5		6.0		15.5	15.5		15.5	15.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None		None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0		7.0							7.0	7.0	
Flash Dont Walk (s)	21.0		21.0							19.0	19.0	
Pedestrian Calls (#/hr)	0		0							0	0	
Act Effct Green (s)	27.4		27.4		5.0		68.4	68.4		68.4	68.4	
Actuated g/C Ratio	0.23		0.23		0.04		0.57	0.57		0.57	0.57	
v/c Ratio	0.34		0.15		0.04		0.27	0.65		0.00	0.36	
Control Delay	15.4		0.7		50.0		18.2	22.6		7.0	8.4	
Queue Delay	0.2		0.2		0.0		0.0	0.0		0.0	0.3	
Total Delay	15.6		0.9		50.0		18.2	22.6		7.0	8.7	
LOS	B		A		D		B	C		A	A	
Approach Delay		10.5			50.0			21.9			8.7	
Approach LOS		B			D			C			A	

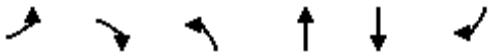
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 40 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 15.2		Intersection LOS: B	
Intersection Capacity Utilization 82.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 13: Haun Road & Central Project Access



Lane Group	Ø10	Ø14	Ø16
Protected Phases	10	14	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	7.0	7.0	7.0
Minimum Split (s)	22.5	39.5	30.0
Total Split (s)	24.5	41.5	41.0
Total Split (%)	20%	35%	34%
Maximum Green (s)	20.0	28.0	37.0
Yellow Time (s)	3.5	3.5	3.0
All-Red Time (s)	1.0	10.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	28	0	762	586	0
Future Volume (vph)	0	28	0	762	586	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	1863	0
Link Speed (mph)	25			50	50	
Link Distance (ft)	188			1601	66	
Travel Time (s)	5.1			21.8	0.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	0	29	0	802	617	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	29	0	802	617	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	28	0	762	586	0
Future Vol, veh/h	0	28	0	762	586	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	29	0	802	617	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	617	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	490	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	490	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0	0
HCM LOS	B		

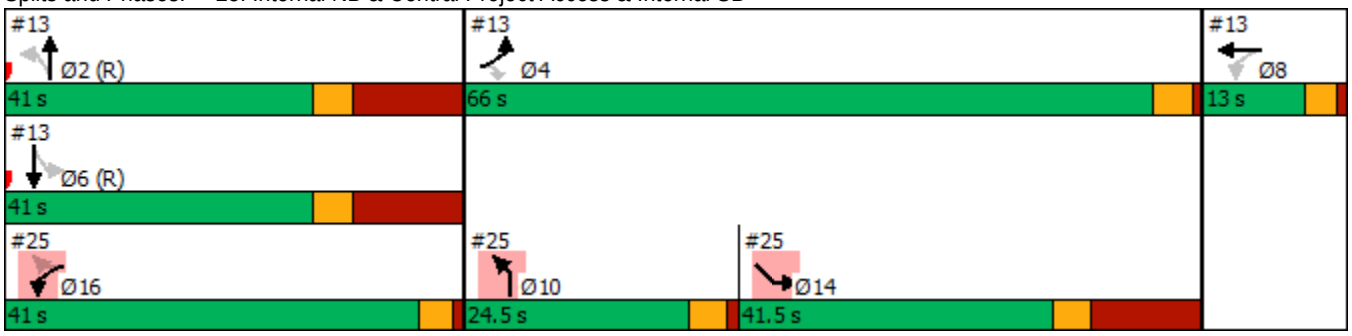
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	490	-	-
HCM Lane V/C Ratio	-	0.06	-	-
HCM Control Delay (s)	-	12.8	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Lane Group	WBL	WBR	NBL	NBR	SEL	SER	Ø2	Ø4	Ø6	Ø8
Lane Configurations										
Traffic Volume (vph)	66	73	0	23	105	0				
Future Volume (vph)	66	73	0	23	105	0				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Frt		0.850	0.865							
Flt Protected	0.950				0.950					
Satd. Flow (prot)	1805	1615	1644	0	1805	0				
Flt Permitted	0.950				0.950					
Satd. Flow (perm)	1805	1615	1644	0	1805	0				
Right Turn on Red		No		No		No				
Satd. Flow (RTOR)										
Link Speed (mph)	25		25		25					
Link Distance (ft)	116		227		231					
Travel Time (s)	3.2		6.2		6.3					
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Growth Factor	100%	100%	100%	100%	100%	100%				
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%				
Adj. Flow (vph)	69	77	0	24	111	0				
Shared Lane Traffic (%)										
Lane Group Flow (vph)	69	77	24	0	111	0				
Enter Blocked Intersection	No	No	No	No	No	No				
Lane Alignment	Left	Right	Left	Right	Left	Right				
Median Width(ft)	12		12		12					
Link Offset(ft)	0		0		0					
Crosswalk Width(ft)	16		10		10					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00				
Turning Speed (mph)	15	9	15	9	15	9				
Number of Detectors	1	1	1		1					
Detector Template	Left	Right	Left		Left					
Leading Detector (ft)	20	20	20		20					
Trailing Detector (ft)	0	0	0		0					
Detector 1 Position(ft)	0	0	0		0					
Detector 1 Size(ft)	20	20	20		20					
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex					
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0					
Detector 1 Queue (s)	0.0	0.0	0.0		0.0					
Detector 1 Delay (s)	0.0	0.0	0.0		0.0					
Turn Type	Prot	Perm	Prot		Prot					
Protected Phases	16		10		14		2	4	6	8
Permitted Phases		16								
Detector Phase	16	16	10		14					
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0		7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	30.0	30.0	22.5		39.5		22.5	32.5	39.5	11.0
Total Split (s)	41.0	41.0	24.5		41.5		41.0	66.0	41.0	13.0
Total Split (%)	34.2%	34.2%	20.4%		34.6%		34%	55%	34%	11%

Lane Group	WBL	WBR	NBL	NBR	SEL	SER	Ø2	Ø4	Ø6	Ø8
Maximum Green (s)	37.0	37.0	20.0		28.0		27.5	61.5	27.5	9.0
Yellow Time (s)	3.0	3.0	3.5		3.5		3.5	3.5	3.5	3.0
All-Red Time (s)	1.0	1.0	1.0		10.0		10.0	1.0	10.0	1.0
Lost Time Adjust (s)	2.0	2.0	2.0		2.0					
Total Lost Time (s)	6.0	6.0	6.5		15.5					
Lead/Lag			Lead		Lag					
Lead-Lag Optimize?			Yes		Yes					
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	None		None		C-Max	None	C-Max	None
Walk Time (s)								7.0	7.0	
Flash Dont Walk (s)								21.0	19.0	
Pedestrian Calls (#/hr)								0	0	
Act Effct Green (s)	77.9	77.9	5.8		10.7					
Actuated g/C Ratio	0.65	0.65	0.05		0.09					
v/c Ratio	0.06	0.07	0.30		0.69					
Control Delay	0.1	0.2	64.7		73.9					
Queue Delay	0.5	0.6	0.0		0.0					
Total Delay	0.6	0.7	64.7		73.9					
LOS	A	A	E		E					
Approach Delay	0.7		64.7		73.9					
Approach LOS	A		E		E					

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 40 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 35.1		Intersection LOS: D	
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 25: Internal NB & Central Project Access & Internal SB



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