Traffic Impact Study for the Creekside Estates Project

Prepared for the County of Butte

Submitted by
W-Trans

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Executive Summary

This report presents an analysis of the potential traffic impacts that would be associated with the proposed Creekside Estates, a residential subdivision with 46 single family homes. The project site is located on the south side of Durham-Dayton Highway, east of its intersection with Midway and is currently used as an orchard. A single access point on Durham-Dayton Highway would connect to Street A and serve all 46 residences. The proposed project would be expected to result in 434 new daily trips on average, including 34 trips during the morning peak hour and 46 trips during the evening peak hour.

Under Existing Conditions for the year 2018, all study intersections are currently operating acceptably at LOS C or better during both peak hours.

The *Butte County Capital Improvement Program (CIP) Fiscal Years 2017 through 2026-27* includes the installation of a traffic signal at the intersection of Durham-Dayton Highway/Midway by the horizon year 2028. Under Future Conditions, and with the planned installation of a traffic signal at Durham-Dayton Highway/Midway, all study intersections are expected to operate acceptably at LOS A or B during both peak hours. The County of Butte should consider installing a roundabout at the intersection of Durham-Dayton Highway/Midway as an alternative to a traffic signal. A preliminary evaluation indicates that the intersection may be a good candidate for a roundabout.

Upon the addition of project-related traffic to existing volumes, all study intersections would be expected to continue operating acceptably at LOS C or better during both peak hours, and the project's short-term impact on operation would be considered less-than-significant.

Upon the addition of project-related traffic to the volumes anticipated for the year 2028, and with installation of a traffic signal or roundabout at Durham-Dayton Highway/Midway, all study intersections would be expected to operate at LOS A or B during both peak hours and the project's impact on long-term operation would be considered less-than-significant.

The project would provide a sidewalk along the entirety of its frontage with Durham-Dayton Highway; however, the project sidewalk would be disconnected from the surrounding pedestrian network. Because the project site is located within walking distance from the downtown core of Durham and the schools located west of Midway, it is recommended that the project provide a pedestrian path between the project site and Midway. Existing bicycle facilities along with those planned would provide adequate access for bicyclists. Existing transit service is adequate to accommodate the demand anticipated for the project.

As proposed in the site plan, on-site circulation would be expected to operate acceptably. Adequate sight distance is available along Durham-Dayton Highway at the project access to accommodate all turns. A left-turn lane would not be warranted on Durham-Dayton Highway at the project access point. Neither a right-turn lane, nor right-turn taper, would not be warranted at the project access point on Durham-Dayton Highway. Installation of any vegetation or signage at the project access point should be done in a manner that does not impede clear sight lines.

Introduction

Introduction

This report presents an analysis of the potential traffic impacts that would be associated with the proposed Creekside Estates, a residential subdivision with 46 single family homes. The project site is located in the community of Durham in unincorporated Butte County. The project would be located east of Midway and on the south side of Durham-Dayton Highway, with access being taken off Durham-Dayton Highway. The traffic study was completed in accordance with the criteria established by the County of Butte and is consistent with standard traffic engineering techniques. It is noted that a traffic study was completed for a residential project on this site in 2013, so data from that study was used in this update.

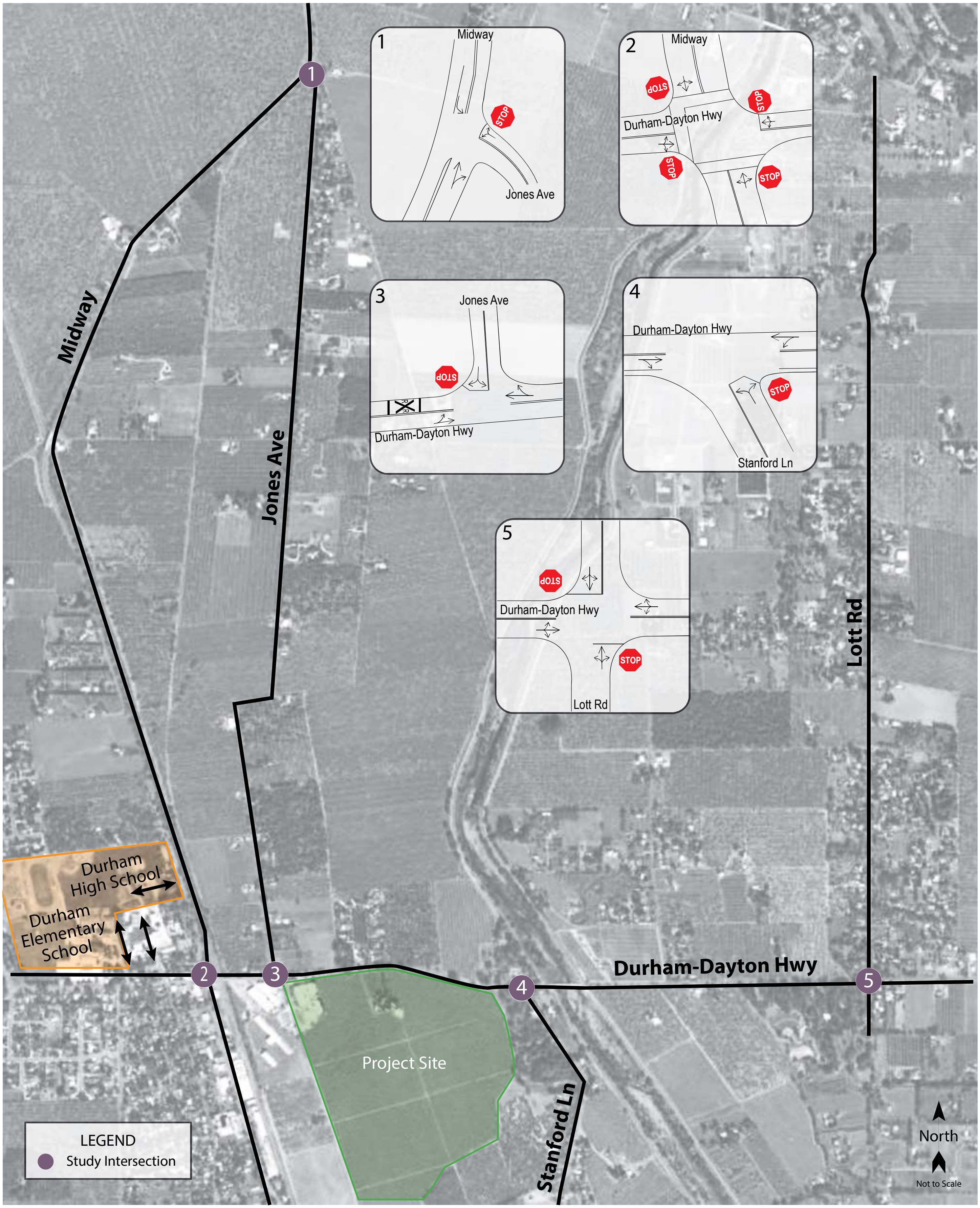
Prelude

The purpose of a traffic impact study is to provide County of Butte staff and policy makers such as Planning Commissioners and Board of Supervisors members with data which they can use to make an informed decision regarding the potential traffic impacts of a proposed project, and any associated improvements which would be required to mitigate these impacts to a level of insignificance as defined by the County's General Plan or other policies. Impacts to vehicular traffic are typically evaluated by determining the number of trips the new use would be expected to generate, distributing the new trips to the surrounding street system based on existing travel patterns or anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on critical intersections included in the study. Impacts are also reviewed for alternative modes, including pedestrians, bicyclists and transit users. Based on the conditions projected, appropriate mitigation measures can be determined that would reduce the traffic impacts of the project to levels which are less than significant.

Project Profile

The proposed project consists of 46 single family homes with a total development area of approximately 50 acres. The project site is located on the south side of Durham-Dayton Highway, east of the intersection with Midway, and is currently used as an orchard, though the trees would be removed to make room for the project, and occupied by an existing single family dwelling, which would remain. A single access point on Durham-Dayton Highway would serve all 46 residences.

The location of the project site is shown in Figure 1.



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Traffic Impact Study for the Creekside Estates Project

Figure 1 – Study Area and Lane Configurations

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Transportation Setting

Operational Analysis

Study Area and Periods

The study area consists of the following intersections and the project access point:

1. Midway/Jones Avenue
2. Durham-Dayton Highway/Midway
3. Durham-Dayton Highway/Jones Avenue
4. Durham-Dayton Highway/Stanford Lane
5. Durham-Dayton Highway/Lott Road

Conditions during the weekday a.m. and p.m. peak periods were evaluated. The weekday morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

Study Intersections

Midway/Jones Avenue is a "tee" intersection with westbound Jones Avenue stop-controlled and both Midway approaches uncontrolled. The southbound approach on Midway includes a 75-foot left-turn lane.

Durham-Dayton Highway/Midway is an all-way stop intersection located within the town center of Durham, with single lane approaches. Crosswalks are located on three approaches to the intersection.

Durham-Dayton Highway/Jones Avenue is a "tee" intersection with Durham-Dayton Highway uncontrolled and the approach of Jones Avenue stop-controlled. Class II bicycle lanes are provided on both sides of Durham-Dayton Highway.

Durham-Dayton Highway/Stanford Lane is a "tee" intersection with Durham-Dayton Highway uncontrolled and the approach of Stanford Lane stop-controlled. Class II bicycle lanes are provided on both sides of Durham-Dayton Highway.

Durham-Dayton Highway/Lott Road is two-way stop-controlled on the Lott Road approaches. Class II bicycle lanes are provided on both sides of Durham-Dayton Highway.

The locations of the study intersections and the existing lane configurations and controls are shown in Figure 1.

Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their *Statewide Integrated Traffic Records System* (SWITRS) reports. The most current five-year period available is from January 1, 2013 through December 31, 2017. As presented in Table 1, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2014 Collision Data on California State Highways*, California Department of Transportation (Caltrans).

The intersection of Durham-Dayton Highway/Lott Road had two reported collisions during the five-year study period, resulting in a calculated collision rate of 0.31 collisions per million vehicles entering (c/mve). Although the calculated collision rate is slightly above the statewide average for similar facilities, because only two collisions occurred over a five-year period and only one collision involved an injury, no remedial measures appear necessary. All other study intersections had calculated collision rates that were lower than the statewide average rate for similar facilities. The collision rate calculations are provided in Appendix A.

Table 1 – Collision Rates at the Study Intersections

Study Intersection	Number of Collisions (2013-2017)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
1. Midway/Jones Ave	1	0.08	0.16
2. Durham-Dayton Hwy/Midway	4	0.30	0.32
3. Durham-Dayton Hwy/Jones Ave	1	0.11	0.14
4. Durham-Dayton Hwy/Stanford Ln	1	0.12	0.16
5. Durham-Dayton Hwy/Lott Rd	2	**0.31**	0.23

Note: c/mve = collisions per million vehicles entering; **Bold** indicates a calculated collision rate greater than the statewide average

Alternative Transportation Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. Existing pedestrian facilities located within the study area are focused on Durham-Dayton Highway and Midway, as follows:

- **Durham-Dayton Highway** – A continuous sidewalk is provided on Durham-Dayton Highway west of the intersection with Midway. Crosswalks are located on the north, south, and west legs at the Midway intersection where there are all-way stops which provide a controlled crossing for pedestrians.

- **Midway** – Sidewalks extend south from the intersection with Durham-Dayton Highway on both sides of the road and to the north on the west side.

In general, the lack of continuous sidewalks in a rural area is typical. The distance a pedestrian will typically travel to reach a destination is generally half a mile and in a rural area few destinations are located within this threshold. However, the Creekside Estates site is located less than a half-mile from the core of Durham, near the intersection of Durham-Dayton Highway/Midway where there are commercial businesses and the post office. Durham Elementary School and High School are located on the north side of Durham-Dayton Highway, just west of the intersection with Midway. Given these uses in Durham, some pedestrian trips between the development and this downtown area of Durham are expected.

Bicycle Facilities

The Caltrans *Highway Design Manual* classifies bikeways into three categories.

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.

- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.

- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.

In the project area, Class II bike lanes exist on Durham-Dayton Highway between Midway and Lott Road. Table 2 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *Butte County Bicycle Plan*.

Table 2 – Bicycle Facility Summary

Status Facility	Class	Length (miles)	Begin Point	End Point
Existing				
Durham-Dayton Hwy	II	2.8	McAnarlin Ave	Esquon Rd
Planned				
Jones Ave	III	2.2	Durham-Dayton Hwy	Midway
Lott Rd	II	2.1	Durham-Dayton Hwy	Oroville Chico Hwy
Midway	II	10.9	Durham-Dayton Hwy	Richvale Hwy

Source: Source: *2011 Butte County Bicycle Plan*, County of Butte, 2011

Transit Facilities

Transit service in Butte County is provided by B-Line (Butte Regional Transit) operated by the Butte County Association of Governments, which provides fixed-route bus service as well as flexible route paratransit for seniors and those with disabilities. The B-Line's bus Route 32 operates Monday through Friday and stops at the intersection of Durham-Dayton Highway/Midway. This route offers transit service to Chico, Biggs, and Gridley five days a week twice a day, once in the morning and once in the evening. Bike racks are available on all B-Line buses on a first come first served basis.

Capacity Analysis

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2010. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The intersection of Durham-Dayton Highway/Midway was analyzed using the "All-Way Stop-Controlled" Intersection methodology from the HCM, as the intersections are currently controlled with stop signs on all four approaches. This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole, and is then related to a Level of Service.

The rest of the study intersections were analyzed using the "Two-Way Stop-Controlled" methodology, which determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection. The ranges of delay associated with the various levels of service are indicated in Table 3.

Table 3 – Intersection Level of Service Criteria

LOS	Two-Way Stop-Controlled	All-Way Stop-Controlled
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach, and wait for vehicle to clear from one or more approaches prior to entering the intersection.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 25 to 35 seconds. Queues of more than two vehicles are encountered on one or more approaches.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 50 seconds. Drivers enter long queues on all approaches.

Reference: *Highway Capacity Manual,* Transportation Research Board, 2010

Traffic Operation Standards

The proposed project, along with all study intersections, is located within unincorporated Butte County. Therefore, traffic operation standards for the entire study area are based upon the County of Butte's policies, as contained in the *Butte County General Plan 2030*, policy CIR-P6.1:

> *The level of service for County-maintained roads within unincorporated areas of the county but outside municipalities' sphere of influences (SOI) shall be level of service (LOS) C or better during the PM peak hour. Within a municipality's SOI, the level of service shall meet the municipality's level of service policy.*

None of the study intersections are located within a municipality's SOI, so the County's standard of LOS C was applied to all study intersections.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the weekday a.m. and p.m. peak hours. This condition does not include project-generated traffic volumes. Rather than collecting new counts, volume data collected for a previously proposed version of the project in 2013 was factored up to reflect volumes indicative of 2018.

The Butte County Association of Governments (BCAG) has a gravity demand model that provides volume projections from a base year of 2006 to a future year of 2035 for the entire county. The model indicates that volumes in the project vicinity are expected to increase at a rate of 2.24 percent annually during the morning peak hour and 1.65 percent annually during the p.m. peak hour. Accounting for the five years of growth that has occurred since the 2013 analysis, growth factors of 1.11 and 1.08 were applied to the 2013 volumes to determine likely existing volumes. The BCAD volume data and growth factor calculations are contained in Appendix B.

Intersection Levels of Service

Under Existing Conditions for the year 2018, all study intersections are currently operating acceptably at LOS C or better during both peak hours. (All the stop-controlled approaches are operating at LOS B.) The existing traffic volumes are shown in Figure 2 and a summary of the intersection levels of service is contained in Table 4. Copies of the Level of Service Calculations for all evaluated scenarios are provided in Appendix C.

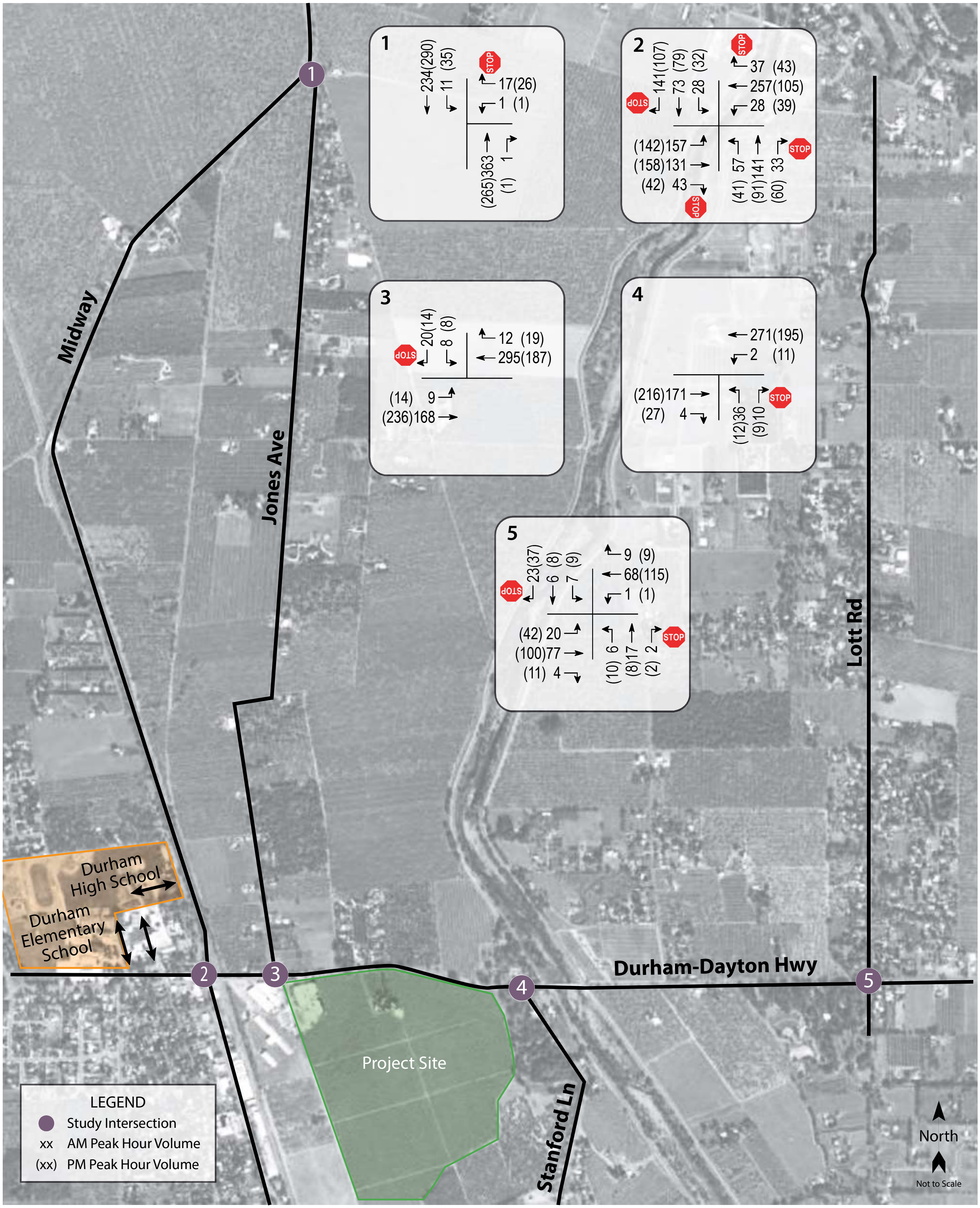

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Figure 2 – Existing Traffic Volumes

Table 4 – Existing Peak Hour Intersection Levels of Service				
Study Intersection	**Existing Conditions**			
Approach	**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**
1. Midway/Jones Ave	0.5	A	0.9	A
Westbound Jones Ave Approach	*10.6*	*B*	*10.0*	*B*
2. Durham-Dayton Hwy/Midway	15.5	C	12.2	B
3. Durham-Dayton Hwy/Jones Ave	0.7	A	0.7	A
Southbound Jones Ave Approach	*10.6*	*B*	*10.2*	*B*
4. Durham-Dayton Hwy/Stanford Ln	1.1	A	0.7	A
Northbound Stanford Ln Approach	*11.2*	*B*	*10.6*	*B*
5. Durham-Dayton Hwy/Lott Rd	3.1	A	3.1	A
Northbound Lott Rd Approach	*10.2*	*B*	*11.2*	*B*
Southbound Lott Rd Approach	*9.3*	*A*	*9.9*	*A*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

Future Conditions

The same growth rates used to factor up the 2013 counts for Existing Conditions were applied to determine volumes representative of the horizon year 2028 (15 years from collection of the counts and 10 years into the future). Based on the BCAG data, growth factors of 1.34 and 1.25 were applied to the morning and evening peak hours, respectively. As contained in the *Butte County Capital Improvement Program (CIP) Fiscal Years 2017 through 2026-27*, the intersection of Durham-Dayton Highway/Midway is planned to be signalized by the horizon year 2028, so levels of service at this intersection were analyzed with the planned improvement, in addition to its existing controls.

Intersection Levels of Service

Under Future Conditions, and with the planned installation of a traffic signal at Durham-Dayton Highway/Midway, all study intersections are expected to operate acceptably at LOS B or better during both peak hours. Future volumes are shown in Figure 3 and the resulting levels of service are summarized in Table 5.

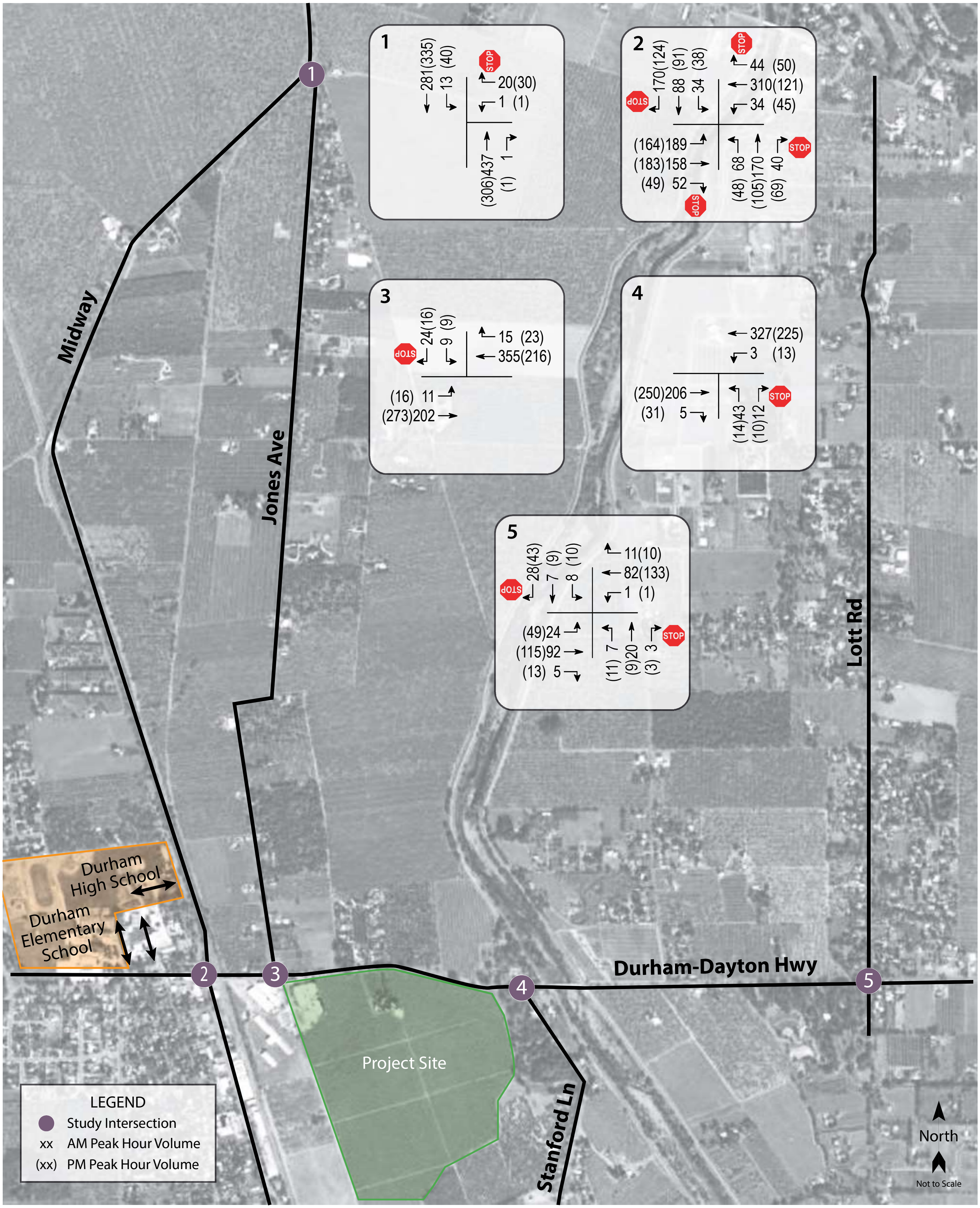

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Figure 3 – Future Traffic Volumes

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Table 5 – Future Peak Hour Intersection Levels of Service				
Study Intersection	**Future Conditions**			
Approach	**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**
1. Midway/Jones Ave	0.5	A	0.9	A
Westbound Jones Ave Approach	*11.2*	*B*	*10.3*	*B*
2. Durham-Dayton Hwy/Midway	**30.0**	**D**	15.3	C
Traffic Signal	14.8	B	14.5	B
Roundabout	10.5	B	8.1	A
3. Durham-Dayton Hwy/Jones Ave	0.8	A	0.7	A
Southbound Jones Ave Approach	*11.3*	*B*	*10.6*	*B*
4. Durham-Dayton Hwy/Stanford Ave	1.2	A	0.7	A
Northbound Stanford Ave Approach	*12.1*	*B*	*11.2*	*B*
5. Durham-Dayton Hwy/Lott Rd	3.2	A	3.2	A
Northbound Lott Rd Approach	*10.6*	*B*	*11.7*	*B*
Southbound Lott Rd Approach	*9.5*	*A*	*10.2*	*B*

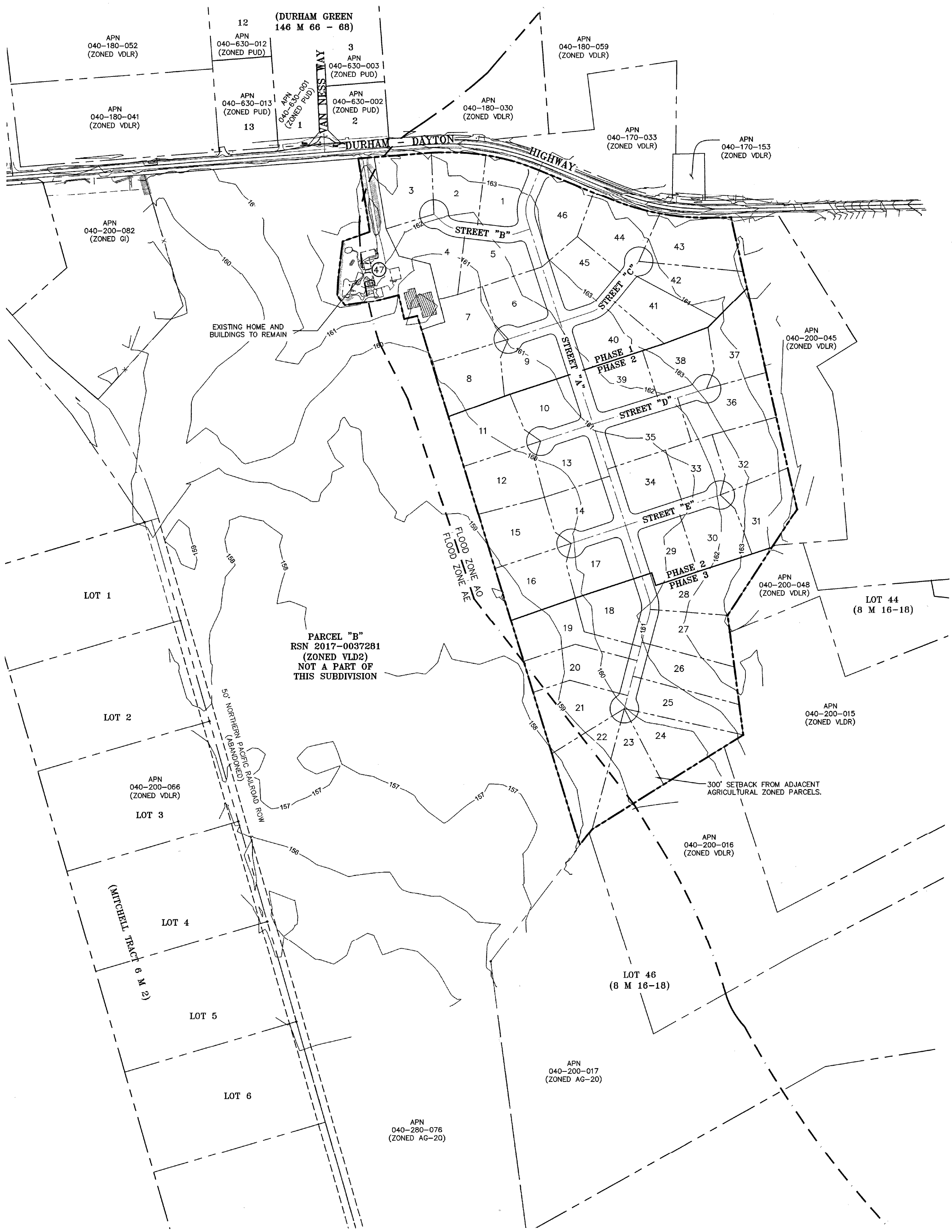
Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold** text indicates unacceptable operation; Shaded cells represent conditions with planned or recommended improvements

In addition to a traffic signal, the intersection of Durham-Dayton Highway/Midway was evaluated as a roundabout after a preliminary analysis indicated that the intersection may be a good candidate for such a facility based on geometry, right-of-way availability, rural setting, and traffic volumes. The CIP cost estimate for the planned traffic signal is $450,000 and a single-lane roundabout may likely be similar in cost. For this reason, along with the safety benefits that roundabouts provide, it is recommended that the County explore the possibility of installing a roundabout as opposed to a traffic signal. As shown in Table 5 above, doing so would result in delays less than those expected upon signalization.

Project Description

The proposed project consists of 46 single family homes with a total development area of approximately 50 acres. The project site is located on the south side of Durham-Dayton Highway, east of its intersection with Midway and is currently used as an orchard, though the trees would be removed to make room for the project, and occupied by an existing single family dwelling, which would remain. As proposed, the project would be constructed in three phases; the first phase would include construction of 16 homes and project Streets A, B, and C, the second phase would extend Street A to the southeast, construct Street D, and add 19 more homes, and the third phase would extend Street A to the southwest and construct 11 more homes. A single access point on Durham-Dayton Highway would connect to Street A and serve all 46 residences.

The proposed project site plan is shown in Figure 4.



Source: W. Gilbert Engineering 11/17

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Figure 4 – Site Plan

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10th Edition, 2017. Rates for "Single Family Detached Housing" (ITE LU #210) were applied. Based on this land use, the proposed project would be expected to result in 434 new daily trips on average, including 34 trips during the morning peak hour and 46 trips during the evening peak hour. It should be noted that the existing orchard that would be removed as part of the project is likely generating a nominal amount of traffic so any trip generation credits were ignored to provide conservative results. The anticipated trip generation for the proposed project is shown in Table 6.

Table 6 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Proposed											
Single Family Detached Housing	46	9.44	434	0.74	34	9	25	0.99	46	29	17

Trip Distribution

The trip distribution was developed based on existing traffic patterns, volumes presented in the County's travel demand forecasting model, and the anticipated origins and destinations for residents of the project. As would be expected, the highest percentages were assigned to those roads connecting to Chico. Table 7 summarizes the distribution assumptions applied.

Table 7 – Trip Distribution Assumptions

Route	Percent
To/from West via Durham-Dayton Hwy	35%
To/from North via Midway	25%
To/from North via Jones Ave	5%
To/From South via Midway	10%
To/From North via Lott Rd	5%
To/From East via Durham-Dayton Hwy	20%
TOTAL	**100%**

Intersection Operation

Existing plus Project Conditions

Upon the addition of project-generated traffic to existing volumes, all study intersections are expected to continue operating acceptably at LOS C or better during the a.m. and p.m. peak hours. The project traffic volumes are shown in Figure 5 and LOS results are summarized in Table 8.

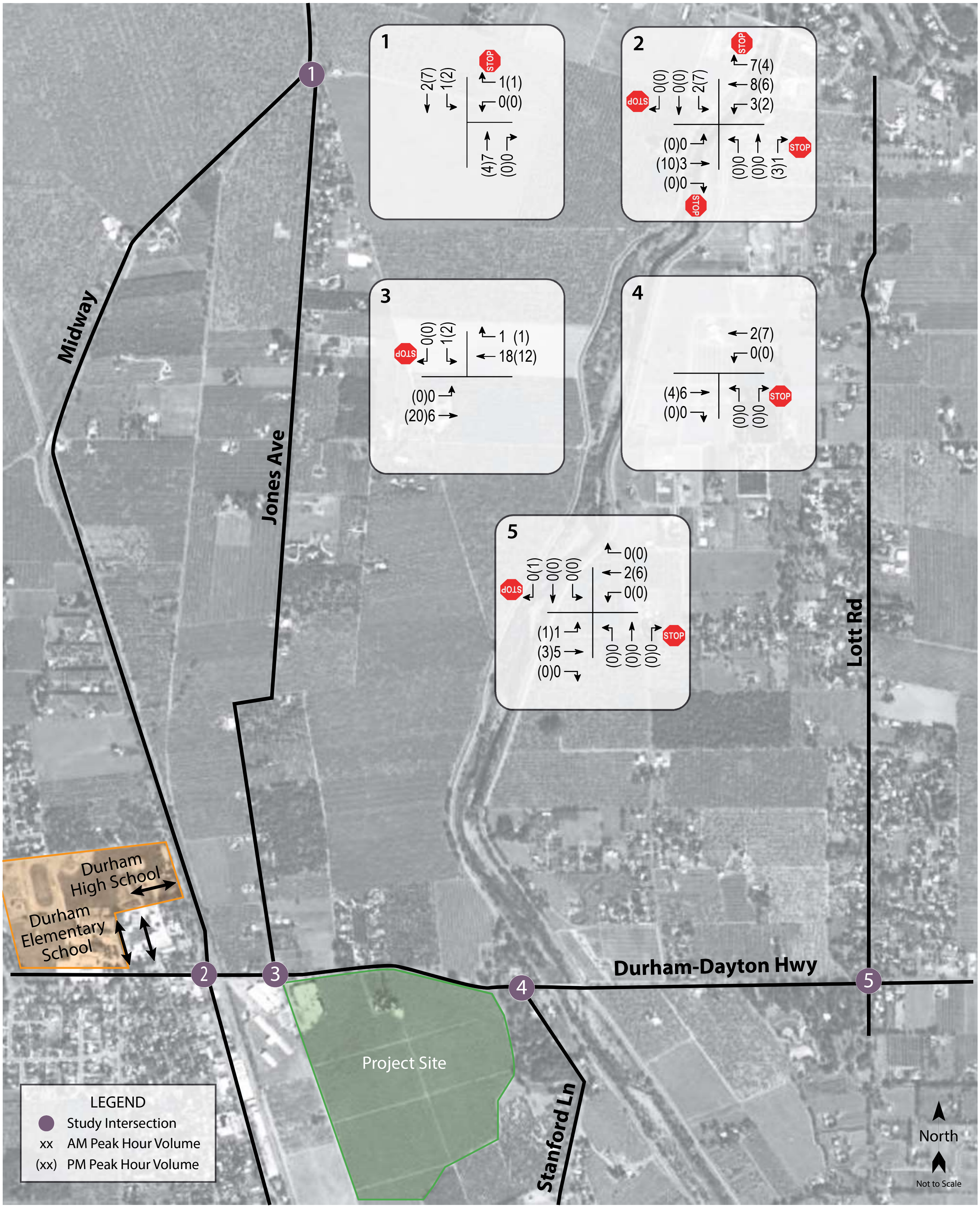

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Figure 5 – Project Traffic Volumes

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Table 8 – Existing and Existing plus Project Peak Hour Intersection Levels of Service								
Study Intersection	**Existing Conditions**				**Existing plus Project**			
Approach	**AM Peak**		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1. Midway/Jones Ave	0.5	A	0.9	A	0.5	A	0.9	A
Westbound Jones Ave Approach	*10.6*	*B*	*10.0*	*B*	*10.6*	*B*	*10.0*	*B*
2. Durham-Dayton Hwy/Midway	15.5	C	12.2	B	16.2	C	12.7	B
3. Durham-Dayton Hwy/Jones Ave	0.7	A	0.7	A	0.7	A	0.7	A
Southbound Jones Ave Approach	*10.6*	*B*	*10.2*	*B*	*10.9*	*B*	*10.6*	*B*
4. Durham-Dayton Hwy/Stanford Ave	1.1	A	0.7	A	1.1	A	0.6	A
Northbound Stanford Ave Approach	*11.2*	*B*	*10.6*	*B*	*11.3*	*B*	*10.7*	*B*
5. Durham-Dayton Hwy/Lott Rd	3.1	A	3.1	A	3.1	A	3.0	A
Northbound Lott Rd Approach	*10.2*	*B*	*11.2*	*B*	*10.3*	*B*	*11.3*	*B*
Southbound Lott Rd Approach	*9.3*	*A*	*9.9*	*A*	*9.4*	*A*	*9.9*	*A*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*

It should be noted that with the addition of project-related traffic volumes, average delay at the intersections of Durham-Dayton Highway with Stanford Lane and Lott Road decreases slightly during the p.m. peak hour. While this is counter-intuitive, this condition occurs when a project adds trips to movements that are currently underutilized or have delays that are below the intersection average, resulting in a better balance between approaches and lower overall average delay. The project would add traffic predominantly to the through and right-turn movements at the aforementioned intersections during the evening peak hour, and these movements have delays that are lower than the averages for the intersections as a whole, resulting in a slight reduction in the overall average delay. The conclusion could incorrectly be drawn that the project actually improves operation at these intersections based on this data alone; however, it is more appropriate to conclude that the project trips are expected to make use of excess capacity, so drivers will experience little, if any, change in conditions as a result of the project.

Finding – Upon the addition of project-related traffic to existing volumes, all study intersections would be expected to continue operating acceptably at LOS C or better during both peak hours, and the project's short-term impact on operation would be considered *less-than-significant*.

Future plus Project Conditions

Project-generated traffic was added to the traffic volumes obtained from the growth rates derived from the BCAG model to determine how the surrounding roadways would function under Future plus Project conditions. Upon the addition of project generated traffic, and with implementation of the planned traffic signal or roundabout at Durham-Dayton Highway/Midway, all study intersections would be expected to operate acceptably at LOS A or B during both peak hours; these results are summarized in Table 9.

Table 9 – Future and Future plus Project Peak Hour Intersection Levels of Service								
Study Intersection	**Future Conditions**				**Future plus Project**			
Approach	**AM Peak**		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1. Midway/Jones Ave	0.5	A	0.9	A	0.5	A	0.9	A
Westbound Jones Ave Approach	*11.2*	*B*	*10.3*	*B*	*11.3*	*B*	*10.3*	*B*
2. Durham-Dayton Hwy/Midway	**30.0**	**D**	15.3	C	**33.6**	**D**	16.1	C
Traffic Signal	14.8	B	14.5	B	14.9	B	14.6	B
Roundabout	10.5	B	8.1	A	10.9	B	8.3	A
3. Durham-Dayton Hwy/Jones Ave	0.8	A	0.7	A	0.8	A	0.7	A
Southbound Jones Ave Approach	*11.3*	*B*	*10.6*	*B*	*11.5*	*B*	*11.0*	*B*
4. Durham-Dayton Hwy/Stanford Ln	1.2	A	0.7	A	1.2	A	0.7	A
Northbound Stanford Ln Approach	*12.1*	*B*	*11.2*	*B*	*12.2*	*B*	*11.2*	*B*
5. Durham-Dayton Hwy/Lott Rd	3.2	A	3.2	A	3.1	A	3.1	A
Northbound Lott Rd Approach	*10.6*	*B*	*11.7*	*B*	*10.6*	*B*	*11.8*	*B*
Southbound Lott Rd Approach	*9.5*	*A*	*10.2*	*B*	*9.6*	*A*	*10.2*	*B*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold** text indicates unacceptable operation; Shaded cells represent conditions with planned or recommended improvements

Finding – Upon the addition of project-related traffic to the volumes anticipated for the year 2028, and with installation of a traffic signal or roundabout at Durham-Dayton Highway/Midway, all study intersections would be expected to operate at LOS A or B during both peak hours and the project's impact on long-term operation would be considered *less-than-significant*.

Recommendation – As mentioned earlier in this report, the County should explore the feasibility of installing a roundabout at Durham-Dayton Highway/Midway, instead of a traffic signal.

Alternative Transportation Modes

Pedestrian Facilities

Given the rural nature of the area surrounding the project site, the lack of sidewalks near the project is generally acceptable. However, because the project is located less than half a mile from the downtown area of Durham, where there are markets, the post office as well as the Elementary and High School, some residents including students may wish to walk from the development to the downtown area. Therefore, it is recommended that an all-weather pedestrian walkway or path be provided on the south side of Durham-Dayton Highway between the proposed terminus of the project sidewalk at the property boundary and the intersection with Midway. Crosswalks are already present at the intersection of Durham-Dayton Highway/Midway where there is an all-way Stop control. With these improvements, students walking to the Durham schools could take the following route:

- Walking along the south side of Durham-Dayton Highway on the recommended sidewalk/all-weather pathway to the intersection with Midway (approximately 2,500 feet).
- Crossing to the northwest corner of the Midway intersection using the all-way Stop controlled crossing.
- Walking along the north side of Durham-Dayton Highway on the existing sidewalk/asphalt pathways to Goodspeed Street or Putney Drive which access the Elementary and High Schools (approximately 1,000 feet).

Finding – The project would provide a sidewalk/all-weather pathway along the entirety of its frontage with Durham-Dayton Highway; however, the project sidewalk would be disconnected from the surrounding pedestrian network in the core of Durham.

Recommendation – Because the project site is located within walking distance from the downtown core of Durham and the schools located west of Midway, it is recommended that the project provide an all-weather pedestrian path on the south side of Durham-Dayton Highway between the project site and the intersection with Midway.

Bicycle Facilities

The existing bicycle lanes on Durham-Dayton Highway would provide adequate bicycle access for the development. The planned bicycle facilities in the area, including bicycle lanes on Midway and Lott Road as well as a future Class III bicycle route on Jones Avenue, will further improve bicycle access in the area of the development. No additional bicycle improvements are included or needed as part of this project proposal.

Finding – Existing bicycle facilities along with those planned would provide adequate access for bicyclists.

Transit

Existing transit routes are adequate to accommodate project-generated transit trips. The existing transit stop at Durham-Dayton Highway/Midway is located approximately 0.5 miles from the project site, which is considered an acceptable walking distance. Because the development falls within the half-mile threshold that is often used as an upper limit of transit accessibility, no changes to existing services are recommended.

Finding – Existing transit service is adequate to accommodate the demand anticipated for the project.

Access and Circulation

Site Access

Access to the project site would be provided via a new public Street A, which would connect to the south side of Durham-Dayton Highway approximately 0.5 miles east of Midway. Street A would extend straight back from the middle of a horizontal curve in the alignment of Durham-Dayton Highway and from there would bend to the southeast where it would provide access to project Streets B, C, D, and E which would run perpendicular to Street A. All proposed project streets would be equipped with curbs, gutters, and sidewalks.

Finding – As proposed in the site plan, on-site circulation would be expected to operate acceptably.

Sight Distance

Sight distance along Durham-Dayton Highway was evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. At intersections of public streets , a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. The recommended sight distance at intersections is based on corner sight distance, which uses the approach travel speeds as the basis for determining the recommended sight distance. Table 10 summarizes the minimum sight distance requirements.

Table 10 – Intersection Sight Distance Criteria

Speed	Public Road Major Approach Stopping Sight Distance	Public Road Minor Approach Corner Sight Distance	Private Road and Rural Driveway Stopping Sight Distance
30 mph	200 feet	330 feet	200 feet
35 mph	250 feet	385 feet	250 feet
40 mph	300 feet	440 feet	300 feet

Source: *Highway Design Manual*, 6th Edition, California Department of Transportation, 2017

The speed limit on the segment of Durham-Dayton Highway along the project frontage is 35 miles per hour. For a 35-mph design speed, a public road intersection should have a corner sight distance of at least 385 feet. Based on a review of field conditions, sight distance at the proposed access points extends more than 400 feet in both directions, which is adequate for the posted speed limit.

Finding – Adequate sight distance is available at the project intersection to accommodate all turns.

Recommendation – To ensure that adequate sight lines are retained, it is recommended that any vegetation planted along the project frontages is maintained such that it is less than three, or more than seven, feet in height.

Access Analysis

Left-Turn Lane Warrants

The need for a left-turn lanes on Durham-Dayton Highway at the project access point was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as an update of the methodology developed by the Washington State Department of Transportation and published in the *Method For Prioritizing*

Intersection Improvements, January 1997. The NCHRP report references a methodology developed by M. D. Harmelink that includes equations that can be applied to expected or actual traffic volumes in order to determine the need for a left-turn pocket based on safety issues. Based on our research and discussions with Caltrans staff, this methodology is consistent with the *Guidelines for Reconstruction of Intersections*, August 1985, which was referenced in Section 405.2, Left-turn Channelization, of previous editions of the Caltrans HDM, though this reference has been deleted from the most recent edition of this manual.

Based on Future plus Project volumes, which represents worst-case conditions, a left-turn lane would not be warranted during either of the weekday peak hours.

Finding – A left-turn lane would not be warranted on Durham-Dayton Highway at the project access point.

Right-Turn Lane Warrants

The need for a right-turn lane or taper was also evaluated and would consist of a lane installed to the right of the travel lane and would be a minimum of ten feet wide, plus a shoulder where not adjacent to a curb. A right-turn taper is a shoulder area that gets progressively wider as the motorist drives toward the intersection. Both improvements are meant to provide an area for motorists turning right to move out of the traffic lane without impeding through traffic.

The need for a right-turn lane or taper on Durham-Dayton Highway was evaluated under the same worst-case conditions that left-turn lane warrants were evaluated. Based on Future plus Project volumes, no additional facilities in the form of either a right-turn lane or right-turn taper would be warranted during either of the weekday peak hours.

The turn-lane analysis sheets are contained in Appendix D.

Finding – Neither a right-turn lane, nor right-turn taper, would not be warranted at the project access point on Durham-Dayton Highway.

Conclusions and Recommendations

Conclusions

- Under Existing Conditions, all study intersections currently operate at LOS C or better during both the a.m. and p.m. peak hours, meeting the applicable County of Butte LOS standards.
- With the projected future growth in regional traffic, all study intersections are expected to continue to operate acceptably at LOS C or better during both peak hours, except for Durham-Dayton Highway/Midway which would be expected to deteriorate to LOS D during the morning peak hour. Upon installation of the planned traffic signal identified in the County's CIP, the intersection would be expected to operate acceptably at LOS B during the morning peak hour.
- The proposed project is expected to generate an average of 434 new daily trips on average, of which 34 would occur during the a.m. peak hour and 46 would occur during the p.m. peak hour.
- With the addition of project-generated traffic to existing volumes, all study intersections are expected to continue to operate acceptably. Likewise, acceptable operations are expected under Future plus Project Conditions, assuming installation of a traffic signal at Durham-Dayton Highway/Midway.
- The project would provide a sidewalk along its frontage with Durham-Dayton Highway; however, the sidewalk would terminate at the project boundaries leaving the site isolated from the downtown area and the schools west of Midway.
- Existing Class II bicycle lanes are located on both sides of Durham-Dayton Highway in the study area. Proposed bicycle facilities are planned for Midway, Jones Avenue, and Lott Road. These existing and proposed facilities provide adequate access for bicyclists.
- The project site is served by one transit line connecting the area of Durham with several nearby cities. This transit line is expected to accommodate the demand generated by the proposed development.
- On-site circulation would be expected to operate acceptably and adequate sight distance is available at the proposed access point to accommodate all turns into and out of the site.
- No additional right- or left-turn channelization facilities would be warranted on Durham-Dayton Highway at the project access point.

Recommendations

- As part of the *Butte County Capital Improvement Program (CIP) Fiscal Years 2017 through 2026-27*, the County of Butte should consider installing a roundabout at the intersection of Durham-Dayton Highway/Midway as an alternative to a traffic signal. A preliminary evaluation indicates that the intersection may be a good candidate for a roundabout.
- It is suggested that an all-weather path or walkway be provided on the south side of Durham-Dayton Highway, connecting the proposed development with the existing crosswalk and sidewalks at the intersection with Midway which lead to the core area of Durham.
- Installation of any vegetation or signage at the project access point should be done in a manner that does not impede clear sight lines.

Study Participants and References

Study Participants

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Assistant Engineer	Cameron Nye, EIT
Editing/Formatting/Graphics	Alex Scrobonia, Katia Wolfe
Report Review	Dalene J. Whitlock, PE, PTOE

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Appendix A

Collision Rate Calculations

Intersection Collision Rate Calculations

Creekside Estates TIS

Intersection # 1: Midway & Jones Ave
Date of Count: Monday, May 21, 2018

Number of Collisions: 1
Number of Injuries: 1
Number of Fatalities: 0
ADT: 6900
Start Date: January 1, 2013
End Date: December 31, 2017
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{1 \times 1{,}000{,}000}{6{,}900 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.08 c/mve**	**0.0%**	**100.0%**
Statewide Average*	**0.16 c/mve**	**1.7%**	**39.2%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 2: Durham-Dayton Hwy & Midway
Date of Count: Monday, May 21, 2018

Number of Collisions: 4
Number of Injuries: 2
Number of Fatalities: 0
ADT: 7400
Start Date: January 1, 2013
End Date: December 31, 2017
Number of Years: 5

Intersection Type: Four-Legged
Control Type: 4 Way Stop
Area: Suburban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{4 \times 1{,}000{,}000}{7{,}400 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.30 c/mve**	**0.0%**	**50.0%**
Statewide Average*	**0.32 c/mve**	**0.4%**	**44.7%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Creekside Estates TIS

Intersection # 3: Durham-Dayton Hwy & Jones Ave

Date of Count: Monday, May 21, 2018

Number of Collisions: 1
Number of Injuries: 1
Number of Fatalities: 0
ADT: 4800
Start Date: January 1, 2013
End Date: December 31, 2017
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Suburban

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{1 \times 1{,}000{,}000}{4{,}800 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.11 c/mve**	**0.0%**	**100.0%**
Statewide Average*	**0.14 c/mve**	**0.7%**	**38.0%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection # 4: Durham-Dayton Hwy & Stanford Ln

Date of Count: Monday, May 21, 2018

Number of Collisions: 1
Number of Injuries: 0
Number of Fatalities: 0
ADT: 4700
Start Date: January 1, 2013
End Date: December 31, 2017
Number of Years: 5

Intersection Type: Tee
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{1 \times 1{,}000{,}000}{4{,}700 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.12 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.16 c/mve**	**1.7%**	**39.2%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

Creekside Estates TIS

Intersection # 5: Durham-Dayton Hwy & Lott Rd
Date of Count: Monday, May 21, 2018

Number of Collisions: 2
Number of Injuries: 1
Number of Fatalities: 0
ADT: 3500
Start Date: January 1, 2013
End Date: December 31, 2017
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Stop & Yield Controls
Area: Rural

$$\text{collision rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x 365 Days per Year x Number of Years}}$$

$$\text{collision rate} = \frac{2 \quad x \quad 1{,}000{,}000}{3{,}500 \quad x \quad 365 \quad x \quad 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.31 c/mve**	**0.0%**	**50.0%**
Statewide Average*	**0.23 c/mve**	**2.0%**	**40.4%**

ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2013 Collision Data on California State Highways, Caltrans

Appendix B

BCAG Volume Data and Growth Factor Calculations

Butte County Association of Governments - Regional Traffic Volume Forecasts (2035)

Information Prepared October 20, 2008

SITE_ID	JURISDICTION	ROUTE	LOCATION	2006 Traffic Volumes * Average Daily Traffic Volume	2006 PM Peak Hour Volume	2006 AM Peak Hour Volume	2035 Traffic Volume Forecast ** Average Daily Traffic Volume	2035 PM Peak Hour Volume	2035 AM Peak Hour Volume
1	City of Biggs	B ST	E of 7TH ST	2,312	191	173	4,150	410	310
2	City of Biggs	W BIGGS GRIDLEY RD	S of BANNOCK ST	1,865	170	130	5,390	510	410
3	Butte County	AFTON RD	W of AGUA FRIAS RD	79	8	10	110	10	20
4	Butte County	AGUAS FRIAS RD	S of DURHAM DAYTON RD	815	86	94	1,300	140	130
5	Butte County	AGUAS FRIAS RD	S of NELSON RD	491	50	44	980	100	80
6	Butte County	CHICO RIVER RD	W of ALBERTON RD	1,311	136	127	1,900	180	160
7	Butte County	COHASSET HWY	N of KEEFER RD	1,718	173	186	1,910	190	200
8	Butte County	COLUSA HWY	W of HATCH RD	496	52	54	720	70	70
9	City of Chico	DAYTON RD	S of ARCHER AVE	6,709	585	550	17,600	1,440	1,460
10	Butte County	DAYTON RD	N of HEGAN LN	3,533	342	336	3,890	410	390
11	Butte County	DUNSTONE DR	S of GRUBBS RD	195	25	20	200	30	30
12	Butte County	DURHAM DAYTON HWY	W of OROVILLE-CHICO HWY	2,215	198	257	2,810	240	300
13	Butte County	DURHAM PENZ RD	E of SR 99	8,289	818	1,017	13,370	1,030	1,920
14	Butte County	DURHAM PENZ RD	E of SR 191	2,255	197	229	3,050	250	330
15	Butte County	E GRIDLEY RD	At FEATHER RIVER BRIDGE	6,250	551	487	12,210	1,230	990
16	Butte County	ENTLER AVE	E of MIDWAY	1,230	128	111	1,240	130	120
17	Butte County	FORBESTOWN RD	S of OLD OLIVE HWY	2,978	266	259	6,250	520	550
18	Butte County	GARNER LN	N of SR 99	5,548	524	600	14,140	1,310	1,310
19	Butte County	HAMILTON CITY NORD	N of BENNETT RD	735	71	94	1,440	150	150
20	Butte County	HEGAN LN	E of FIMPLE LN	3,583	346	283	4,580	390	360
21	City of Chico	HICKS LN	N of EATON RD	3,239	311	308	17,680	1,640	1,540
22	Butte County	HONEY RUN RD	W of CENTERVILLE RD	1,598	148	175	1,600	150	180
23	Butte County	KEEFER RD	W of GARNER LN	1,109	109	102	1,250	130	130
24	Butte County	LARKIN RD	S of CHANDON AVE	2,672	250	218	4,550	440	370
25	City of Oroville	LARKIN RD	S of SR 162	4,098	358	311	7,500	670	560
26	Butte County	LOS VERJELES RD	S of LA PORTE RD	996	83	84	1,020	90	90
27	Butte County	LOWER WYANDOTTE RD	W of ALVERDA DR	7,210	573	461	12,880	1,000	870
28	Butte County	MERIDIAN RD	E of SR 99	1,145	112	119	1,150	120	120
29	Butte County	MIDWAY RD	S of DURHAM DAYTON RD	4,549	433	370	6,910	640	610
30	City of Chico	MIDWAY RD	S of E PARK AVE	16,545	1,399	1,307	31,840	3,030	2,380
31	Butte County	MIDWAY RD	S of HEGAN LN	9,114	857	771	17,240	1,740	1,300
32	Butte County	MIDWAY RD	N of NELSON SHIPPEE RD	1,511	151	133	1,770	170	160
33	Butte County	MINERS RANCH RD	S of SR 162	2,777	242	208	4,740	440	480
34	Butte County	OAKVALE AVE	S of SR 162	2,754	338	409	4,350	410	570
35	Butte County	OPHIR RD	E of FEATHER RIVER BLVD	6,999	613	546	17,730	1,490	1,490
36	Butte County	ORD FERRY RD	W of RIVER RD	3,244	322	271	4,430	440	360
37	Butte County	ORD FERRY RD	W of AGUAS FRIAS RD	3,753	365	346	4,430	440	410
38	Butte County	ORO-QUINCY HWY	At LAKE MADRONE BRIDGE	375	47	56	760	80	80
39	Butte County	ORO-BANGOR HWY	S of V-7 RD	1,949	196	197	3,670	360	330
40	Butte County	ORO-BANGOR HWY	E of FOOTHILL BLVD	1,747	178	237	2,300	250	330
41	Butte County	OROVILLE-BANGOR HWY	N of SWEDES FLAT RD	2,036	186	162	2,040	190	180
42	City of Oroville	ORO-QUINCY HWY	E of FOOTHILL BLVD	3,116	303	297	4,270	460	460
43	Butte County	PENNINGTON RD	S of W EVANS REIMER RD	253	24	23	450	40	40
44	Butte County	SKYLINE BLVD	S of SR 162	1,261	118	117	1,270	120	120
45	Butte County	SKYWAY	S of COUTOLENC RD	776	68	66	1,140	100	100
46	Butte County	SKYWAY	N of NIMSHEW RD	1,781	152	138	2,500	210	200
47	Butte County	SKYWAY	S of POWELLTON RD	1,054	96	88	1,420	120	120
48	Butte County	UPPER PALERMO RD	S of OPHIR RD/LOWER WYANDOTTE RD	3,904	311	378	4,860	380	480
49	Butte County	W SACRAMENTO AVE	W of MUIR AVE	961	102	78	970	110	80
50	City of Chico	BROADWAY	N of SR 32 (8TH ST)	10,097	945	796	13,220	1,230	1,220
51	City of Chico	BROADWAY	S of 2ND ST	7,306	681	619	8,720	950	680
52	City of Chico	BRUCE	N of LAKEWEST DR	12,581	1,159	970	21,480	2,060	1,700
53	City of Chico	BRUCE RD	S of HUMBOLT RD	10,487	1,001	886	24,340	2,390	2,030
54	City of Chico	BRUCE RD	N of SKYWAY	8,493	831	720	23,960	2,450	1,860
55	City of Chico	BRUCE RD	N of E 20TH ST	11,082	1,068	1,049	25,130	2,370	2,180
56	City of Chico	COHASSET RD	N of EAST AVE	17,728	1,498	1,379	19,820	1,850	1,670
57	City of Chico	COHASSET RD	N of EATON RD	11,033	1,228	1,162	18,310	2,030	1,780
58	City of Chico	COHASSET RD	S of EAST	24,961	2,097	1,867	31,880	2,780	2,360
59	City of Chico	E 1ST AVE	E of ESPLANADE	12,394	1,048	871	14,450	1,200	1,060
60	City of Chico	E 1ST AVE	W of ESPLANADE RD	10,981	894	750	12,130	950	810
61	City of Chico	E 1ST AVE	W of LONGFELLOW	14,138	1,196	1,106	17,370	1,570	1,420
62	City of Chico	E 1ST AVE	W of SHERMAN AVE	16,913	1,300	1,294	16,920	1,340	1,320

Segment	AM 2006	AM 2035	AM Annual Growth Rate	PM 2006	PM 2035	PM Annual Growth Rate
*Midway S of Durham-Daton Hwy	370	610	2.24%	433	640	1.65%

**Source is Butte County Association of Governments - Regional Traffic Volumes Forecasts (2035)*

2013 to 2018 AM GROWTH FACTOR	1.112
2013 to 2018 PM GROWTH FACTOR	1.082
2013 to 2028 AM GROWTH FACTOR	1.336
2013 to 2028 PM GROWTH FACTOR	1.247

Appendix C

Intersection Level of Service Calculations

Intersection Level Of Service Report
Intersection 1: Midway/Jones Ave

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):	0.002

Intersection Setup

Name	Midway		Midway		Jones Ave	
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	1	0	0	0
Pocket Length [ft]	100.00	100.00	75.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Midway		Midway		Jones Ave	
Base Volume Input [veh/h]	326	1	10	210	1	15
Base Volume Adjustment Factor	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120
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	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]	363	1	11	234	1	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	91	0	3	59	0	4
Total Analysis Volume [veh/h]	363	1	11	234	1	17
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	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.04	0.00	13.19	10.44
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.03	0.00	0.08	0.08
95th-Percentile Queue Length [ft]	0.00	0.00	0.70	0.00	2.09	2.09
d_A, Approach Delay [s/veh]	0.00		0.36		10.59	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.45					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	All-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.569

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	51	127	30	25	66	127	141	118	39	25	231	33
Base Volume Adjustment Factor	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120
Heavy Vehicles Percentage [%]	2.00	2.00	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]	57	141	33	28	73	141	157	131	43	28	257	37
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	14	35	8	7	18	35	39	33	11	7	64	9
Total Analysis Volume [veh/h]	57	141	33	28	73	141	157	131	43	28	257	37
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	552	579	582	586
Degree of Utilization, x	0.42	0.42	0.57	0.55

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.05	2.06	3.56	3.33
95th-Percentile Queue Length [ft]	51.30	51.40	88.96	83.18
Approach Delay [s/veh]	14.12	13.62	17.05	16.39
Approach LOS	B	B	C	C
Intersection Delay [s/veh]	15.52			
Intersection LOS	C			

Intersection Level Of Service Report
Intersection 3: Durham-Dayton Hwy/Jones Ave

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	7	18	8	151	265	11
Base Volume Adjustment Factor	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120
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	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]	8	20	9	168	295	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	5	2	42	74	3
Total Analysis Volume [veh/h]	8	20	9	168	295	12
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	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.96	10.11	7.89	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.13	0.13	0.49	0.49	0.00	0.00
95th-Percentile Queue Length [ft]	3.28	3.28	12.28	12.28	0.00	0.00
d_A, Approach Delay [s/veh]	10.64		0.40		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.72					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Durham-Dayton Hwy/Stanford Ln

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.063

Intersection Setup

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	32	9	154	4	2	244
Base Volume Adjustment Factor	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120
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	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]	36	10	171	4	2	271
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	3	43	1	1	68
Total Analysis Volume [veh/h]	36	10	171	4	2	271
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	Yes		
Storage Area [veh]	1	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	0.06	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.68	9.47	0.00	0.00	7.57	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.20	0.20	0.00	0.00	0.72	0.72
95th-Percentile Queue Length [ft]	5.07	5.07	0.00	0.00	18.05	18.05
d_A, Approach Delay [s/veh]	11.20		0.00		0.06	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.07					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Durham-Dayton Hwy/Lott Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	5	15	2	6	5	21	18	69	4	1	61	8
Base Volume Adjustment Factor	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120
Heavy Vehicles Percentage [%]	2.00	2.00	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]	6	17	2	7	6	23	20	77	4	1	68	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	2	4	1	2	2	6	5	19	1	0	17	2
Total Analysis Volume [veh/h]	6	17	2	7	6	23	20	77	4	1	68	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.01	0.02	0.00	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.19	10.42	8.85	10.10	10.40	8.82	7.40	0.00	0.00	7.38	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.11	0.11	0.11	0.13	0.13	0.13	0.21	0.21	0.21	0.16	0.16	0.16
95th-Percentile Queue Length [ft]	2.73	2.73	2.73	3.24	3.24	3.24	5.33	5.33	5.33	4.06	4.06	4.06
d_A, Approach Delay [s/veh]	10.24			9.33			1.46			0.09		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	3.11											
Intersection LOS	B											

Generated with PTV VISTRO
Version 5.00-00

Intersection Level Of Service Report
Intersection 1: Midway/Jones Ave

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):	0.002

Intersection Setup

Name	Midway		Midway		Jones Ave	
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	1	0	0	0
Pocket Length [ft]	100.00	100.00	75.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Midway		Midway		Jones Ave	
Base Volume Input [veh/h]	245	1	32	268	1	24
Base Volume Adjustment Factor	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820
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	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]	265	1	35	290	1	26
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	0	9	73	0	7
Total Analysis Volume [veh/h]	265	1	35	290	1	26
Pedestrian Volume [ped/h]	0		0		0	

Generated with PTV VISTRO
Version 5.00-00

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	0.03	0.00	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	7.85	0.00	13.43	9.83
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.08	0.00	0.11	0.11
95th-Percentile Queue Length [ft]	0.00	0.00	2.08	0.00	2.79	2.79
d_A, Approach Delay [s/veh]	0.00		0.85		9.97	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.88					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	All-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.518

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	38	84	55	30	73	99	131	146	39	36	97	40
Base Volume Adjustment Factor	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820
Heavy Vehicles Percentage [%]	2.00	2.00	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]	41	91	60	32	79	107	142	158	42	39	105	43
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	10	23	15	8	20	27	36	40	11	10	26	11
Total Analysis Volume [veh/h]	41	91	60	32	79	107	142	158	42	39	105	43
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	633	652	661	641
Degree of Utilization, x	0.30	0.33	0.52	0.29

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.28	1.47	2.99	1.21
95th-Percentile Queue Length [ft]	31.88	36.66	74.84	30.22
Approach Delay [s/veh]	11.13	11.27	14.14	10.90
Approach LOS	B	B	B	B
Intersection Delay [s/veh]	12.22			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 3: Durham-Dayton Hwy/Jones Ave

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	7	13	13	218	173	18
Base Volume Adjustment Factor	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820
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	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]	8	14	14	236	187	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	4	4	59	47	5
Total Analysis Volume [veh/h]	8	14	14	236	187	19
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	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.68	9.42	7.66	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.10	0.10	0.67	0.67	0.00	0.00
95th-Percentile Queue Length [ft]	2.40	2.40	16.73	16.73	0.00	0.00
d_A, Approach Delay [s/veh]	10.24		0.43		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Durham-Dayton Hwy/Stanford Ln

Control Type:	Two-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	11	8	200	25	10	180
Base Volume Adjustment Factor	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820
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	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]	12	9	216	27	11	195
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	2	54	7	3	49
Total Analysis Volume [veh/h]	12	9	216	27	11	195
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	Yes		
Storage Area [veh]	1	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	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	11.46	9.53	0.00	0.00	7.74	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.07	0.07	0.00	0.00	0.55	0.55
95th-Percentile Queue Length [ft]	1.63	1.63	0.00	0.00	13.77	13.77
d_A, Approach Delay [s/veh]	10.63		0.00		0.41	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.66					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 5: Durham-Dayton Hwy/Lott Rd

Control Type:	Two-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	9	7	2	8	7	34	39	92	10	1	106	8
Base Volume Adjustment Factor	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820
Heavy Vehicles Percentage [%]	2.00	2.00	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]	10	8	2	9	8	37	42	100	11	1	115	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	3	2	1	2	2	9	11	25	3	0	29	2
Total Analysis Volume [veh/h]	10	8	2	9	8	37	42	100	11	1	115	9
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.02	0.01	0.00	0.01	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.47	11.40	9.00	11.20	11.53	9.19	7.53	0.00	0.00	7.44	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.10	0.10	0.10	0.22	0.22	0.22	0.35	0.35	0.35	0.28	0.28	0.28
95th-Percentile Queue Length [ft]	2.58	2.58	2.58	5.47	5.47	5.47	8.74	8.74	8.74	6.91	6.91	6.91
d_A, Approach Delay [s/veh]	11.19			9.87			2.07			0.06		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	3.07											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 1: Midway/Jones Ave

Control Type:	Two-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Midway		Midway		Jones Ave	
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	1	0	0	0
Pocket Length [ft]	100.00	100.00	75.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Midway		Midway		Jones Ave	
Base Volume Input [veh/h]	326	1	10	210	1	15
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	1.34	1.34	1.34	1.34	1.34	1.34
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]	437	1	13	281	1	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	109	0	3	70	0	5
Total Analysis Volume [veh/h]	437	1	13	281	1	20
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	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	8.25	0.00	14.76	11.03
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.04	0.00	0.11	0.11
95th-Percentile Queue Length [ft]	0.00	0.00	0.88	0.00	2.71	2.71
d_A, Approach Delay [s/veh]	0.00		0.36		11.21	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.45					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	All-way stop	Delay (sec / veh):	30.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.826

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	51	127	30	25	66	127	141	118	39	25	231	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
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]	68	170	40	34	88	170	189	158	52	34	310	44
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	17	43	10	9	22	43	47	40	13	9	78	11
Total Analysis Volume [veh/h]	68	170	40	34	88	170	189	158	52	34	310	44
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	454	473	484	485
Degree of Utilization, x	0.61	0.62	0.83	0.80

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	4.01	4.11	8.05	7.44
95th-Percentile Queue Length [ft]	100.21	102.63	201.24	185.99
Approach Delay [s/veh]	22.67	22.16	36.83	33.97
Approach LOS	C	C	E	D
Intersection Delay [s/veh]	29.96			
Intersection LOS	D			

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Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	Signalized	Delay (sec / veh):	14.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.540

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	51	127	30	25	66	127	141	118	39	25	231	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
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]	68	170	40	34	88	170	189	158	52	34	310	44
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	17	43	10	9	22	43	47	40	13	9	78	11
Total Analysis Volume [veh/h]	68	170	40	34	88	170	189	158	52	34	310	44
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		

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Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	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	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	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	19	0	0	19	0	0	41	0	0	41	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	5	0	0	5	0	0	5	0	0	5	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	C	C
C, Cycle Length [s]	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	24	24
g / C, Green / Cycle	0.46	0.46	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.17	0.18	0.36	0.22
s, saturation flow rate [veh/h]	1639	1634	1106	1762
c, Capacity [veh/h]	832	822	536	778
d1, Uniform Delay [s]	10.27	10.52	17.36	13.52
k, delay calibration	0.50	0.50	0.15	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.08	1.20	2.91	0.50
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

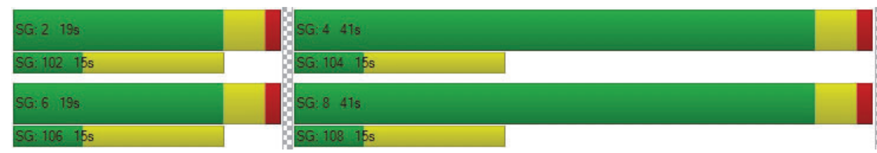
X, volume / capacity	0.33	0.36	0.74	0.50
d, Delay for Lane Group [s/veh]	11.35	11.72	20.26	14.01
Lane Group LOS	B	B	C	B
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	2.32	2.34	5.23	3.47
50th-Percentile Queue Length [ft]	57.98	58.50	130.67	86.85
95th-Percentile Queue Length [veh]	4.17	4.21	8.98	6.25
95th-Percentile Queue Length [ft]	104.36	105.30	224.40	156.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.35	11.35	11.35	11.72	11.72	11.72	20.26	20.26	20.26	14.01	14.01	14.01
Movement LOS	B	B	B	B	B	B	C	C	C	B	B	B
d_A, Approach Delay [s/veh]	11.35			11.72			20.26			14.01		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	14.81											
Intersection LOS	B											
Intersection V/C	0.540											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	Roundabout	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	51	127	30	25	66	127	141	118	39	25	231	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
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]	68	170	40	34	88	170	189	158	52	34	310	44
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	17	43	10	9	22	43	47	40	13	9	78	11
Total Analysis Volume [veh/h]	68	170	40	34	88	170	189	158	52	34	310	44
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	389			420			159			436		
Exiting Flow Rate [veh/h]	196			386			124			366		
Demand Flow Rate [veh/h]	68	170	40	34	88	170	189	158	52	34	310	44
Adjusted Demand Flow Rate [veh/h]	68	170	40	34	88	170	189	158	52	34	310	44

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1130.00	1130.00	1130.00	1130.00
B (coefficient)	0.00100	0.00100	0.00100	0.00100
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	284	298	407	396
Capacity of Entry and Bypass Lanes [veh/h]	767	743	964	732
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	752	728	945	717
X, volume / capacity	0.37	0.40	0.42	0.54

Movement, Approach, & Intersection Results

Lane LOS	A	B	A	B
95th-Percentile Queue Length [veh]	1.71	1.94	2.13	3.28
95th-Percentile Queue Length [ft]	42.83	48.53	53.16	81.99
Approach Delay [s/veh]	9.43	10.23	8.68	13.50
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	10.54			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 3: Durham-Dayton Hwy/Jones Ave

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):	0.019

Intersection Setup

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	7	18	8	151	265	11
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	1.34	1.34	1.34	1.34	1.34	1.34
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]	9	24	11	202	355	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	6	3	51	89	4
Total Analysis Volume [veh/h]	9	24	11	202	355	15
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	0.04	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.04	10.62	8.06	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.17	0.17	0.65	0.65	0.00	0.00
95th-Percentile Queue Length [ft]	4.31	4.31	16.29	16.29	0.00	0.00
d_A, Approach Delay [s/veh]	11.28		0.42		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.75					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Durham-Dayton Hwy/Stanford Ln

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):	0.086

Intersection Setup

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	32	9	154	4	2	244
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	1.34	1.34	1.34	1.34	1.34	1.34
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]	43	12	206	5	3	327
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	3	52	1	1	82
Total Analysis Volume [veh/h]	43	12	206	5	3	327
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	Yes		
Storage Area [veh]	1	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	0.09	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.72	9.86	0.00	0.00	7.65	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.28	0.28	0.00	0.00	0.95	0.95
95th-Percentile Queue Length [ft]	7.02	7.02	0.00	0.00	23.86	23.86
d_A, Approach Delay [s/veh]	12.10		0.00		0.07	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.15					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Durham-Dayton Hwy/Lott Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.031

Intersection Setup

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	5	15	2	6	5	21	18	69	4	1	61	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
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]	7	20	3	8	7	28	24	92	5	1	82	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	2	5	1	2	2	7	6	23	1	0	21	3
Total Analysis Volume [veh/h]	7	20	3	8	7	28	24	92	5	1	82	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.01	0.03	0.00	0.01	0.01	0.03	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.63	10.77	8.99	10.51	10.73	8.94	7.44	0.00	0.00	7.41	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.14	0.14	0.14	0.16	0.16	0.16	0.26	0.26	0.26	0.20	0.20	0.20
95th-Percentile Queue Length [ft]	3.47	3.47	3.47	4.05	4.05	4.05	6.56	6.56	6.56	5.02	5.02	5.02
d_A, Approach Delay [s/veh]	10.56			9.52			1.48			0.08		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	3.17											
Intersection LOS	B											

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Intersection Level Of Service Report
Intersection 1: Midway/Jones Ave

Control Type:	Two-way stop	Delay (sec / veh):	14.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Midway		Midway		Jones Ave	
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	1	0	0	0
Pocket Length [ft]	100.00	100.00	75.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Midway		Midway		Jones Ave	
Base Volume Input [veh/h]	245	1	32	268	1	24
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	1.25	1.25	1.25	1.25	1.25	1.25
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]	306	1	40	335	1	30
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	0	10	84	0	8
Total Analysis Volume [veh/h]	306	1	40	335	1	30
Pedestrian Volume [ped/h]	0		0		0	

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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	0.03	0.00	0.00	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.97	0.00	14.67	10.14
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.10	0.00	0.14	0.14
95th-Percentile Queue Length [ft]	0.00	0.00	2.47	0.00	3.41	3.41
d_A, Approach Delay [s/veh]	0.00		0.85		10.28	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.89					
Intersection LOS	B					

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Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	All-way stop	Delay (sec / veh):	15.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.647

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	38	84	55	30	73	99	131	146	39	36	97	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
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]	48	105	69	38	91	124	164	183	49	45	121	50
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	12	26	17	10	23	31	41	46	12	11	30	13
Total Analysis Volume [veh/h]	48	105	69	38	91	124	164	183	49	45	121	50
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	578	596	612	585
Degree of Utilization, x	0.38	0.42	0.65	0.37

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.80	2.11	4.69	1.69
95th-Percentile Queue Length [ft]	44.93	52.75	117.29	42.31
Approach Delay [s/veh]	13.05	13.43	19.04	12.70
Approach LOS	B	B	C	B
Intersection Delay [s/veh]	15.25			
Intersection LOS	C			

Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	Signalized	Delay (sec / veh):	14.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.434

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	38	84	55	30	73	99	131	146	39	36	97	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
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	105	69	38	91	124	164	183	49	45	121	50
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	12	26	17	10	23	31	41	46	12	11	30	13
Total Analysis Volume [veh/h]	48	105	69	38	91	124	164	183	49	45	121	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]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	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	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	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	19	0	0	19	0	0	41	0	0	41	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	5	0	0	5	0	0	5	0	0	5	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

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Lane Group Calculations

Lane Group	C	C	C	C
C, Cycle Length [s]	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	19	19
g / C, Green / Cycle	0.55	0.55	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.14	0.15	0.28	0.14
s, saturation flow rate [veh/h]	1613	1633	1421	1590
c, Capacity [veh/h]	964	971	532	572
d1, Uniform Delay [s]	6.88	7.06	19.74	16.05
k, delay calibration	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.56	0.65	2.10	0.41
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	0.23	0.26	0.74	0.38
d, Delay for Lane Group [s/veh]	7.44	7.71	21.84	16.46
Lane Group LOS	A	A	C	B
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	1.37	1.47	5.17	2.11
50th-Percentile Queue Length [ft]	34.36	36.84	129.17	52.63
95th-Percentile Queue Length [veh]	2.47	2.65	8.89	3.79
95th-Percentile Queue Length [ft]	61.85	66.31	222.36	94.74

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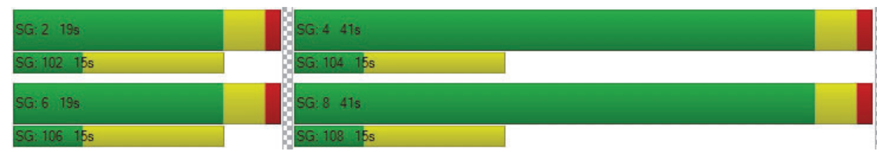
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.44	7.44	7.44	7.71	7.71	7.71	21.84	21.84	21.84	16.46	16.46	16.46
Movement LOS	A	A	A	A	A	A	C	C	C	B	B	B
d_A, Approach Delay [s/veh]	7.44			7.71			21.84			16.46		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	14.54											
Intersection LOS	B											
Intersection V/C	0.434											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	Roundabout	Delay (sec / veh):	8.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	38	84	55	30	73	99	131	146	39	36	97	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
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]	48	105	69	38	91	124	164	183	49	45	121	50
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	12	26	17	10	23	31	41	46	12	11	30	13
Total Analysis Volume [veh/h]	48	105	69	38	91	124	164	183	49	45	121	50
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	393			218			177			323		
Exiting Flow Rate [veh/h]	225			172			139			274		
Demand Flow Rate [veh/h]	48	105	69	38	91	124	164	183	49	45	121	50
Adjusted Demand Flow Rate [veh/h]	48	105	69	38	91	124	164	183	49	45	121	50

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1130.00	1130.00	1130.00	1130.00
B (coefficient)	0.00100	0.00100	0.00100	0.00100
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	227	259	404	221
Capacity of Entry and Bypass Lanes [veh/h]	764	909	947	818
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	749	891	928	802
X, volume / capacity	0.30	0.28	0.43	0.27

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.24	1.17	2.16	1.09
95th-Percentile Queue Length [ft]	31.06	29.33	54.10	27.25
Approach Delay [s/veh]	8.31	7.06	8.87	7.48
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.06			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 3: Durham-Dayton Hwy/Jones Ave

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):	0.018

Intersection Setup

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	7	13	13	218	173	18
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	1.25	1.25	1.25	1.25	1.25	1.25
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]	9	16	16	273	216	23
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	4	4	68	54	6
Total Analysis Volume [veh/h]	9	16	16	273	216	23
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	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.40	9.65	7.74	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.12	0.12	0.83	0.83	0.00	0.00
95th-Percentile Queue Length [ft]	2.93	2.93	20.73	20.73	0.00	0.00
d_A, Approach Delay [s/veh]	10.64		0.43		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.71					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Durham-Dayton Hwy/Stanford Ln

Control Type:	Two-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	11	8	200	25	10	180
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	1.25	1.25	1.25	1.25	1.25	1.25
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]	14	10	250	31	13	225
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	3	63	8	3	56
Total Analysis Volume [veh/h]	14	10	250	31	13	225
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	Yes		
Storage Area [veh]	1	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	0.03	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	12.14	9.77	0.00	0.00	7.84	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.08	0.08	0.00	0.00	0.68	0.68
95th-Percentile Queue Length [ft]	2.10	2.10	0.00	0.00	17.02	17.02
d_A, Approach Delay [s/veh]	11.15		0.00		0.43	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.68					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Durham-Dayton Hwy/Lott Rd

Control Type:	Two-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	╋			╋			╋			╋		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	9	7	2	8	7	34	39	92	10	1	106	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
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]	11	9	3	10	9	43	49	115	13	1	133	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	3	2	1	3	2	11	12	29	3	0	33	3
Total Analysis Volume [veh/h]	11	9	3	10	9	43	49	115	13	1	133	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.02	0.02	0.00	0.02	0.02	0.05	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.15	11.91	9.14	11.80	12.07	9.37	7.59	0.00	0.00	7.47	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.13	0.13	0.13	0.27	0.27	0.27	0.42	0.42	0.42	0.33	0.33	0.33
95th-Percentile Queue Length [ft]	3.19	3.19	3.19	6.64	6.64	6.64	10.49	10.49	10.49	8.20	8.20	8.20
d_A, Approach Delay [s/veh]	11.66			10.16			2.10			0.05		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.15											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 1: Midway/Jones Ave

Control Type:	Two-way stop	Delay (sec / veh):	13.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Midway		Midway		Jones Ave	
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	1	0	0	0
Pocket Length [ft]	100.00	100.00	75.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Midway		Midway		Jones Ave	
Base Volume Input [veh/h]	326	1	10	210	1	15
Base Volume Adjustment Factor	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120
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]	7	0	1	2	0	1
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]	370	1	12	236	1	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	0	3	59	0	5
Total Analysis Volume [veh/h]	370	1	12	236	1	18
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	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	8.06	0.00	13.33	10.49
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.03	0.00	0.09	0.09
95th-Percentile Queue Length [ft]	0.00	0.00	0.77	0.00	2.23	2.23
d_A, Approach Delay [s/veh]	0.00		0.39		10.64	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.47					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	All-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.585

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	51	127	30	25	66	127	141	118	39	25	231	33
Base Volume Adjustment Factor	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120
Heavy Vehicles Percentage [%]	2.00	2.00	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	1	2	0	0	0	3	0	3	8	7
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	57	141	34	30	73	141	157	134	43	31	265	44
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	14	35	9	8	18	35	39	34	11	8	66	11
Total Analysis Volume [veh/h]	57	141	34	30	73	141	157	134	43	31	265	44
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	543	568	574	581
Degree of Utilization, x	0.43	0.43	0.58	0.59

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.12	2.14	3.72	3.76
95th-Percentile Queue Length [ft]	53.01	53.57	93.05	94.06
Approach Delay [s/veh]	14.47	14.01	17.66	17.56
Approach LOS	B	B	C	C
Intersection Delay [s/veh]	16.21			
Intersection LOS	C			

Intersection Level Of Service Report
Intersection 3: Durham-Dayton Hwy/Jones Ave

Control Type:	Two-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	7	18	8	151	265	11
Base Volume Adjustment Factor	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120
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]	1	0	0	6	18	1
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]	9	20	9	174	313	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	5	2	44	78	3
Total Analysis Volume [veh/h]	9	20	9	174	313	13
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	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.21	10.26	7.94	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.14	0.14	0.52	0.52	0.00	0.00
95th-Percentile Queue Length [ft]	3.54	3.54	13.01	13.01	0.00	0.00
d_A, Approach Delay [s/veh]	10.86		0.39		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.72					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Durham-Dayton Hwy/Stanford Ln

Control Type:	Two-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.064

Intersection Setup

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	32	9	154	4	2	244
Base Volume Adjustment Factor	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120
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	0	6	0	0	2
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]	36	10	177	4	2	273
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	3	44	1	1	68
Total Analysis Volume [veh/h]	36	10	177	4	2	273
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	Yes		
Storage Area [veh]	1	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	0.06	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.76	9.51	0.00	0.00	7.59	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.21	0.21	0.00	0.00	0.73	0.73
95th-Percentile Queue Length [ft]	5.13	5.13	0.00	0.00	18.33	18.33
d_A, Approach Delay [s/veh]	11.27		0.00		0.06	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.06					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Durham-Dayton Hwy/Lott Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	5	15	2	6	5	21	18	69	4	1	61	8
Base Volume Adjustment Factor	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120	1.1120
Heavy Vehicles Percentage [%]	2.00	2.00	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	1	5	0	0	2	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]	6	17	2	7	6	23	21	82	4	1	70	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	2	4	1	2	2	6	5	21	1	0	18	2
Total Analysis Volume [veh/h]	6	17	2	7	6	23	21	82	4	1	70	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.01	0.03	0.00	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.27	10.49	8.88	10.18	10.47	8.83	7.40	0.00	0.00	7.39	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.11	0.11	0.11	0.13	0.13	0.13	0.23	0.23	0.23	0.17	0.17	0.17
95th-Percentile Queue Length [ft]	2.76	2.76	2.76	3.27	3.27	3.27	5.68	5.68	5.68	4.19	4.19	4.19
d_A, Approach Delay [s/veh]	10.31			9.36			1.45			0.09		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	3.05											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 1: Midway/Jones Ave

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Midway		Midway		Jones Ave	
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	1	0	0	0
Pocket Length [ft]	100.00	100.00	75.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Midway		Midway		Jones Ave	
Base Volume Input [veh/h]	245	1	32	268	1	24
Base Volume Adjustment Factor	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820
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	0	2	7	0	1
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]	269	1	37	297	1	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	0	9	74	0	7
Total Analysis Volume [veh/h]	269	1	37	297	1	27
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	0.03	0.00	0.00	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.87	0.00	13.62	9.87
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.09	0.00	0.12	0.12
95th-Percentile Queue Length [ft]	0.00	0.00	2.21	0.00	2.91	2.91
d_A, Approach Delay [s/veh]	0.00		0.87		10.00	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.90					
Intersection LOS	B					

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Version 5.00-00

Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	All-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.541

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	╋			╋			╋			╋		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	38	84	55	30	73	99	131	146	39	36	97	40
Base Volume Adjustment Factor	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820
Heavy Vehicles Percentage [%]	2.00	2.00	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	3	7	0	0	0	10	0	2	6	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]	41	91	63	39	79	107	142	168	42	41	111	47
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	10	23	16	10	20	27	36	42	11	10	28	12
Total Analysis Volume [veh/h]	41	91	63	39	79	107	142	168	42	41	111	47
Pedestrian Volume [ped/h]	0			0			0			0		

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Version 5.00-00

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	622	639	652	633
Degree of Utilization, x	0.31	0.35	0.54	0.31

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.34	1.58	3.25	1.34
95th-Percentile Queue Length [ft]	33.40	39.54	81.18	33.60
Approach Delay [s/veh]	11.40	11.66	14.84	11.28
Approach LOS	B	B	B	B
Intersection Delay [s/veh]	12.68			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 3: Durham-Dayton Hwy/Jones Ave

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	7	13	13	218	173	18
Base Volume Adjustment Factor	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820
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]	2	0	0	20	12	1
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]	10	14	14	256	199	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	4	64	50	5
Total Analysis Volume [veh/h]	10	14	14	256	199	20
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	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.01	9.53	7.69	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.11	0.11	0.75	0.75	0.00	0.00
95th-Percentile Queue Length [ft]	2.78	2.78	18.64	18.64	0.00	0.00
d_A, Approach Delay [s/veh]	10.56		0.40		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Durham-Dayton Hwy/Stanford Ln

Control Type:	Two-way stop	Delay (sec / veh):	11.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	11	8	200	25	10	180
Base Volume Adjustment Factor	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820
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	0	4	0	0	7
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]	12	9	220	27	11	202
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	2	55	7	3	51
Total Analysis Volume [veh/h]	12	9	220	27	11	202
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	Yes		
Storage Area [veh]	1	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	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	11.56	9.55	0.00	0.00	7.75	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.07	0.07	0.00	0.00	0.58	0.58
95th-Percentile Queue Length [ft]	1.65	1.65	0.00	0.00	14.39	14.39
d_A, Approach Delay [s/veh]	10.70		0.00		0.40	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.64					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Durham-Dayton Hwy/Lott Rd

Control Type:	Two-way stop	Delay (sec / veh):	11.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	╋			╋			╋			╋		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	9	7	2	8	7	34	39	92	10	1	106	8
Base Volume Adjustment Factor	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820	1.0820
Heavy Vehicles Percentage [%]	2.00	2.00	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	1	1	3	0	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
Total Hourly Volume [veh/h]	10	8	2	9	8	38	43	103	11	1	121	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	3	2	1	2	2	10	11	26	3	0	30	2
Total Analysis Volume [veh/h]	10	8	2	9	8	38	43	103	11	1	121	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.02	0.01	0.00	0.01	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.60	11.50	9.02	11.32	11.64	9.24	7.55	0.00	0.00	7.44	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.10	0.10	0.10	0.23	0.23	0.23	0.36	0.36	0.36	0.29	0.29	0.29
95th-Percentile Queue Length [ft]	2.62	2.62	2.62	5.63	5.63	5.63	9.05	9.05	9.05	7.30	7.30	7.30
d_A, Approach Delay [s/veh]	11.30			9.93			2.07			0.06		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	3.04											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 1: Midway/Jones Ave

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Midway		Midway		Jones Ave	
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	1	0	0	0
Pocket Length [ft]	100.00	100.00	75.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Midway		Midway		Jones Ave	
Base Volume Input [veh/h]	326	1	10	210	1	15
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	1.34	1.34	1.34	1.34	1.34	1.34
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	1	2	0	1
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]	444	1	14	283	1	21
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	111	0	4	71	0	5
Total Analysis Volume [veh/h]	444	1	14	283	1	21
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	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	8.27	0.00	14.92	11.10
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.04	0.00	0.11	0.11
95th-Percentile Queue Length [ft]	0.00	0.00	0.95	0.00	2.87	2.87
d_A, Approach Delay [s/veh]	0.00		0.39		11.27	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.48					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	All-way stop	Delay (sec / veh):	33.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.851

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	51	127	30	25	66	127	141	118	39	25	231	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	2	0	0	0	3	0	3	8	7
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	68	170	41	36	88	170	189	161	52	37	318	51
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	17	43	10	9	22	43	47	40	13	9	80	13
Total Analysis Volume [veh/h]	68	170	41	36	88	170	189	161	52	37	318	51
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	443	461	472	477
Degree of Utilization, x	0.63	0.64	0.85	0.85

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	4.23	4.38	8.64	8.67
95th-Percentile Queue Length [ft]	105.82	109.38	216.05	216.70
Approach Delay [s/veh]	23.98	23.61	40.67	40.35
Approach LOS	C	C	E	E
Intersection Delay [s/veh]	33.57			
Intersection LOS	D			

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Version 5.00-00

Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	Signalized	Delay (sec / veh):	14.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.540

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	51	127	30	25	66	127	141	118	39	25	231	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	2	0	0	0	3	0	3	8	7
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	68	170	41	36	88	170	189	161	52	37	318	51
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	17	43	10	9	22	43	47	40	13	9	80	13
Total Analysis Volume [veh/h]	68	170	41	36	88	170	189	161	52	37	318	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		

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Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	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	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	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	19	0	0	19	0	0	41	0	0	41	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	5	0	0	5	0	0	5	0	0	5	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

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Lane Group Calculations

Lane Group	C	C	C	C
C, Cycle Length [s]	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	24	24
g / C, Green / Cycle	0.47	0.47	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.17	0.18	0.36	0.23
s, saturation flow rate [veh/h]	1635	1631	1119	1754
c, Capacity [veh/h]	839	829	535	766
d1, Uniform Delay [s]	10.06	10.31	17.51	13.93
k, delay calibration	0.50	0.50	0.15	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.07	1.19	2.96	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	0.33	0.35	0.75	0.53
d, Delay for Lane Group [s/veh]	11.13	11.49	20.47	14.50
Lane Group LOS	B	B	C	B
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	2.30	2.33	5.26	3.72
50th-Percentile Queue Length [ft]	57.55	58.24	131.59	93.04
95th-Percentile Queue Length [veh]	4.14	4.19	9.03	6.70
95th-Percentile Queue Length [ft]	103.59	104.83	225.66	167.47

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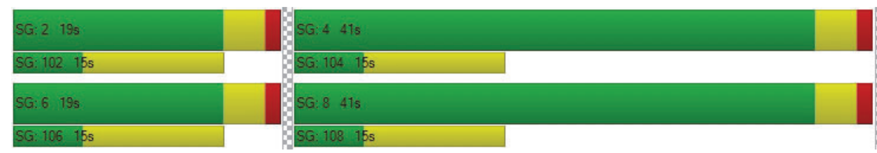
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.13	11.13	11.13	11.49	11.49	11.49	20.47	20.47	20.47	14.50	14.50	14.50
Movement LOS	B	B	B	B	B	B	C	C	C	B	B	B
d_A, Approach Delay [s/veh]	11.13			11.49			20.47			14.50		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	14.92											
Intersection LOS	B											
Intersection V/C	0.540											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	Roundabout	Delay (sec / veh):	10.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	51	127	30	25	66	127	141	118	39	25	231	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	1	2	0	0	0	3	0	3	8	7
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	68	170	41	36	88	170	189	161	52	37	318	51
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	17	43	10	9	22	43	47	40	13	9	80	13
Total Analysis Volume [veh/h]	68	170	41	36	88	170	189	161	52	37	318	51
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	394			431			164			436		
Exiting Flow Rate [veh/h]	201			394			128			366		
Demand Flow Rate [veh/h]	68	170	41	36	88	170	189	161	52	37	318	51
Adjusted Demand Flow Rate [veh/h]	68	170	41	36	88	170	189	161	52	37	318	51

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1130.00	1130.00	1130.00	1130.00
B (coefficient)	0.00100	0.00100	0.00100	0.00100
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	285	300	411	415
Capacity of Entry and Bypass Lanes [veh/h]	763	735	959	732
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	748	720	941	717
X, volume / capacity	0.37	0.41	0.43	0.57

Movement, Approach, & Intersection Results

Lane LOS	A	B	A	B
95th-Percentile Queue Length [veh]	1.74	2.00	2.17	3.59
95th-Percentile Queue Length [ft]	43.40	49.93	54.28	89.72
Approach Delay [s/veh]	9.53	10.46	8.80	14.21
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	10.89			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 3: Durham-Dayton Hwy/Jones Ave

Control Type:	Two-way stop	Delay (sec / veh):	13.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	7	18	8	151	265	11
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	1.34	1.34	1.34	1.34	1.34	1.34
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	6	18	1
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]	10	24	11	208	373	16
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	6	3	52	93	4
Total Analysis Volume [veh/h]	10	24	11	208	373	16
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	0.04	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.34	10.78	8.11	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.18	0.18	0.69	0.69	0.00	0.00
95th-Percentile Queue Length [ft]	4.62	4.62	17.18	17.18	0.00	0.00
d_A, Approach Delay [s/veh]	11.54		0.41		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.75					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Durham-Dayton Hwy/Stanford Ln

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):	0.087

Intersection Setup

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	32	9	154	4	2	244
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	1.34	1.34	1.34	1.34	1.34	1.34
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	0	0	2
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	12	212	5	3	329
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	3	53	1	1	82
Total Analysis Volume [veh/h]	43	12	212	5	3	329
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	Yes		
Storage Area [veh]	1	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	0.09	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.81	9.90	0.00	0.00	7.67	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.28	0.28	0.00	0.00	0.97	0.97
95th-Percentile Queue Length [ft]	7.11	7.11	0.00	0.00	24.21	24.21
d_A, Approach Delay [s/veh]	12.18		0.00		0.07	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.15					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Durham-Dayton Hwy/Lott Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.031

Intersection Setup

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	5	15	2	6	5	21	18	69	4	1	61	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
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	1	5	0	0	2	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]	7	20	3	8	7	28	25	97	5	1	84	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	2	5	1	2	2	7	6	24	1	0	21	3
Total Analysis Volume [veh/h]	7	20	3	8	7	28	25	97	5	1	84	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.01	0.03	0.00	0.01	0.01	0.03	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.71	10.84	9.02	10.59	10.81	8.95	7.44	0.00	0.00	7.42	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.14	0.14	0.14	0.16	0.16	0.16	0.28	0.28	0.28	0.21	0.21	0.21
95th-Percentile Queue Length [ft]	3.51	3.51	3.51	4.08	4.08	4.08	6.93	6.93	6.93	5.16	5.16	5.16
d_A, Approach Delay [s/veh]	10.63			9.56			1.47			0.08		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	3.12											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 1: Midway/Jones Ave

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Midway		Midway		Jones Ave	
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	1	0	0	0
Pocket Length [ft]	100.00	100.00	75.00	100.00	100.00	100.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Midway		Midway		Jones Ave	
Base Volume Input [veh/h]	245	1	32	268	1	24
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	1.25	1.25	1.25	1.25	1.25	1.25
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	2	7	0	1
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]	310	1	42	342	1	31
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	0	11	86	0	8
Total Analysis Volume [veh/h]	310	1	42	342	1	31
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	0.03	0.00	0.00	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.98	0.00	14.89	10.17
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.10	0.00	0.14	0.14
95th-Percentile Queue Length [ft]	0.00	0.00	2.61	0.00	3.54	3.54
d_A, Approach Delay [s/veh]	0.00		0.87		10.32	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.92					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	All-way stop	Delay (sec / veh):	16.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.675

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	38	84	55	30	73	99	131	146	39	36	97	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	7	0	0	0	10	0	2	6	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]	48	105	72	45	91	124	164	193	49	47	127	54
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	12	26	18	11	23	31	41	48	12	12	32	14
Total Analysis Volume [veh/h]	48	105	72	45	91	124	164	193	49	47	127	54
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	566	583	601	575
Degree of Utilization, x	0.40	0.45	0.68	0.40

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.90	2.29	5.15	1.89
95th-Percentile Queue Length [ft]	47.38	57.22	128.86	47.20
Approach Delay [s/veh]	13.49	14.07	20.54	13.31
Approach LOS	B	B	C	B
Intersection Delay [s/veh]	16.15			
Intersection LOS	C			

Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	Signalized	Delay (sec / veh):	14.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	38	84	55	30	73	99	131	146	39	36	97	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	7	0	0	0	10	0	2	6	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]	48	105	72	45	91	124	164	193	49	47	127	54
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	12	26	18	11	23	31	41	48	12	12	32	14
Total Analysis Volume [veh/h]	48	105	72	45	91	124	164	193	49	47	127	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]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	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	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	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	19	0	0	19	0	0	41	0	0	41	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	5	0	0	5	0	0	5	0	0	5	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	C	C
C, Cycle Length [s]	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	19	19
g / C, Green / Cycle	0.54	0.54	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.14	0.16	0.29	0.14
s, saturation flow rate [veh/h]	1614	1618	1419	1582
c, Capacity [veh/h]	951	951	541	582
d1, Uniform Delay [s]	7.14	7.34	19.49	15.81
k, delay calibration	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.58	0.71	2.11	0.43
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

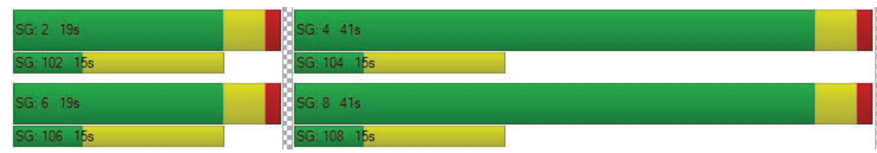
X, volume / capacity	0.24	0.27	0.75	0.39
d, Delay for Lane Group [s/veh]	7.73	8.05	21.61	16.24
Lane Group LOS	A	A	C	B
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	1.43	1.57	5.28	2.21
50th-Percentile Queue Length [ft]	35.80	39.16	132.00	55.14
95th-Percentile Queue Length [veh]	2.58	2.82	9.05	3.97
95th-Percentile Queue Length [ft]	64.45	70.49	226.21	99.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.73	7.73	7.73	8.05	8.05	8.05	21.61	21.61	21.61	16.24	16.24	16.24
Movement LOS	A	A	A	A	A	A	C	C	C	B	B	B
d_A, Approach Delay [s/veh]	7.73			8.05			21.61			16.24		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	14.57											
Intersection LOS	B											
Intersection V/C	0.447											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report
Intersection 2: Durham-Dayton Hwy/Midway

Control Type:	Roundabout	Delay (sec / veh):	8.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			35.00			25.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Midway			Midway			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	38	84	55	30	73	99	131	146	39	36	97	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	7	0	0	0	10	0	2	6	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]	48	105	72	45	91	124	164	193	49	47	127	54
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	12	26	18	11	23	31	41	48	12	12	32	14
Total Analysis Volume [veh/h]	48	105	72	45	91	124	164	193	49	47	127	54
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	410			226			187			323		
Exiting Flow Rate [veh/h]	243			179			141			274		
Demand Flow Rate [veh/h]	48	105	72	45	91	124	164	193	49	47	127	54
Adjusted Demand Flow Rate [veh/h]	48	105	72	45	91	124	164	193	49	47	127	54

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1130.00	1130.00	1130.00	1130.00
B (coefficient)	0.00100	0.00100	0.00100	0.00100
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	230	266	415	233
Capacity of Entry and Bypass Lanes [veh/h]	750	902	938	818
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	736	884	920	802
X, volume / capacity	0.31	0.29	0.44	0.28

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.30	1.23	2.29	1.17
95th-Percentile Queue Length [ft]	32.42	30.80	57.29	29.32
Approach Delay [s/veh]	8.57	7.24	9.19	7.69
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.30			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 3: Durham-Dayton Hwy/Jones Ave

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):	0.023

Intersection Setup

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Jones Ave		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	7	13	13	218	173	18
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	1.25	1.25	1.25	1.25	1.25	1.25
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	20	12	1
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]	11	16	16	293	228	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	4	73	57	6
Total Analysis Volume [veh/h]	11	16	16	293	228	24
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	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.77	9.76	7.77	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.13	0.13	0.92	0.92	0.00	0.00
95th-Percentile Queue Length [ft]	3.36	3.36	22.91	22.91	0.00	0.00
d_A, Approach Delay [s/veh]	10.99		0.40		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.72					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Durham-Dayton Hwy/Stanford Ln

Control Type:	Two-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
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]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Stanford Ln		Durham-Dayton Hwy		Durham-Dayton Hwy	
Base Volume Input [veh/h]	11	8	200	25	10	180
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	1.25	1.25	1.25	1.25	1.25	1.25
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	0	0	7
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]	14	10	254	31	13	232
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	3	64	8	3	58
Total Analysis Volume [veh/h]	14	10	254	31	13	232
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	Yes		
Storage Area [veh]	1	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	0.03	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	12.24	9.80	0.00	0.00	7.85	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.09	0.09	0.00	0.00	0.71	0.71
95th-Percentile Queue Length [ft]	2.14	2.14	0.00	0.00	17.70	17.70
d_A, Approach Delay [s/veh]	11.23		0.00		0.42	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.67					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Durham-Dayton Hwy/Lott Rd

Control Type:	Two-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Lott Rd			Lott Rd			Durham-Dayton Hwy			Durham-Dayton Hwy		
Base Volume Input [veh/h]	9	7	2	8	7	34	39	92	10	1	106	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
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	1	1	3	0	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
Total Hourly Volume [veh/h]	11	9	3	10	9	44	50	118	13	1	139	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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]	3	2	1	3	2	11	13	30	3	0	35	3
Total Analysis Volume [veh/h]	11	9	3	10	9	44	50	118	13	1	139	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.02	0.02	0.00	0.02	0.02	0.05	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.30	12.02	9.17	11.92	12.19	9.42	7.60	0.00	0.00	7.48	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.13	0.13	0.13	0.27	0.27	0.27	0.43	0.43	0.43	0.34	0.34	0.34
95th-Percentile Queue Length [ft]	3.24	3.24	3.24	6.82	6.82	6.82	10.82	10.82	10.82	8.61	8.61	8.61
d_A, Approach Delay [s/veh]	11.78			10.21			2.10			0.05		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.12											
Intersection LOS	B											

Appendix D

Turn Lane Warrants

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Durham-Dayton Highway/Street A
Study Scenario: AM Future + Project

Direction of Analysis Street: East/West

Cross Street Intersects: From the South

Foothill Blvd

Eastbound Volumes (veh/hr)

Through Volume = 154
Right Turn Volume = 7

Foothill Blvd

Westbound Volumes (veh/hr)

370 = Through Volume
2 = Left Turn Volume

Eastbound Speed Limit: 35 mph
Eastbound Configuration: 2 Lanes - Undivided

Project Driveway

Westbound Speed Limit: 35 mph
Westbound Configuration: 2 Lanes - Undivided

Eastbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	997.6
Advancing Volume	Va =	161
If AV<Va then warrant is met		No

Right Turn Lane Warranted: **NO**

Eastbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

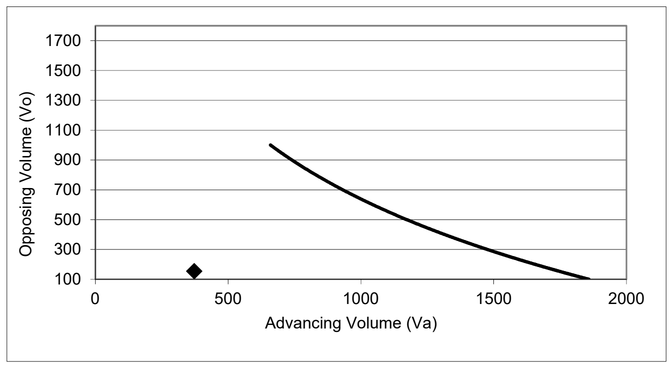
Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	161
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Westbound Left Turn Lane Warrants

Percentage Left Turns	%lt	0.5 %
Advancing Volume Threshold	AV	1747 veh/hr

If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 35 mph
Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Durham-Dayton Highway/Street A
Study Scenario: PM Future + Project

Direction of Analysis Street: East/West

Cross Street Intersects: From the South

Foothill Blvd

Eastbound Volumes (veh/hr)

Through Volume = 250
Right Turn Volume = 22

Foothill Blvd

Westbound Volumes (veh/hr)

239 = Through Volume
7 = Left Turn Volume

Eastbound Speed Limit: 35 mph
Eastbound Configuration: 2 Lanes - Undivided

Project Driveway

Westbound Speed Limit: 35 mph
Westbound Configuration: 2 Lanes - Undivided

Eastbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	885.1
Advancing Volume	Va =	272
If AV<Va then warrant is met		No

Right Turn Lane Warranted: **NO**

Eastbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for taper

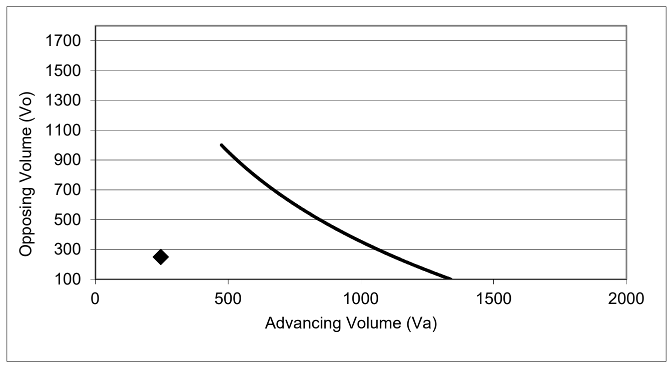
Advancing Volume Threshold	AV =	680
Advancing Volume	Va =	272
If AV<Va then warrant is met		No

Right Turn Taper Warranted: **NO**

Westbound Left Turn Lane Warrants

Percentage Left Turns	%lt	2.8 %
Advancing Volume Threshold	AV	1126 veh/hr

If AV<Va then warrant is met



◆ Study Intersection
—— Two lane roadway warrant threshold for: 35 mph
Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.