

Ashby Road Cannabis Campus Traffic Impact Study

City of Shasta Lake, California

(PLNP2017-00352)

Prepared for:

City of Shasta Lake, and

Chimienti Law Firm P.C.

Prepared By



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July 2020

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T. KEAR

TRANSPORTATION PLANNING
& MANAGEMENT, INC.

Memorandum

TO: File

FROM: Tom Kear, PhD, PE

Date: July 27, 2020

RE: Response to comments on July 2019 Ashby Road Cannabis Campus TIS, and revision.

This memorandum details responses to the GHD September 4, 2019 comments on the traffic impact study (TIS) for the Ashby Road Cannabis Campus project (The Project). The original comments are listed, followed by a description of changes made to the study and/or explanation in response to the comment. Additionally, comment 37 from the City of Shasta Lake April 28, 2020 is addressed.

Responses follow the numbering convention employed by GHD, with responses numbered sequentially from one, for each of seven categories (Project Description, Project Trip Generation, Data Collection, Macroscopic Intersection Analysis, Traffic Forecasting, Project Sight Distance, Impacts and Mitigations).

GHD Comments on Project Description

GHD Comment 1:

“The Ashby Road Cannabis Campus Traffic Impact Study (referenced to as “TIS” throughout this peer review) states “As proposed, the project includes 348,425 sqft of manufacturing space for cannabis products, 11,280 sqft of warehousing and distribution, and 60,480 sqft of indoor “mixed light” cannabis growing space.”

The specific cannabis uses are then listed for the three parcels:

Parcel #006-040-007:	29,625 sqft manufacturing/distribution;
Parcel #066-020-056:	40,320 sqft. cultivation/warehouse;
Parcel #006-020-057:	<u>50,240 sqft</u> cultivation/manufacturing.
Total sqft:	120,185 sqft”

The total square feet of proposed project uses amounts to 120,185 square feet for all three parcels. The 120,185 square feet of uses listed for these three parcels should be reconciled with the 384,425 square feet of manufacturing space listed for cannabis products in the project description paragraph.

TKTPM Response:

Square footage listed in the TIS project description was a typo and has been corrected.

GHD Comments on Project Trip Generation

GHD Comment 1:

“Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, (2017), for the manufacturing, warehousing, and distribution uses. The 59,705 sqft of building space for these uses was classified at ITE land use #110 “light industrial” and converted to employment at a rate of 650 sqft per employee.”

Substantiate the use of converting the 59,705 square feet of manufacturing, warehousing, and distribution uses to employment based on 650 square feet per employee. In absence of substantiation, the ITE light industrial rate should be based on square feet of building and/or acres.

TKTPM Response:

ITE does not have Cannabis specific trip generation data. Light industrial trip generation rates are the best available land use category for Cannabis processing trip generation. However, the space may be used in a flexible manner and could not be used at optimal efficiency if it were reconfigured from cannabis production to other light industrial applications, making employee-based trip rates more practical than trip rates based on square footage.

The developer-estimated employment of 22 employees appeared unrealistically low should the space ever be reconfigured. To be conservative, potential employment was estimated using the underlying assumptions utilized by the SACSIM and ShastaSim travel demand models of 650 square feet per employee for industrial land uses. The resulting estimate of 92 employees is more than 4 times the developer’s estimate for both the processing and cultivation uses on the project site. The resulting project trip generation is conservatively high and ensures that any potential project impact on traffic is identified.

No Changes were made to the TIS.

GHD Comment 2:

“A cannabis cultivation trip generation rate from grey literature of 1.64 daily trips per 1,000 sqft, with 10% of traffic occurring during the AM and PM peak hours, applied to the 60,480 sqft of cannabis production.”

Substantiate the use of using one (1) trip generation source for proposed cannabis uses based on draft report. Using one source is not recommended by the ITE.

TKTPM Response:

As cited on page 8 of the TIS, these estimates for cultivation related trip generation came from the ERA Economic LLC study used for both statewide and numerous county-level environmental documents throughout California for commercial cannabis cultivation and manufacturing regulations and are the best available for the cultivation portion of the Ashby Road Cannabis project. ITE trip generation rates for cultivation are not available. Because other data do not exist and the state of California used these trip generation rates for the state's CEQA analysis of legalizing cannabis cultivation, these rates are the best available for the Ashby Road Cannabis Campus TIS.

As noted in the previous comment. The TIS assumes more than four times the employment proposed by the applicant, this results in a conservatively high trip generation rate estimate and ensures that all potential traffic impacts are identified by the TIS.

No changes were made to the TIS.

GHD Comments on Data Collection

GHD Comment 1:

"To adjust Ashby Rd./Shasta Dam Blvd., and Ashby Rd./Pine Grove Ave. for school traffic, the difference in approach and departure volumes between the two Ashby Rd./La Mesa Ave. counts was added to the approach and departure volumes at intersections counted on June 10th."

The dates listed for intersection turning movement counts in the TIS are June 4, 2019 and June 20, 2019. Please correct the count dates listed with the text description date. The Central Valley High School on-line calendar (http://cvhs.gwusd.org/our_school/calendar) shows June 4th as "Senior Checkout" day and June 5th as "Last Day of School". If base-line counts were conducted on June 4th the data should not be considered representative of typical school operations.

Substantiate the approach to data collection and methods to derive the base traffic volumes.

TKTPM Response:

The correct count data are 6/4/2019 and 6/13/2019. The TIS text has been updated accordingly. Baseline counts were conducted on the last day of school 6/4/2019 for intersections adjacent to the school, and, at all intersections on 6/13/2019 when school was no longer in session, and additional resources were available for the counts. The difference between the 6/4 and 6/13 counts was used to identify school traffic, which was then added to the remaining study intersections. A written protocol for the counts was sent to, and approved by, City of Shasta Lake staff prior to collection of the traffic count data.

Subsequently the City obtained a December 19, 2018 count for the Ashby Rd/Pine Grove Ave intersection from a neighboring study for the “Windsor Estates 3 Project.” That count had lower volumes than the “adjusted” count that TKTPM originally used. This validates the conservative nature of the multiple counts and adjustment process utilized by TKTPM.

At the request of the City, the TIS has been updated to utilize the December 19, 2018 count for the Ashby Rd/Pine Grove Ave intersection.

GHD Comments on Macroscopic Intersection Analysis

GHD Comment 1:

“Control delay and level-of-service for study intersections were calculated using PTV Vistro traffic analysis software (Version 7).”

The intersection LOS calculation conducted for the Ashby Road/Pine Grove Road intersection during the AM peak hour was compared to Synchro-Simtraffic traffic analysis software (Version 10) output assuming HCM 6th Edition methodologies for two-way-control-stop intersections. Using the same volumes, peak hour factors, truck traffic, and pedestrian volumes, Synchro-Simtraffic exactly matched the TIS’s AM peak hour result of LOS D (31.6 seconds of delay) for the southbound left-turn movement from Ashby Road onto Pine Grove Road. The spot-check of the analysis supports the PTV Vistro analysis.

TKTPM Response:

Comment noted. **No changes have been made to the methodology. However, intersection #5 (Ashby Rd/Pine Grove Ave) was updated to reflect a traffic count from the “Windsor Estates 3 Project” TIS which the City provided for use in this TIS.**

GHD Comments on Traffic Forecasting

GHD Comment 1:

Traffic forecasts utilize data from the ShastaSim 1.2 regional travel demand model maintained by the Shasta Regional Transportation Agency (SRTA). The default loaded model networks for 2015 and 2040 were used to represent ‘modeled’ traffic in the project vicinity by interpolation to 2019. Site specific calibration factors were estimated based on the traffic counts and 2019 interpolated model traffic, and applied to the 2040 model volumes.”

There is concern that the SRTA’s transportation model may not include local proposed developments with active applications for manufacturing development projects. For example, applications for development in the City’s Industrial Park just south of Pine Grove Avenue and west of Ashby Road. There is no documentation in the TIS that the City of Shasta Lake’s Planning/Engineering staff was contacted for potential development projects in the area. City of Shasta Lake staff should be contacted for local development projects in

the area and these projects should be added to and/or compared to model output to ensure future traffic growth in the study area is included in Year 2040 projections.

TKTPM Response:

Scope of work and methodology, including traffic forecasting, was discussed with and approved by City staff on May 13th and May 20th, 2019.

Cumulative growth exceeding that assumed by the ShastaSim model that was approved at the time of the analysis was considered to the satisfaction of City staff and did not include additional growth in the City's industrial park. Projects creating cumulative growth beyond what is assumed by ShastaSim's assumed "market rate" absorption of General Plan land uses consider that growth as part of their own TIS. As used, the ShastaSim model assumptions result in a nearly 400% increase in Ashby Road traffic to and from the industrial park by 2040. That growth was incorporated into the TIS report.

No changes have been made to the TIS report, Apart from the Intersection 5 (Ashby Rd/Pine Grove Ave) intersection where the cumulative forecast is now based on the "Windsor Estate 3 Project" TIS, which was provided by the City.

GHD Comments on Project Sight Distance

GHD Comment 1:

"All uses under the proposed project would be accessed from Ashby Road via a single driveway through APN 006-020-057. Additional emergency access is available through El Cajon Avenue driveways to APN 006-040-007."

Based on the approximate project driveway location via parcel 006-020-057 vehicle sight distance has been evaluated. The proposed project driveway would be located in a speed limit transition area on Ashby Road where the vehicle speed limit increases from 35 mph to 45 mph (north to south direction) and vice-versa south to north. The required vehicle visibility or "corner sight distance" is a function of travel speeds on Ashby Road. Caltrans and AASHTO design guidelines indicate that for appropriate corner sight distance, "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 in the right lane of the main highway". Caltrans and AASHTO design guidelines also indicate that the minimum corner sight distance "shall be equal to the stopping sight distance" where possible.

Caltrans' design standards indicate that these vehicle speeds require a stopping sight distance of 360 feet (corner sight distance of 500 feet) both north and south of the proposed project driveway measured along the travel lanes. OF1 Based on field observation by GHD, sight distance both north and south of the proposed project driveway is in excess of 500 feet. Therefore, the sight distance recommendations would be met for the speed limit and observed vehicle speeds.

TKTPM Response:

Comment noted. **No changes have been made to the TIS report.**

GHD Comments on Impacts and Mitigations

GHD Comment 1:

“Impact 1: Currently intersection #5 Ashby Rd/Pine Grove Ave are estimated to operate at level- of-service “D” in the AM peak hour. Project traffic is anticipated to worsen the level-of-service to “E” and increase delay by 6.2 seconds. This is a potentially significant impact.

Mitigation 1: Convert the intersection from side-street-stop-control to all-way-stop-control. With this mitigation the intersection is anticipated to operate at level-of-service “B” during the AM peak hour with 12.2 seconds of delay under 2019 With Project conditions.”

The recommendation of all-way-stop-control (AWSC) at the Ashby Road/Pine Grove Road intersection needs further justification. In consideration of the high-speed approaches and the turn-lanes on all approaches, either a traffic signal or modern roundabout is considered a more appropriate solution.

TKTPM Response:

The City has requested that the Ashby Rd/Pine Grove Avenue intersection be analyzed based on a December 19, 2018 count provided by the City. The TIS has been revised accordingly. There is no longer a Project impact at this location.

Other Revisions

Two additional revisions were also made:

1. Added language regarding acceleration and deceleration lanes at Project driveway in a new section 10.1 “Project Access Review” as follows:

“Based on the approximate Project driveway location via parcel 006-020-057 vehicle sight distance has been evaluated. The proposed Project driveway would be located in a speed limit transition area on Ashby Road where the vehicle speed limit increases from 35 mph to 45 mph (north to south direction) and vice-versa south to north. The required vehicle visibility or “corner sight distance” is a function of travel speeds on Ashby Road. Caltrans and AASHTO design guidelines indicate that for appropriate corner sight distance, “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 in the right lane of the main highway”. Caltrans and AASHTO design guidelines also indicate that the minimum corner sight distance “shall be equal to the stopping sight distance” where possible.

Caltrans’ design standards indicate that these vehicle speeds require a stopping sight distance of 360 feet (corner sight distance of 500 feet) both north and south of the

proposed project driveway measured along the travel lanes. Based on field observation by GHD, sight distance both north and south of the proposed project driveway is in excess of 500 feet. Therefore, the sight distance recommendations would be met for the speed limit and observed vehicle speeds.

Because adequate site distance exists at the Project driveway, and there is relatively low peak hour driveway volume, acceleration and deceleration lanes are not necessary to maintain safe and acceptable traffic operations at the Project driveway.

2. Added section 10.2 addressing VMT impacts under SB743. The project TAZ was found to have VMT per service population more than 15% lower than the Shasta County average VMT per service population. The project has a less than significant impact on VMT.

Comments provided on the July 2019 TIS report were appreciated and constructive in nature. TKTPM appreciates the opportunity to refine the TIS accordingly. Please contact Dr. Kear at tkear@tkearinc.com or (916) 340-4811 with any further questions or comments.

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REVISION HISTORY

Description	Date	Notes
Original	July 17, 2019	Original TIS provided to Chimienti Law Firm P.C.
Revision 1	July 27, 2020	Response to City and peer review comments, added VMT analysis, accounted for revised traffic count at Ashby Rd/Pine Grove Ave.

EXECUTIVE SUMMARY

This report presents the results of the traffic impact study undertaken for the Ashby Road Cannabis Campus project located to the west of the 2100-2200 block of Ashby Road in the City of Shasta Lake, California (**Figure ES-1**).

Project Description

The Project site includes APN #'s 006-020-056, 006-020-057, and 006-040-007 near Ashby Road in the City of Shasta Lake (**Figures ES-2 and ES-3**). The first two parcels are currently vacant, and the third parcel has existing shop buildings from a prior light industrial/wood working use of the property. As proposed, the Project includes 348,425 sqft of manufacturing space for cannabis products, 11,280 sqft of warehousing and distribution, and 60,480 sqft of indoor "mixed light" cannabis growing space.

Analysis Scope

Four study intersections plus the project driveway are studied:

1. Ashby Rd/Shasta Dam Blvd;
2. Ashby Rd/La Mesa Ave;
3. Ashby Rd/El Cajon Ave;
4. Ashby Rd/Project Driveway; and
5. Ashby Rd/Pine Grove Ave.

Four scenarios are analyzed:

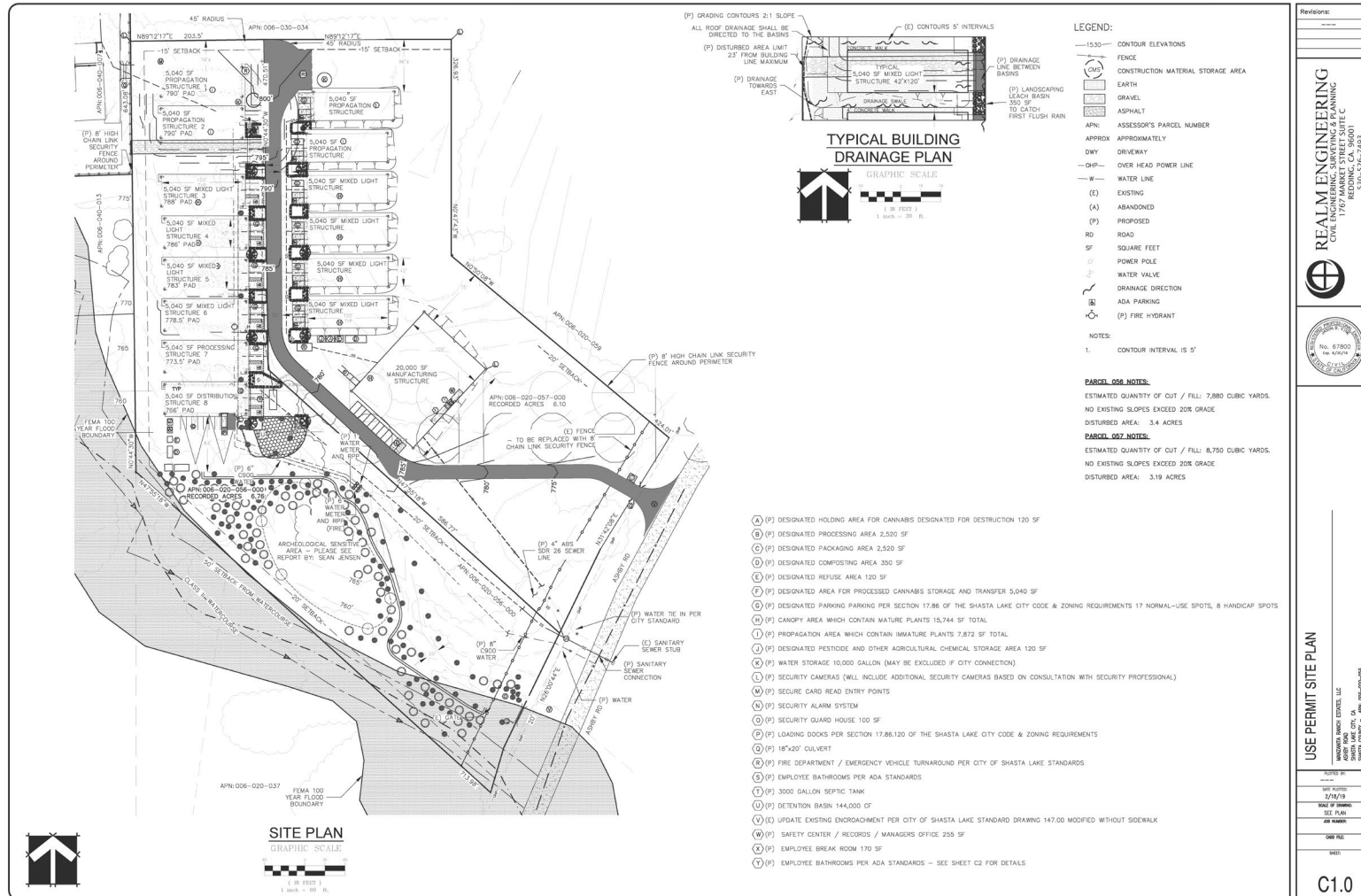
- Existing 2019 Without Project (AM and PM peak-hours);
- Existing 2019 With Project (AM and PM peak-hours);
- Cumulative 2040 Without Project (AM and PM peak-hours); and
- Cumulative 2040 With Project (AM and PM peak-hours).

Study Findings

The Project is consistent with General Plan land use designation and zoning for the three parcels where it is situated. The Project is anticipated to generate 380 daily trips. 72 AM peak-hour trips (62 inbound, 10 outbound) and 73 PM peak-hour trips (22 inbound, 51 outbound).



Figure ES-1. Project Vicinity Map



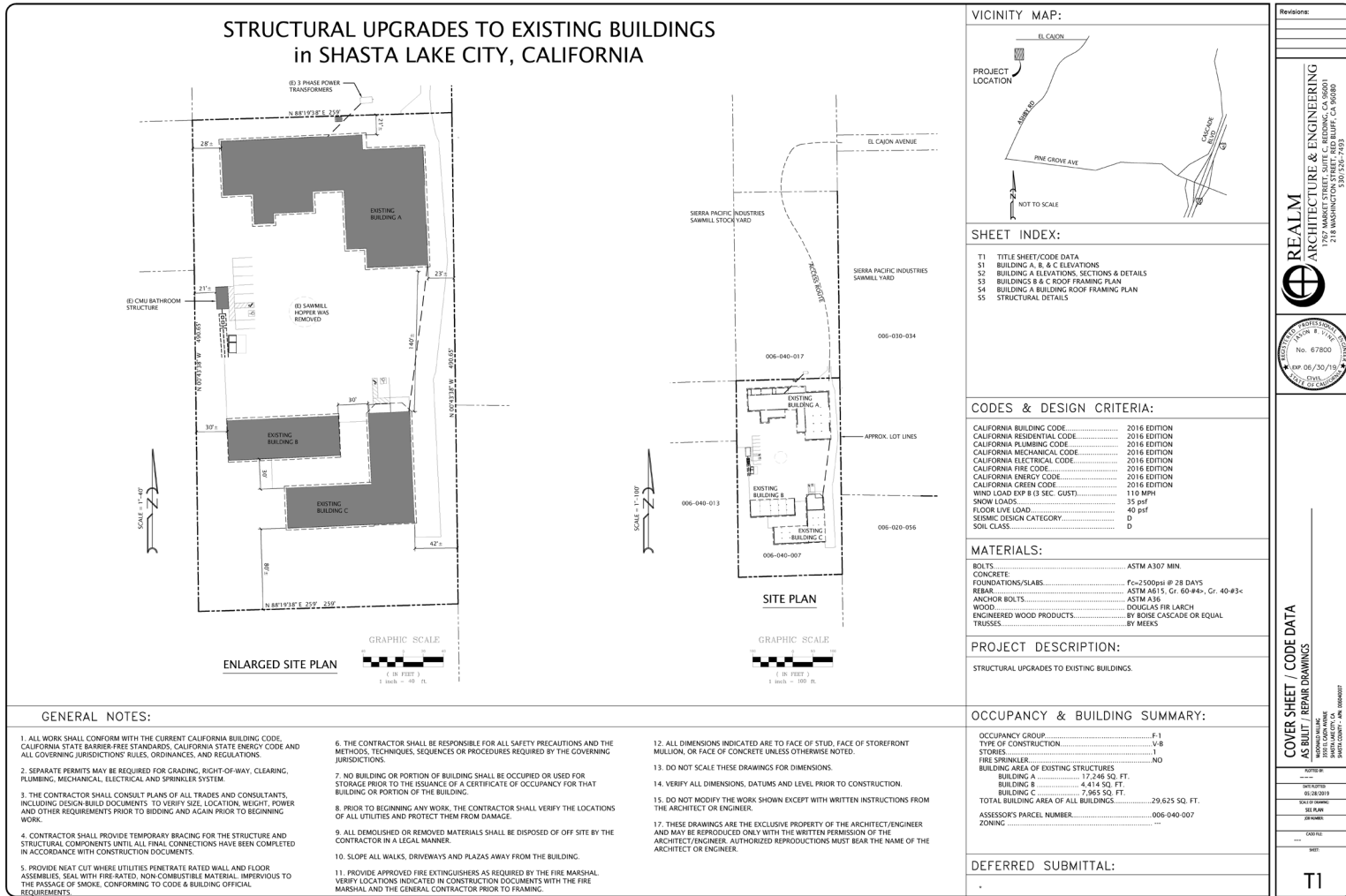


Figure ES-3. Preliminary Site Plan, Parcels 006-040-007

The Project area is estimated to have approximately thirty percent less VMT per service population than the Shasta County Region in both 2020 and 2040. Project VMT impacts are **less-than-significant**.

All study intersections are anticipated to operate at level-of-service C or better under both existing and cumulative conditions, and with or without the project. All study intersections are projected to comply with the City's level-of-service C target, specified in the 1999 General Plan. Project level-of-service impacts are **less-than-significant**.

The need for deceleration and acceleration lanes at the Project driveway were evaluated. Given the relatively low driveway volumes and the available sight distance at the Project driveway there is no safety or traffic operations need for deceleration or acceleration lanes. The project driveway shall be constructed to City of Shasta Lake standards.

Recommended Conditions of Approval (for Traffic)

In addition to the City's standard language for conditions of approval, language implementing the two recommendations below should be added as conditions of approval.

- **Recommended Condition of Approval 1:** Owner/applicant shall construct the Project driveway to City of Shasta Lake standards.
- **Recommended Condition of Approval 2:** Owner/applicant shall pay all applicable fees.

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1. INTRODUCTION

This report presents the results of a traffic impact study undertaken for the Ashby Road Cannabis Campus project (the Project) on behalf of the City of Shasta Lake and Chimienti Law Firm, P.C. The Project is located on three parcels¹ located to the west of the 2100-2200 block of Ashby Road in the City of Shasta Lake, California.

Traffic operations are evaluated at four intersections along Ashby Road that could potentially be impacted by the Project, plus the project driveway. Existing (2019) and cumulative (2040) conditions, both with and without the Project are evaluated during the AM and PM peak hours.

After describing the project, study area, and discussing the methodology used for the traffic impact study, this report goes on to describe traffic operations. Project impacts under the 2019 With Project scenario and the 2040 With Project scenario are then presented along with appropriate mitigation. The final sections of the report are the conclusions and recommendations sections.

2. PROJECT DESCRIPTION

The Project site includes APN #'s 006-020-056, 006-020-057, and 006-040-007 near Ashby Road in the City of Shasta Lake (**Figure 1**). The first two parcels are currently vacant, and the third parcel has existing shop buildings from a prior light industrial/ wood working use of the property. As proposed, the project includes 348,425 sqft of manufacturing space for cannabis products, 11,280 sqft of warehousing and distribution, and 60,480 sqft of indoor "mixed light" cannabis growing space. The use by APN is anticipated to be:

Parcel #006-040-007

- Building A: 17,246 SQ. FT. (cannabis products manufacturing)
- Building B: 4,414 SQ. FT. (cannabis products manufacturing)
- Building C: 7,965 SQ. FT. (distribution is 1,200 sf within this structure and the remaining space is for manufacturing)

Parcel #006-020-056

- Cannabis cultivation "mixed light" building area: 30,240 sqft
- Warehouse building area: 10,080 sqft
- Total building area: 40,320 sqft

Parcel #006-020-057

- Cannabis cultivation "mixed light" building area: 30,240 sqft
- Cannabis products manufacturing building area: 20,000 sqft
- Total building area: 50,240 sqft

¹ Shasta County APN #006-020-056, #006-020-057, and #006-040-007



Figure 1. Project Vicinity Map

All uses under the proposed project would be accessed from Ashby Road via a single driveway through APN 006-020-057. Additional emergency access is available through El Cajon Ave driveways to APN 006-040-007. The project parcels are zoned for industrial and light-industrial uses. Cannabis cultivation, distribution, testing, warehousing, and both volatile and non-volatile manufacturing are permitted uses. Preliminary site plan information is provided in **Figure 2** and **Figure 3**.

3. STUDY AREA

3.1 Study intersections

The traffic study area (**Figure 4**) includes four study intersections along Ashby Road, plus the Project driveway:

1. Ashby Rd/Shasta Dam Blvd;
2. Ashby Rd/La Mesa Ave;
3. Ashby Rd/El Cajon Ave;
4. Ashby Rd/Project Driveway; and
5. Ashby Rd/Pine Grove Ave.

All study locations have two-way-stop-control, where traffic on the major road moves freely and the minor street(s) are controlled by stop signs.

There are two notable land uses that effect traffic in the study area. The first is Central Valley High School, which is located to the southeast of the Ashby Rd/La Mesa Ave intersection with additional access further to the south along Ashby Ave (South of El Cajon Ave). The high school generates a significant number of vehicle trips during the AM peak-hour and adds relatively few trips during the PM peak-hour. Additionally, high-schools increase bicycle and pedestrian traffic through adjacent intersections. The second notable uses are the lumber mills accessed via El Cajon Ave, and truck terminals on Ashby Road south of Pine Grove Ave. These industrial and transportation uses ship and receive goods via both truck and the Union Pacific Valley Subdivision. As a result, heavy-vehicle percentages are relatively high throughout the study area.

3.2 Project Area Roadways

The key roadways in the project vicinity are described below.

Shasta Dam Blvd (SR 151)/Front Street is a Caltrans maintained two lane east west arterial running through the center of the City of Shasta Lake, between Shasta Dam and Interstate 5. The portion of Shasta Dam Blvd just east of Ashby Road is part of a one-way couplet with Front Street. This portion has sidewalk curb and gutter. West of Ashby Road, Shasta Dam Blvd has a sidewalk on the north side. Shasta Dam Blvd includes Class 2 bike lanes in both directions. The Redding Area Bus Authority (RABA) Route 1 utilizes Shasta Dam Blvd as part of RABA Route 1 connecting the City of Shasta Lake to the City of Redding.

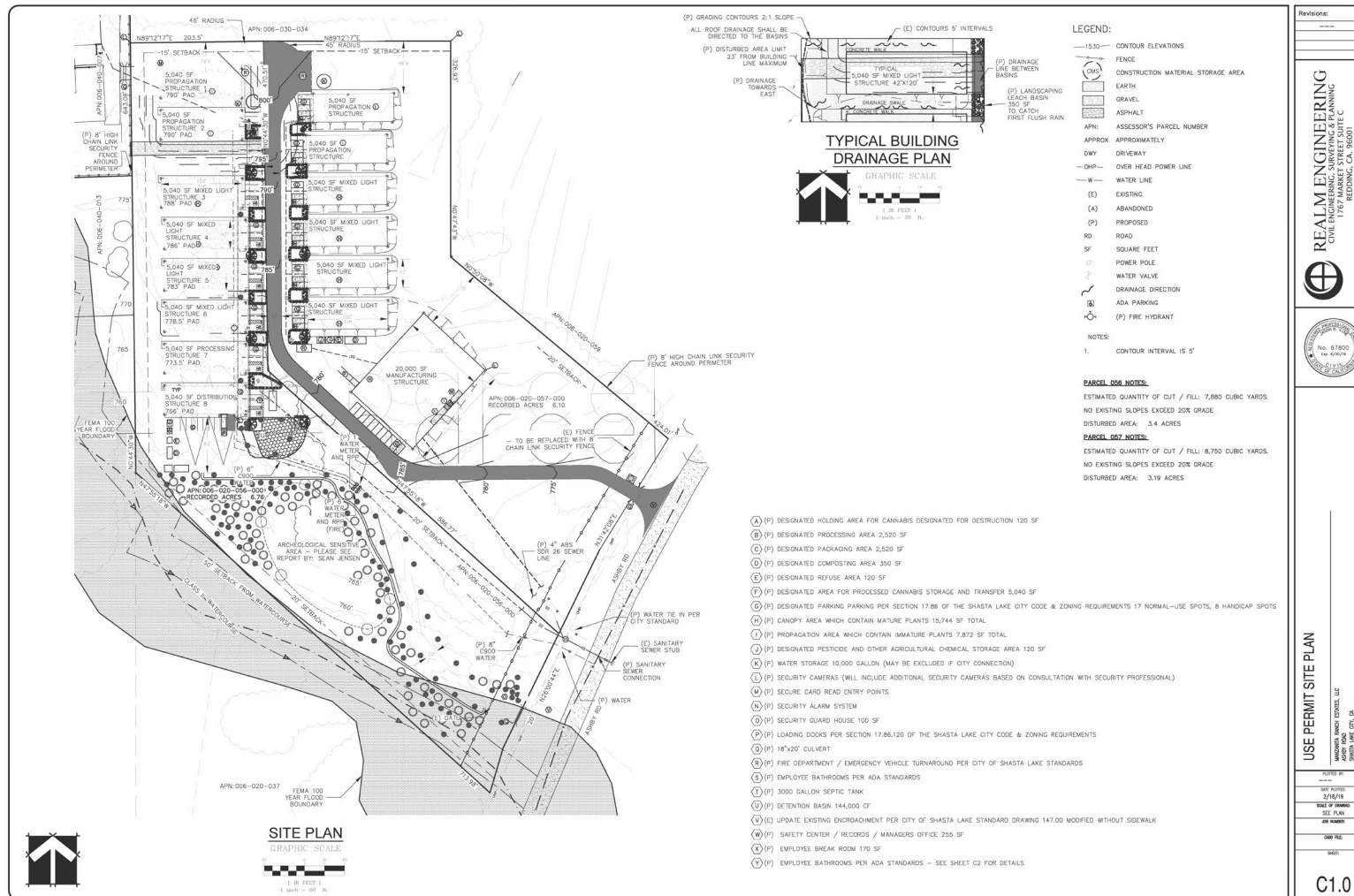


Figure 2. Preliminary Site Plan, Parcels 006-020-056 and 006-020-057

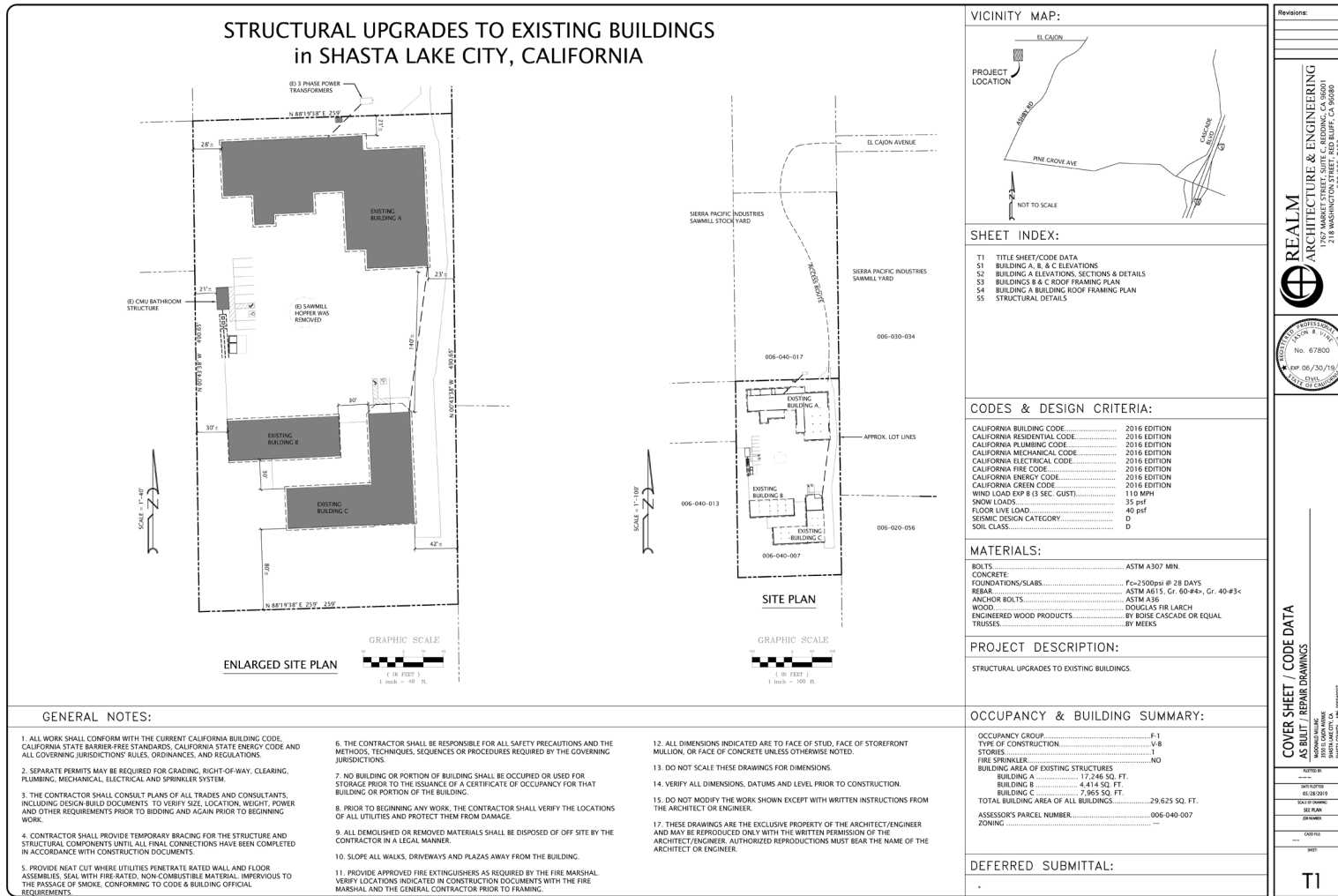


Figure 3. Preliminary Site Plan, Parcels 006-030-056 and 006-040-007



Figure 4. Study Area

Pine Grove Ave is a two lane east/west arterial connecting from Leona Ave on the east side of Interstate 5 to Lake Blvd. It includes class 2 bike lanes in both directions. In the Project vicinity there is curb and gutter to the west of Ashby Road, but not to the East. Sidewalks are provided in residential areas further to the east.

Ashby Road is a two-lane east/west collector street running from Shasta Dam Blvd to south of Pine Grove Ave. There are existing bike lanes in both directions, without curb, sidewalk or gutter. The City's 2009 bicycle plan lists a future class 1 bike trail along Ashby Road as a priority.

La Mesa Ave and El Cajon Ave are local east/west roadways providing access to Ashby Road.

3.3 Study Scenarios

Four scenarios were identified for inclusion in this Traffic Impact Analysis through consultation with City of Shasta Lake staff. The study determines the weekday AM peak-hour and PM peak-hour level-of-service at the study intersections under the following scenarios:

- Existing 2019 (Without Project);
- Existing 2019 Plus Proposed Project;
- Cumulative 2040 (Without Project); and
- Cumulative 2040 Plus Proposed Project.

Existing 2019 and Existing 2019 Plus Proposed Project Scenarios

The California Environmental Quality Act (CEQA) requires an analysis of the existing condition, which reflects the traffic volumes and roadway geometry at the time the study began. This scenario was analyzed both with and without project traffic to identify any project related traffic impacts.

Cumulative 2040 and Cumulative 2040 Plus Proposed Project Scenarios

The cumulative scenario 2040 reflects market rate build-out of the General Plan. This scenario was analyzed both with and without project traffic to identify any project related traffic impacts.

3.4 Regulatory Setting

The City of Shasta Lake General Plan Circulation Element contains the following policies and implementation measures, which could apply to the proposed project:

- Policy C-a: Monitor, maintain, and improve, as necessary, the operation, safety and performance of the street system, including roadway surfaces, capacity, and traffic signals. For capacity and operational purposes, strive to attain a level-of-service (LOS) C to the maximum degree feasible, so that potential traffic congestion on streets and at intersections is minimized;
- Implementation Measure C-(8): Continue to require that new development pays a fair share of the cost of street and other traffic and transportation improvements based on traffic generated and impacts on service levels;

- Implementation Measure C-(14): Development shall mitigate any adverse impacts of a proposed development project on the existing street system. This may include necessary street improvements, traffic signs, or signals.

3.5 Transit Service

Shasta County is served by several transportation providers. Traditional fixed-route transit is operated by the Redding Area Bus Authority (RABA), which operates Monday through Saturday from 5:30 AM-7:30 PM. RABA operates 10 fixed routes within the cities of Redding, Shasta Lake, and Anderson. Route 1 provides hourly service on a loop from the “Masonic Transfer Center” along Oasis Road, Cascade Blvd, Shasta Dam Road, and Lake Blvd.

3.6 Bicycle Facilities

There are four types of bicycle facilities (Class I, II, III and IV) used in California and defined by the Highway Design Manual². Within the Project area there are existing class 2 bike paths along Shasta Lake Blvd, Pine Grove Ave, and Ashby Road. Class 2 bike lanes are generally striped along streets in corridors where there is significant bicycle demand, and where there are distinct needs that can be served by them. Bike lanes are intended to delineate the right-of-way assigned to bicyclists and motorists and to provide for more predictable movements by each.

4. ASSESSMENT OF PROJECT

4.1 Trip Generation

Traffic generated by the Project was based on:

- Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition (2017), for the manufacturing, warehousing, and distribution uses. The 59,705 sqft of building space for these uses was classified as ITE land use #110 “light industrial” and converted to employment at a rate of 650 sqft per employee.
- A cannabis cultivation trip generation rate from grey literature³ of 1.64 daily trips per 1000 sqft, with 10% of traffic occurring during the AM and PM peak-hours, applied to the 60,480 sqft of cannabis production.

Calculations are provided in **Table 1**. The Project developers anticipated having about 22 employees on site initially rather than the 92 shown in **Table 1**. The employment and trip generation estimates used herein are based on transportation engineering industry standard approaches and are intended to be conservatively high to ensure that all potential project impacts

² Caltrans (2012) Highway Design Manual, Chapter 1000,
<http://www.dot.ca.gov/hq/opdp/hdm/pdf/english/chp1000.pdf>

³ ERA Economics, LLC for CA Department of Food and Agriculture (2017), (RAND Drug Policy Research Center 2010)] as cited by Santa Cruz County (2017) Commercial Cannabis Cultivation and Manufacturing Regulations and Licensing Program, DEIR,
http://www.sccoplanning.com/Portals/2/County/Planning/env/Cannabis_EIR/Individual%20EIR%20Sections%20PDF%20Files/3.13_Transportation_Circulation_CannabisEIR_Draft.pdf.

are identified and addressed. Actual trip generation and employment may be substantially lower than the estimate derived here.

The Project is anticipated to generate 380 daily trips. 72 AM peak-hour trips (62 inbound, 10 outbound) and 73 PM peak-hour trips (22 inbound, 51 outbound).

Table 1. Project Trip Generation

Use	ITE LU Code	Units	Quantity	Item	Daily Total	Inbound	Outbound	AM Total	Inbound	Outbound	PM Total	Inbound	Outbound
Light Industrial	LU 110	Emp	92	Rate	3.05	50%	50%	0.67	85%	15%	0.68	30%	70%
				Trips	281	141	141	62	53	9	63	19	44
Mixed Light Cannabis Production	n/a	KSF	60.48	Rate	1.64	50%	50%	0.16	85%	15%	0.16	30%	70%
				Trips	99	50	49	10	9	1	10	3	7
Project Total					380	191	190	72	62	10	73	22	51

4.2 Trip Distribution and Assignment.

Trip distribution (**Figure 5**) was based on observed traffic counts. Inbound and outbound project trip assignment is included on Figure 3.

5. TRAFFIC IMPACT STUDY METHODOLOGY

This section provides a process overview, describes traffic forecasting, and discusses the methods/criteria used to evaluate level-of-service. A discussion of the significance criteria is included.

5.1 Process Overview

The overall analysis process was structured to identify potential adverse traffic effects related to the Project.

- Traffic volumes and turning movements for the 2019 Without Project condition were determined from the observed traffic counts and trip generation estimates.
- Study intersection traffic operations were analyzed both with and without the project to identify potential significant project impacts.
- Significance criteria were based on the City of Shasta Lake General Plan, Transportation and Circulation Element policies.

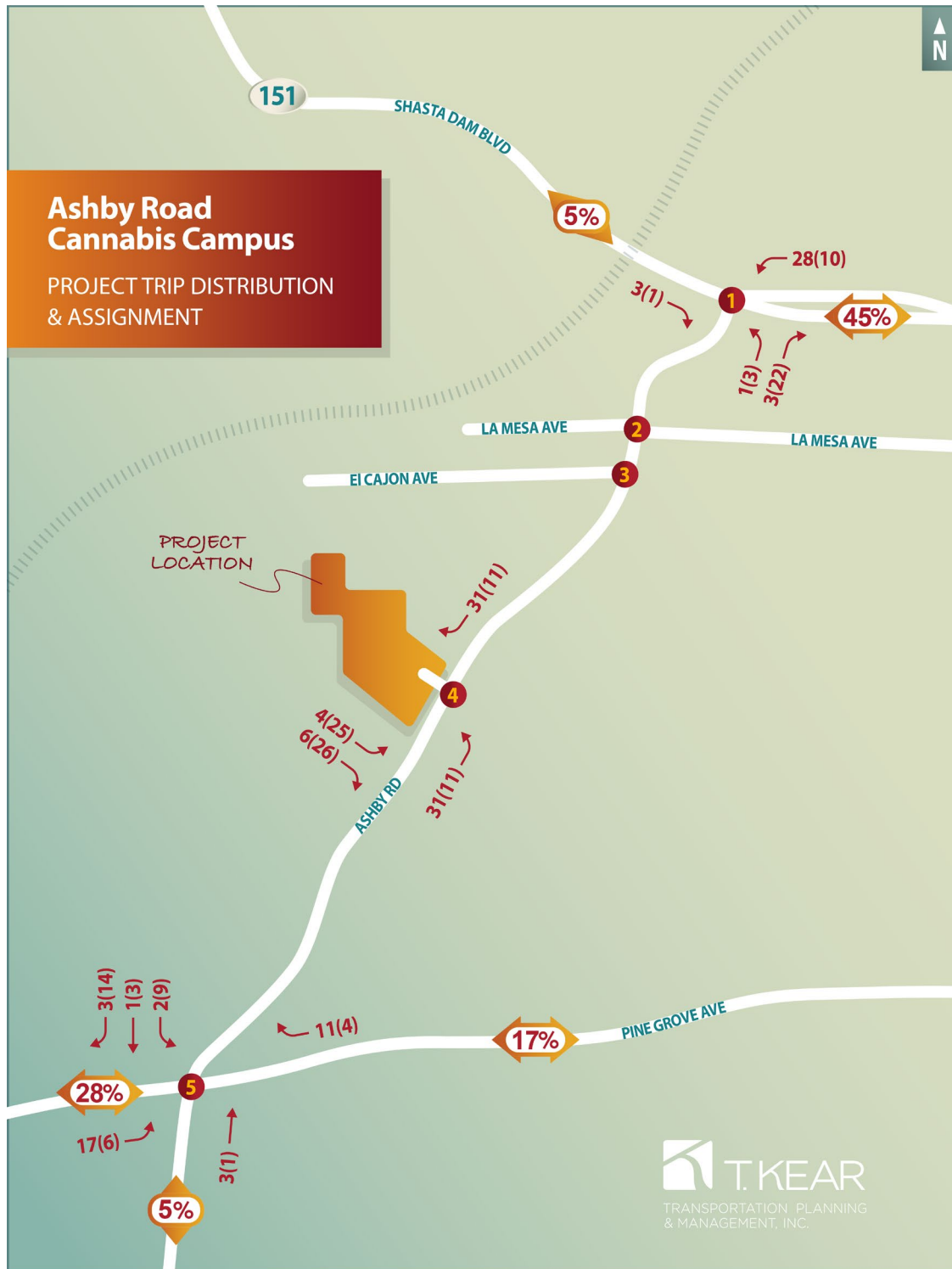


Figure 5. Project Trip Distribution and Assignment

5.2 Level-of-Service Methodology

Level-of-service (LOS) is a qualitative indication of the level of delay and congestion experienced by motorists. Levels-of-service are designated by the letters A through F, with A being the best conditions and F being the worst (high delay and congestion). Calculation methodologies, measures of performance, and thresholds for each letter grade differ for road segments, signalized intersections, and un-signalized intersections.

Based on guidance from Shasta County staff, the following procedures described below for intersection and segment traffic operations analysis were selected for this study.

Intersection Traffic Operations Analysis

Signalized Intersections

The methodology from Highway Capacity Manual (HCM) 6th Edition⁴ are used to analyze signalized intersections. Level-of-service can be characterized for the entire intersection, each approach, or by lane group. Control delay alone (the weighted average delay for all vehicles entering the intersection) is used to characterize level-of-service for the entire intersection or an approach. Control delay and volume to capacity ratio are used to characterize level-of-service for lane groups. The average delay criteria used to determine the level-of-service at signalized intersections is presented in **Table 2**.

Un-signalized Intersections

At an un-signalized intersection, most of the main street traffic is undelayed, and have acceptable conditions. The main street left-turn movements and the minor street movements are all susceptible to delays of varying degrees. Generally, the higher the main street traffic volumes, the higher the delay for the minor movements. Separate methods are utilized for Two-Way Stop-Controlled (TWSC) intersections, All-Way Stop-Controlled (AWSC) intersections, and uncontrolled intersections.

- **TWSC:** The methodology for analysis of two-way stop-controlled intersections calculates an average total delay per vehicle for each minor street movement and for the major street left-turn movements, based on the availability of adequate gaps in the main street through traffic. A level-of-service designation is assigned to individual movements or to combinations of movements (in the case of shared lanes) based upon delay, it is not defined for the intersection as a whole. Un-signalized intersection level-of-service reported herein is for each movement (or group of movements) based upon the respective average delay per vehicle. **Table 4** presents the average delay criteria used to determine the level-of-service at TWSC and at AWSC intersections.

⁴ TRB (2016) Highway Capacity Manual 6th Edition, Transportation Research Board, Washington D.C.

Table 2. Level-of-Service Criteria for Signalized Intersections.

Level-of-Service	Description	Average Delay ¹ (Sec. /Vehicle.)
A	Very Low Delay: This level-of-service occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all.	≤ 10
B	Minimal Delays: This level-of-service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.	> 10 - 20
C	Acceptable Delay: Delay increases due to only fair progression, longer cycle lengths, or both. Individual cycle failures (<i>to service all waiting vehicles</i>) may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.	> 20 - 35
D	Approaching Unstable/Tolerable Delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35 - 55
E	Unstable Operation/Significant Delays: This is considered by many agencies the upper limit of acceptable delays. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.	> 55 - 80
F	Excessive Delays: This level, considered to be unacceptable to most drivers, often occurs with oversaturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such delay levels.	> 80.0 or v/c > 1.0

Note 1: Weighted average of delay on all approaches. This is the measure used by the Highway Capacity Manual to determine level-of-service. Any movement with a volume-to-capacity ratio (v/c) greater than 1.0 is considered to be level-of-service F.

Source: Transportation Research Board (2016) Highway Capacity Manual 6th Edition, Washington D.C., Chapter 19; Transportation Research Board (2010) Highway Capacity Manual, Washington D.C., Chapter 18; and Transportation Research Board (2000) Highway Capacity Manual, Washington D.C., Chapter 16

- **AWSC:** At all-way stop-controlled intersections, the level-of-service is determined by the weighted average delay for all vehicles entering the intersection. The methodologies for these types of intersections calculate a single weighted average delay and level-of-service for the intersection as a whole. The average delay criteria used to determine the level-of-service at all-way stop intersections is the same as that presented in **Table 4**. Level-of-service for specific movements can also be determined based on the TWSC methodology.
- **Uncontrolled:** Level-of-service is not defined for uncontrolled intersections. Criteria from Section 2B.04 of the California MUTCD⁵ are used to evaluate the need for installation of yield or stop control. The need for stop control is used as a surrogate for level-of-service, with locations deemed as acceptable without any stop or yield control, being considered to have acceptable traffic operations.

It is not unusual for some of the minor street movements at un-signalized intersections to have level-of-service D, E, or F conditions while the major street movements have level-of-service A, B, or C conditions. In such a case, the minor street traffic experiences delays that can be substantial for individual minor street vehicles, but the majority of vehicles using the intersection have very little delay. Usually in such cases, the minor street traffic volumes are relatively low. If the minor street volume is large enough, improvements to reduce the minor street delay may be justified, such as channelization, widening, or signalization.

Signal Warrants

At each unsignalized intersection, the potential need for a traffic signal was evaluated. Traffic signal warrants are a series of standards that provide guidelines for determining if a traffic signal is appropriate. Signal warrant analyses are typically conducted at intersections of uncontrolled major streets and stop sign-controlled minor streets. If one or more signal warrants are met, signalization of the intersection may be appropriate. However, a signal should not be installed if none of the warrants are met, since the installation of signals would increase delays on the previously uncontrolled major street, and may increase the occurrence of particular types of accidents.

As stated in the 2014 California Edition of the Manual on Uniform Traffic Control Devices (California MUTCD 2014)⁶, *“An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.*

⁵ Caltrans (2014) California MUTCD 2014 Edition, Section 2B.04, November 7, 2014

⁶ Caltrans (2019) California Manual on Uniform Traffic Control Devices - FHWA's MUTCD 2009 Edition as amended for use in California - 2014 Edition - Revision 4, March 29, 2019. Section 4C.

Table 3. Level-of-Service Criteria for Un-signalized Intersections

Level of Service (LOS)	Description	TWSC ¹		AWSC ²	
		Average Delay by Movement (seconds / vehicle)		Intersection Wide Average Delay (seconds / vehicle)	
A	Little or no delay	0-10	& v/c ≤ 1.0	0-10	& v/c ≤ 1.0 ³
B	Short traffic delay	> 10 – 15	& v/c ≤ 1.0	> 10 – 15	& v/c ≤ 1.0 ³
C	Average traffic delays	> 15 – 25	& v/c ≤ 1.0	> 15 – 25	& v/c ≤ 1.0 ³
D	Long traffic delays	> 25 – 35	& v/c ≤ 1.0	> 25 – 35	& v/c ≤ 1.0 ³
E	Very long traffic delays	> 35 – 50	& v/c ≤ 1.0	> 35 – 50	& v/c ≤ 1.0 ³
F	Extreme delays potentially affecting other traffic movements in the intersection	> 50	or v/c > 1.0	> 50	or v/c > 1.0 ³

Note 1: Two-Way Stop-Control (TWSC) level-of-service is calculated separately for each minor street movement (or shared movement) as well as major street left turns using these criteria. Any movement with a volume to capacity ratio (v/c) greater than 1.0 is considered to be level-of-service F.

Note 2: All-Way Stop-Control (AWSC) assessment of level-of-service at the approach and intersection levels is based solely on control delay.

Note 3: For AWSC approaches and intersection-wide assessment, level-of-service is defined solely by control delay (v/c is only utilized when analyzing specific movements or lanes).

Source: Transportation Research Board (2016) Highway Capacity Manual 6th Edition, Washington D.C., Chapter 20 (TWSC) and Chapter 21 (AWSC). Transportation Research Board (2010) Highway Capacity Manual, Washington D.C., Chapter 19 (TWSC) and Chapter 20 (AWSC).

The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions, and the applicable factors contained in the following traffic signal warrants:

- *Warrant 1, Eight-hour Vehicular Volume*
- *Warrant 2, Four-hour Vehicular Volume*
- *Warrant 3, Peak-hour*
- *Warrant 4, Pedestrian Volume*
- *Warrant 5, School Crossing*
- *Warrant 6, Coordinated Signal System*
- *Warrant 7, Crash Experience*
- *Warrant 8, Roadway Network*
- *Warrant 9, Intersection Near a Grade Crossing*

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal."

Consistent with the industry standard of practice, this Traffic Impact Analysis did not evaluate the full panoply of warrants for traffic signals, but instead focused on the peak-hour warrant. The MUTCD states that, "This [peak-hour] signal warrant shall be applied only in unusual cases, such

as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.” So, the peak-hour warrant is being used in this impact analysis study as an “indicator” of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed the peak-hour warrant are considered (for the purposes of this impact analysis) to be likely to meet one or more of the other signal warrants (such as the 4-hour or 8-hour warrants). This peak-hour analysis is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction.

Unsignalized intersections were evaluated using the Peak-hour Volume Warrant (Warrant No. 3) in the California MUTCD 2014. The Peak-hour Volume Warrant was applied where the minor street experiences long delays in entering or crossing the major street for at least one hour in a day.

Even if the Peak-hour Volume Warrant is met, a more detailed signal warrant study is recommended before a signal is installed. The more detailed study should consider volumes during the daily peak-hours of roadway traffic, pedestrian traffic, and accident histories.

5.3 Standards of Significance

Level-of-service impacts of the proposed project were determined based on the methods described above and identified as either "significant" or "less-than-significant" by applying the level-of-service “C” thresholds found in City of Shasta Lake 1999 General Plan:

- Worsening of an intersection’s level-of-service from “A”, “B”, or “C” to level-of-service from “D”, “E”, or “F”.
- Increasing delay at Intersections that are, or are anticipated to, operate at level-of-service “D”, “E”, or “F” without the project.

5.4 Analysis Tools

Macroscopic Intersection Analysis

Control delay and level-of-service for study intersections were calculated using PTV Vistro⁷ traffic analysis software (Version 7). Vistro is a complete traffic analysis software package for evaluating development impacts, optimizing traffic signal timings, and evaluating intersection levels of service. It implements the methodologies of the HCM 2000, 2010, and 6th Ed. for signalized and un-signalized intersections, and requires data on road characteristics (geometric), traffic counts, and the signal timing data for each analysis intersection.

When calculating intersection control delay and level-of-service for all study intersections, default parameters are only used in instances where specific field data were unavailable. For example, peak-hour factors, traffic volumes, geometry, heavy-vehicle percentages, and pedestrian volumes

⁷ PTV Vistro (2017), Portland OR.

are based on field data; saturation flow rates and gap acceptance models are based on HCM 6th Edition defaults. Traffic Counts are provided in **Appendix A**.

Traffic Forecasting

Traffic forecasts utilize data from the ShastaSim 1.2 regional travel demand model maintained by the Shasta Regional Transportation Agency (SRTA). The default loaded model networks for 2015 and 2040 were used to represent “modeled” traffic in the project vicinity by interpolation to 2019. Site specific calibration factors were estimated based on the traffic counts and 2019 interpolated model traffic, and applied to the 2040 model volumes. Travel demand model outputs are provided in **Appendix B**. 2019 model volumes were used as a floor with the 2040 model volumes to ensure that there would not be any intersection approach or departure road segments with negative growth factors.

Turning Movement Forecasts

2040 turning movement forecasts were derived from the 2019 traffic counts and growth from the travel demand model using the NCHRP 255 (FURNESS) process within the TurnsW32 software package. NCHRP 255 calculations are provided in **Appendix C**. Existing traffic counts were used as a floor to ensure that 2040 turning movement volumes would be equal to or greater than the observed 2019 turning movement volumes. Subsequently, The City provided a December 19, 2018 traffic count and a 2040 forecast for intersection 5 (Ashby Rd/Pine Grove Ave) from the “Windsor Estates 3 Project” TIS.

6. 2019 WITHOUT PROJECT CONDITIONS

6.1 Data Sources

The analysis tools require a variety of data to generate the evaluation criteria. The following sections describe data collection procedures for 2019 Without Project conditions. There were three primary data elements (roadway characteristics, intersection turning movement counts, and traffic control data).

Roadway Geometry and Usage Characteristics

The geometry and usage data for the analysis were collected using aerial photographs, field visits, and prior studies. Current intersection geometry was field validated. **Table 4** shows the key items included in the geometric data and the source for each item.

Table 4. Key Items and Sources for Geometry and Usage Data

Key Item	Source
Lane configurations & width	Aerial photographs and field visits
Lane utilization	Prior studies, aerial photographs, and field visits
Intersection spacing	Aerial photographs and field visits
Length of storage bays	Aerial photographs and field visits
Transit stops and routes	Transit schedules, aerial photographs, and field visits
Turn prohibitions or allowance	Aerial photographs and field visits

Lane configurations and width – These data specify the number of lanes and the width of the roadway in each direction, and the directional turns that are allowed from each lane.

Lane utilization – These data specify how lanes are used by drivers, such as traffic distribution between lanes on a multi-lane roadway.

Intersection spacing – These data refer to the distance between intersections, which is recorded in feet.

Length of storage bays – These data refer to the length (feet) of available storage for left- or right-turning vehicles where exclusive turn lanes are available. These data are collected for right-turn lanes when the parking lane is used as a right-turn lane.

Transit stops and routes – A transit stop is an area where passengers await, board, alight, and transfer, between transit vehicles. A transit route is the roadway that transit vehicles operate on.

Turn prohibitions or allowance – This data specifies if right turns on red (RTOR), left turns, or U-turns, are allowed on the roadway.

Intersection Turning Movement Counts

Turning movement data was collected on June 4, 2019 at the two intersections adjacent to Central Valley high school:

2. Ashby Rd/La Mesa Ave; and
3. Ashby Rd/El Cajon Ave.

Additional counts were collected on June 20, 2019:

1. Ashby Rd/Shasta Dam Blvd;
2. Ashby Rd/La Mesa Ave;
4. Ashby Rd/Project driveway; and
5. Ashby Rd/Pine Grove Ave.

Subsequently, The City provided an additional count for intersection #5 Ashby Rd/Pine Grove Ave that was collected on December 19, 2018.

To adjust Ashby Rd/Shasta Dam Blvd for school traffic, the difference in approach and departure volumes between the two Ashby Rd/La Mesa Ave counts was added to the approach and departure volumes at intersections counted on June 10th. The additional school traffic was distributed in proportion to the observed turning movements.

6.2 2019 Without Project Intersection Level-of-Service

Existing morning and evening peak-period vehicle and pedestrian turning movement counts were used to conduct the intersection level-of-service analysis for the 2019 Without Project scenario.

Figure 6 provides a summary of the intersection lane geometry and peak-period turning movements under 2019 Without Project conditions.

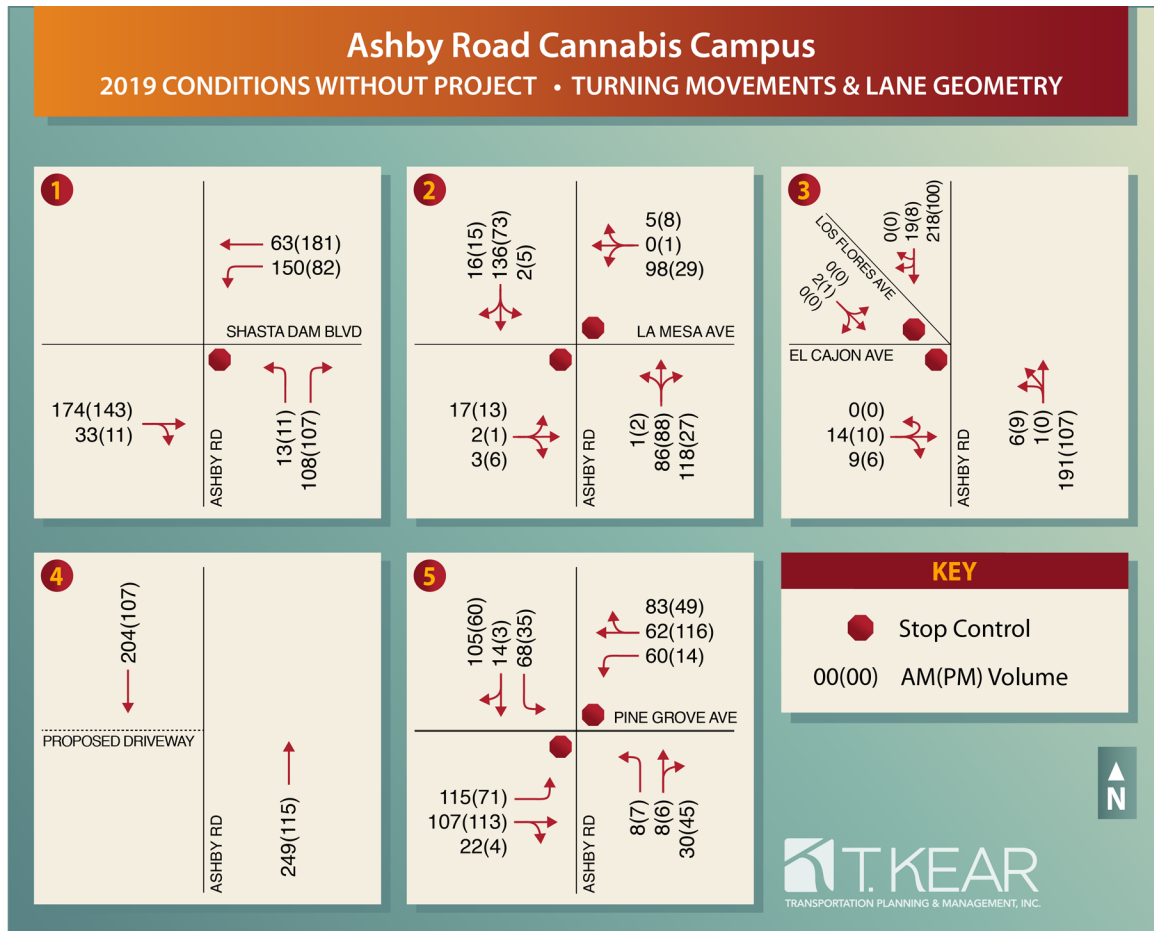


Figure 6. 2019 Without Project Turning Movements and Lane Geometry

Table 5 presents a summary of level-of-service results for the study intersections and road segment under 2019 Without Project conditions. The results indicate that all study intersections operate at level-of-service “C” or better. The peak-hour signal warrant (Warrant 3) was checked, and was not satisfied, for any study intersection. Calculation sheets for intersection delay and level-of-service are provided in **Appendix D**.

Table 5. 2019 Without Project Intersection Delay and Level-of-Service Results Table

Intersection	Control (See Note 1)	Control Delay (Seconds) and Level-of-Service		Worst Movement or Shared Movement at TWSC Intersections
		AM	PM	
1. Ashby Rd/Shasta Dam Blvd	TWSC	16.6/C	12.9/C	NB left
2. Ashby Rd/La Mesa Ave	TWSC	13.6/B	10.7/B	WB
3. Ashby Rd/El Cajon Ave	TWSC	13.1/B	10.3/B	WB
4. Ashby Rd/Project Driveway	TWSC	n/a	n/a	EB
5. Ashby Rd/Pine Grove Ave	TWSC	21.2/C	13.9/B	SB left

- 1: Two-Way Stop-Control (TWSC) level-of-service is calculated separately for each minor street movement (or shared movement) as well as major street left turns. The worst intersection approach, or shared movement, on which the reported level-of-service is based is listed in the right most column. Any movement with a volume to capacity ratio (v/c) greater than 1.0 is considered to be level-of-service F.

7. 2019 WITH PROJECT CONDITIONS

Peak-hour traffic associated with the proposed project was added to the Existing 2019 scenario volumes, then delay and level-of-service were determined at the study intersections. **Figure 7** summarizes the turning movements and lane configurations for the 2019 Plus Proposed Project scenario.

Table 6 presents a summary of the level-of-service results for the study intersections under the 2019 With Project scenario. The results indicate that all study intersections operate at level-of-service “C” or better. The peak-hour signal warrant (Warrant 3) was checked, and was not satisfied, for any study intersection. Calculation sheets for intersection delay and level-of-service are provided in **Appendix D**.

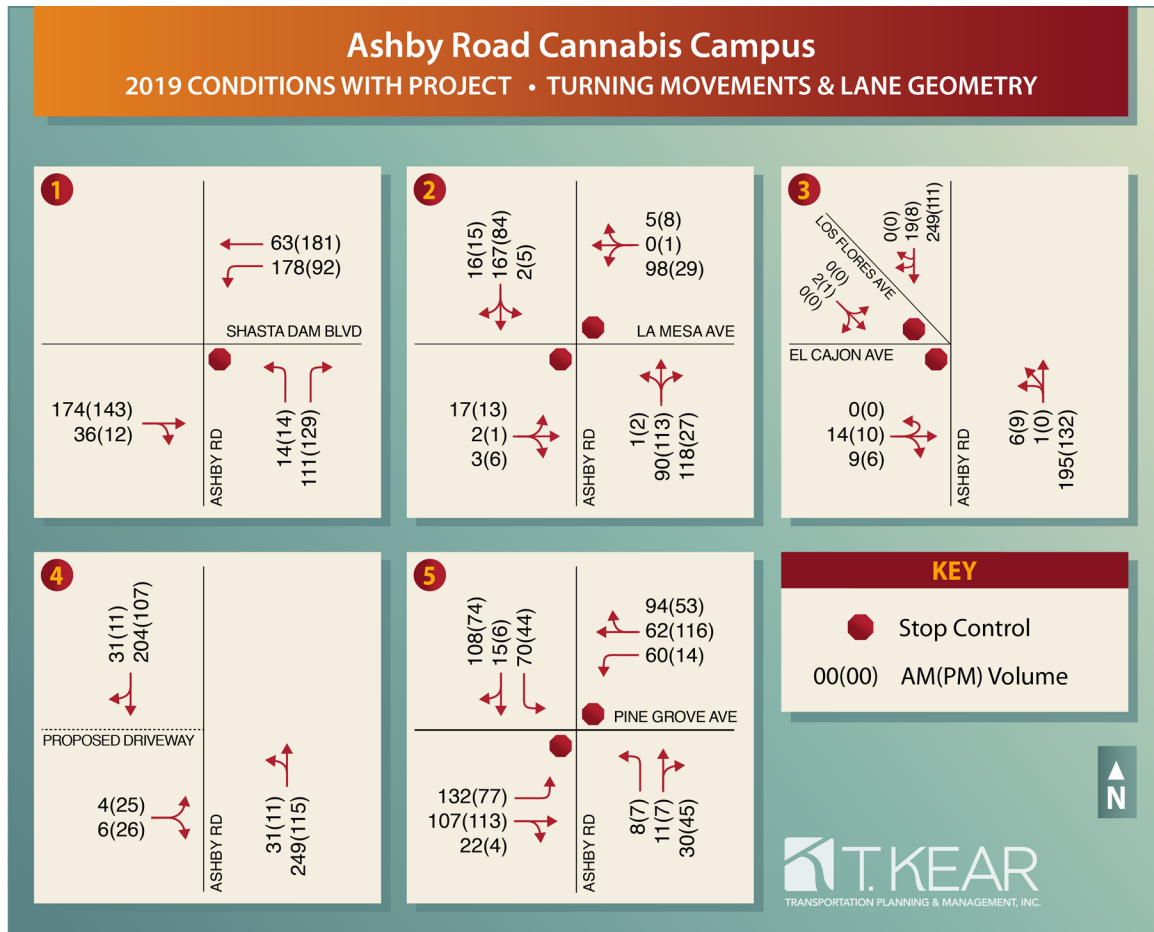


Figure 7. 2019 With Project Turning Movements and Lane Geometry

Table 6. 2019 Intersection Delay and Level-of-Service, With/Without Project Results Table

Intersection	Control (See Note 1)	Control Delay (Seconds) and Level-of-Service				Worst Movement or Shared Movement at TWSC Intersections
		AM	PM	AM + Project	PM + Project	
1. Ashby Rd/Shasta Dam Blvd	TWSC	16.6/C	12.9/C	18.5/C	13.2/B	NB left
2. Ashby Rd/La Mesa Ave	TWSC	13.6/B	10.7/B	14.4/B	11.1/B	WB
3. Ashby Rd/El Cajon Ave	TWSC	13.1/B	10.3/B	13.7/B	10.6/B	WB
4. Ashby Rd/Project Driveway	TWSC	n/a	n/a	11.0/B	9.9/A	EB
5. Ashby Rd/Pine Grove Ave	TWSC	21.2/C	13.9/B	23.5/C	14.4/B	SB left

- 1: Two-Way Stop-Control (TWSC) level-of-service is calculated separately for each minor street movement (or shared movement) as well as major street left turns. The worst intersection approach, or shared movement, on which the reported level-of-service is based is listed in the right most column. Any movement with a volume to capacity ratio (v/c) greater than 1.0 is considered to be level-of-service F.

8. 2040 WITHOUT PROJECT CONDITIONS

2040 morning and evening peak-period vehicle turning movements were estimated based on the existing traffic counts, growth factors from the Shasta county travel demand model, and the NCHRP 255 (FURNESS) process. **Figure 8** provides a summary of the intersection lane geometry and peak-period turning movements under 2040 Without Project conditions.

Table 7 presents a summary of the level-of-service results for the study intersections under the 2040 Without Project scenario. The results indicate that all study intersections operate at level-of-service "C" or better. The peak-hour signal warrant (Warrant 3) was checked, and was not satisfied, for any study intersection. Calculation sheets for intersection delay and level-of-service are provided in **Appendix D**.

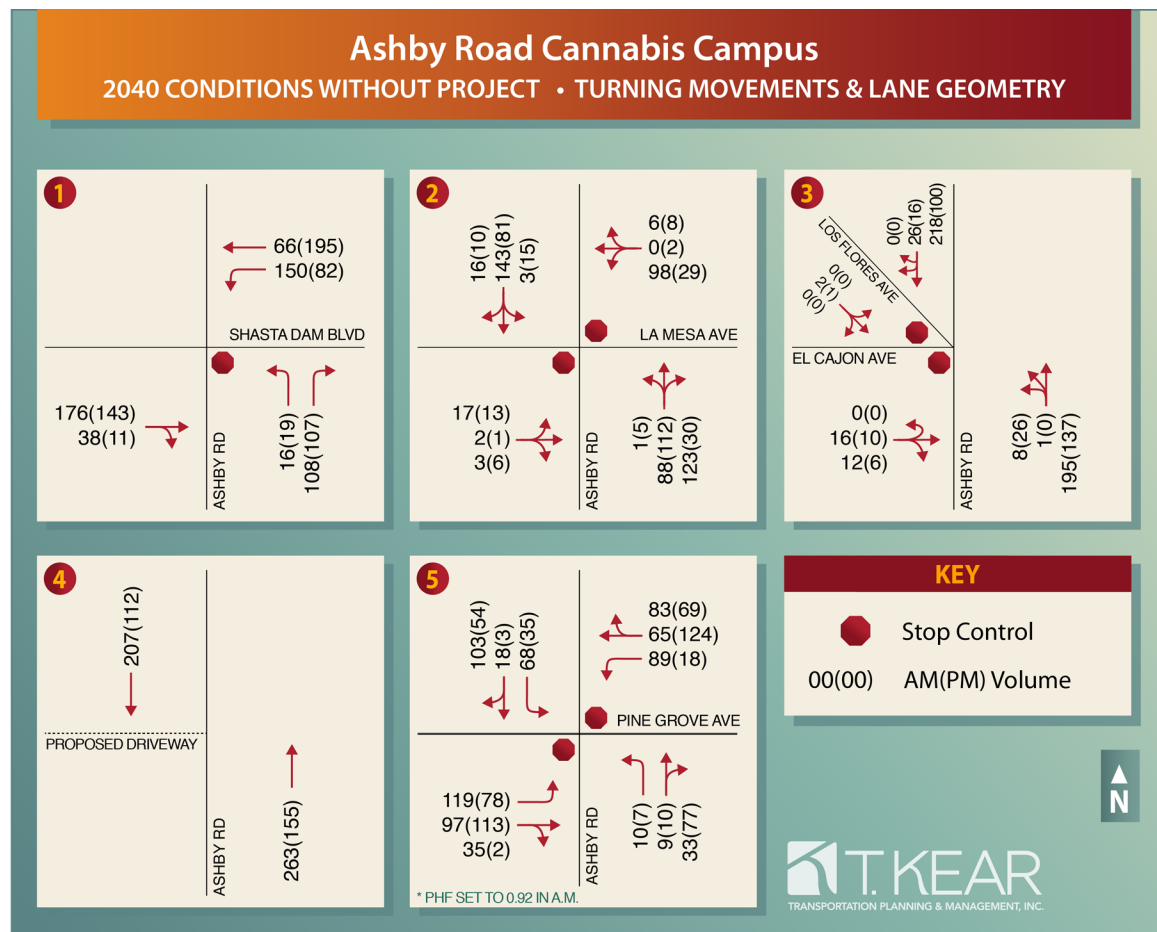


Figure 8. 2040 Without Project Turning Movements and Lane Geometry

Table 7. 2040 Intersection Delay and Level-of-Service, Without Project Results Table

Intersection	Control (Note 1)	Control Delay (Seconds) and Level-of-Service		Worst Movement or Shared Movement at TWSC Intersections
		AM	PM	
1. Ashby Rd/Shasta Dam Blvd	TWSC	17.0/C	13.2/B	NB left
2. Ashby Rd/La Mesa Ave	TWSC	13.9/B	11.5	WB
3. Ashby Rd/El Cajon Ave	TWSC	13.2/B	10.9/B	WB
4. Ashby Rd/Project Driveway	TWSC	n/a	n/a	EB
5. Ashby Rd/Pine Grove Ave	TWSC	21.5/C	15.3/C	SB left

- 1: Two-Way Stop-Control (TWSC) level-of-service is calculated separately for each minor street movement (or shared movement) as well as major street left turns. The worst intersection approach, or shared movement, on which the reported level-of-service is based is listed in the right most column. Any movement with a volume to capacity ratio (v/c) greater than 1.0 is considered to be level-of-service F.

9. 2040 WITH PROJECT CONDITIONS

Peak-hour traffic associated with the proposed project was added to the Existing 2040 Without Project scenario traffic volumes, delay and level-of-service were determined at the study intersections. **Figure 9** summarizes the turning movements and lane configurations for the 2040 Plus Proposed Project scenario.

Table 8 presents a summary of the level-of-service results for the study intersections under the 2040 With Project scenario. The results indicate that all study intersections operate at level-of-service "C" or better. The peak-hour signal warrant (Warrant 3) was checked, and was not satisfied, for any study intersection. Calculation sheets for intersection delay and level-of-service are provided in **Appendix D**.

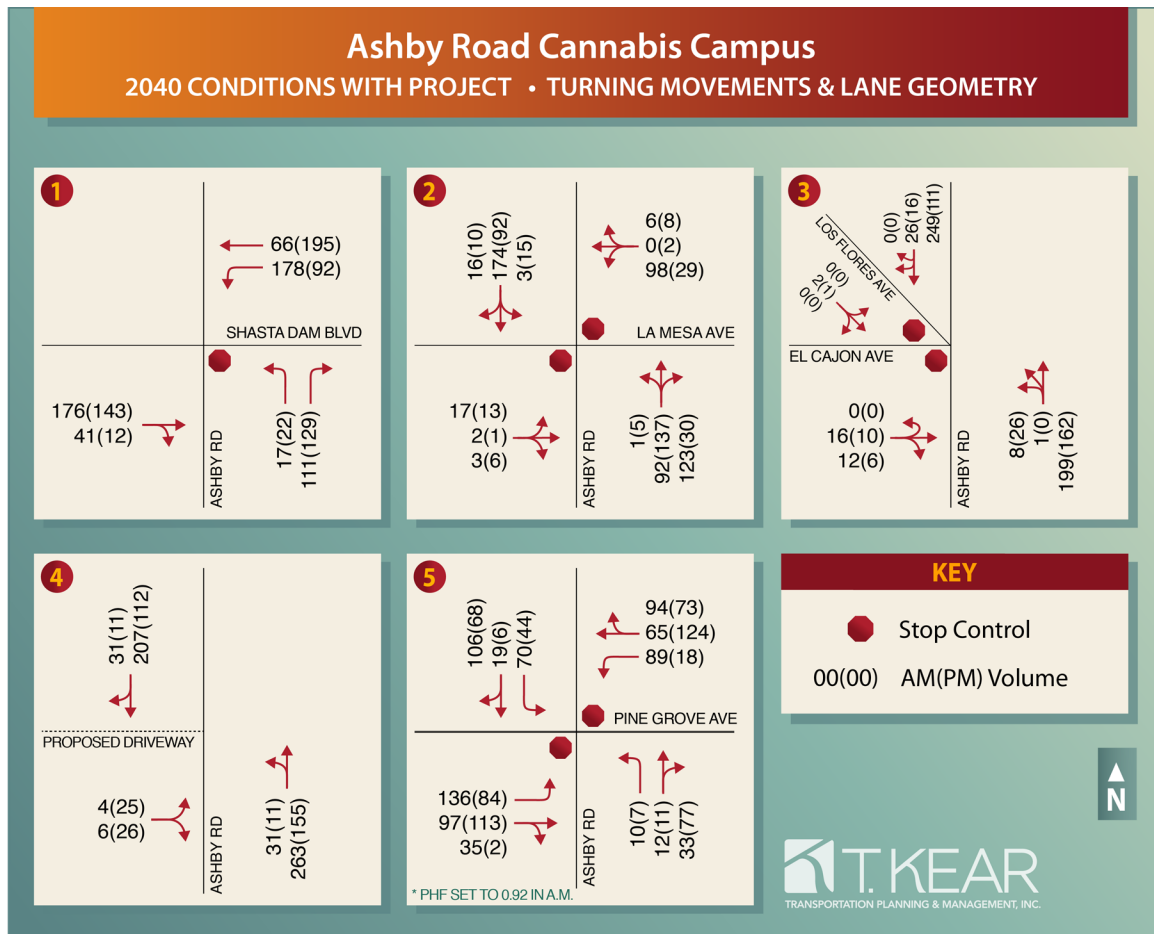


Figure 9. 2040 With Project Turning Movements and Lane Geometry

Table 8. 2040 Intersection Delay and Level-of-Service, With/Without Project Results Table

Intersection	Control (See Note 1)	Control Delay (Seconds) and Level-of-Service				Worst Movement or Shared Movement at TWSC Intersections
		AM	PM	AM + Project	PM + Project	
1. Ashby Rd/Shasta Dam Blvd	TWSC	17.0/C	13.2/B	18.6/C	13.6/B	NB left
2. Ashby Rd/La Mesa Ave	TWSC	13.9/B	11.5	14.7/B	12.0/B	WB
3. Ashby Rd/El Cajon Ave	TWSC	13.2/B	10.9/B	13.9/C	11.3/B	WB
4. Ashby Rd/Project Driveway	TWSC	n/a	n/a	11.0/B	10.1/B	EB
5. Ashby Rd/Pine Grove Ave	TWSC	21.5/C	15.3/C	23.7/C	15.9/C	SB left

- 1: Two-Way Stop-Control (TWSC) level-of-service is calculated separately for each minor street movement (or shared movement) as well as major street left turns. The worst intersection approach, or shared movement, on which the reported level-of-service is based is listed in the right most column. Any movement with a volume to capacity ratio (v/c) greater than 1.0 is considered to be level-of-service F.

10 OTHER CONSIDERATIONS

10.1 Project Access

Based on the approximate Project driveway location via parcel 006-020-057, vehicle sight distance has been evaluated. The proposed Project driveway would be located in a speed limit transition area on Ashby Road where the vehicle speed limit increases from 35 mph to 45 mph (north to south direction) and vice-versa south to north. The required vehicle visibility or "corner sight distance" is a function of travel speeds on Ashby Road. Caltrans and AASHTO design guidelines indicate that for appropriate corner sight distance, "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 in the right lane of the main highway". Caltrans and AASHTO design guidelines also indicate that the minimum corner sight distance "shall be equal to the stopping sight distance" where possible.

Caltrans' design standards indicate that these vehicle speeds require a stopping sight distance of 360 feet (corner sight distance of 500 feet) both north and south of the proposed project driveway measured along the travel lanes. Based on field observation by GHD, sight distance both north and south of the proposed project driveway is in excess of 500 feet. Therefore, the sight distance recommendations would be met for the speed limit and observed vehicle speeds.

Because adequate site distance exists at the Project driveway, and there is relatively low peak-hour driveway volume, acceleration and deceleration lanes are not necessary to maintain safe and acceptable traffic operations at the Project driveway.

10.2 Project VMT

Effective July 1, 2020, vehicle miles traveled (VMT) is the primary metric for evaluating transportation impacts under CEQA. The Governor's Office of Research (OPR) has published guidance that a 15% reduction in VMT per capita, relative to the regional average, be used as a significance threshold. The ShastaSim travel demand model was used to evaluate VMT per service population for both the region (Shasta County) and TAZ 822 (which represents the area where the project is located). "Service population" is the combined total of residents and employees within the area being analyzed. The VMT analysis is summarized in **Table 9**. The Project area (TAZ 822) has about 30% less VMT per service population than the Shasta County region.

Table 9. Project VMT Analysis

	Shasta County	Project TAZ
2020 VMT Calculation		
VMT (miles per day)	8,616,037	4,975
Population	191,905	115
Employment	73,585	225
VMT per Service Population	32.45	22.11
2040 VMT Calculation		
VMT (miles per day)	10,587,667	5,610
Population	223,042	103
Employment	84,406	228
VMT per Service Population	34.44	24.61

11. FINDINGS AND RECOMMENDATIONS

11.1 Impacts and Mitigations

The Project area is estimated to have approximately thirty percent less VMT per service population than the Shasta County Region in both 2020 and 2040. Project VMT impacts are **less-than-significant**.

All study intersections are anticipated to operate at level-of-service C or better under both existing and cumulative conditions, and with or without the project. All study intersections are projected to comply with the City's level-of-service C target, specified in the 1999 General Plan. Project level-of-service impacts are **less-than-significant**.

11.2 Findings

The Project is consistent with General Plan land use designation and zoning for the three parcels where it is situated. The Project is anticipated to generate 380 daily trips. 72 AM peak-hour trips (62 inbound, 10 outbound) and 73 PM peak-hour trips (22 inbound, 51 outbound). All project transportation impacts are **less-than-significant**.

The need for deceleration and acceleration lanes at the Project driveway were evaluated. Given the relatively low driveway volumes and the available sight distance at the Project driveway there is no safety or traffic operations need for deceleration or acceleration lanes. The project driveway shall be constructed to City of Shasta Lake standards.

Recommended Conditions of Approval (for Traffic)

In addition to the City's standard language for conditions of approval, language implementing the two recommendations below should be added as conditions of approval.

- **Recommended Condition of Approval 1:** Owner/applicant shall construct the Project driveway to City of Shasta Lake standards.
- **Recommended Condition of Approval 2:** Owner/applicant shall pay all applicable fees.

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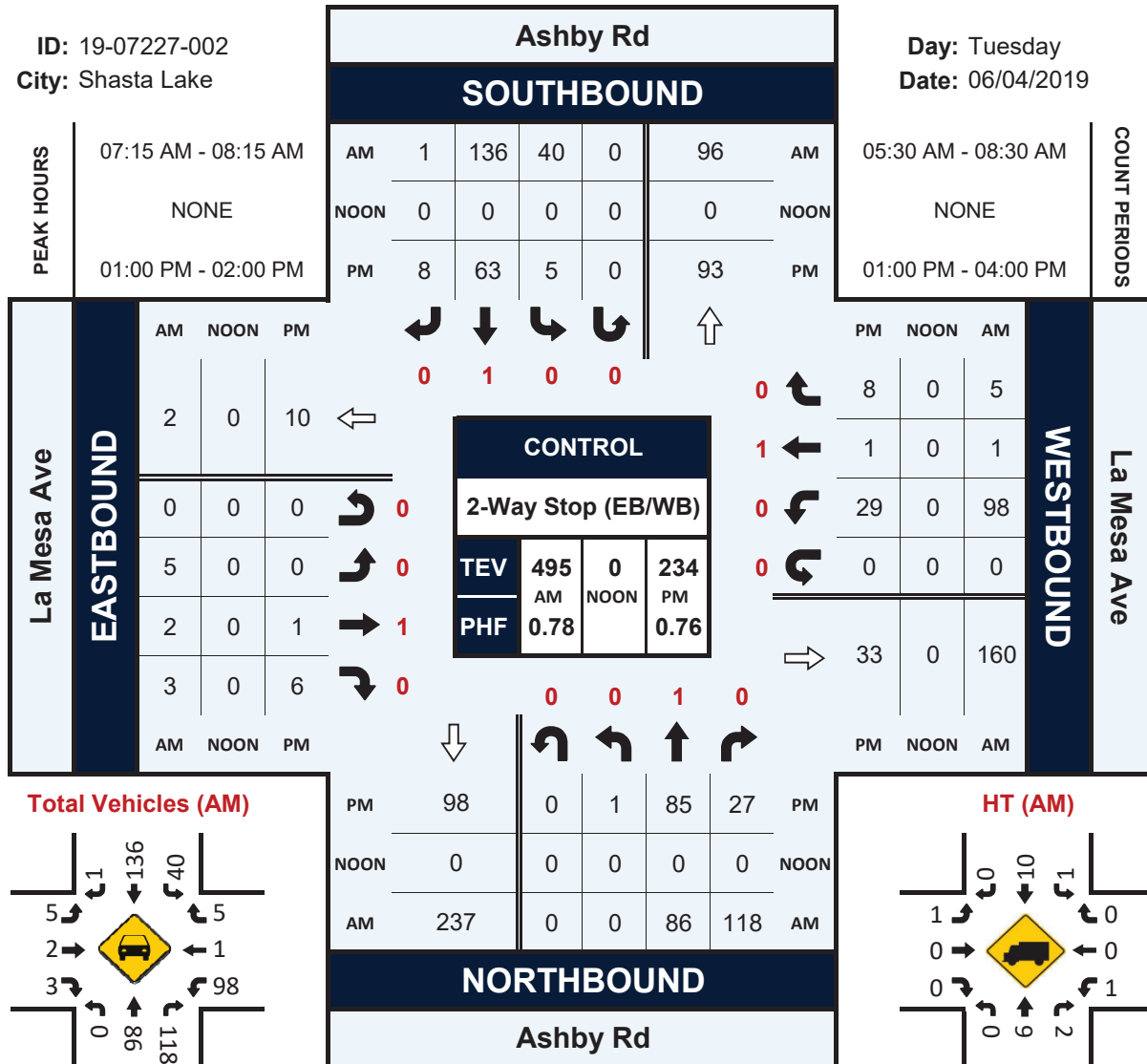
Appendix A: Traffic Counts

Ashby Rd & La Mesa Ave

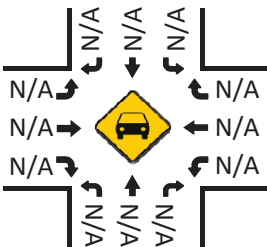
Peak Hour Turning Movement Count

ID: 19-07227-002
City: Shasta Lake

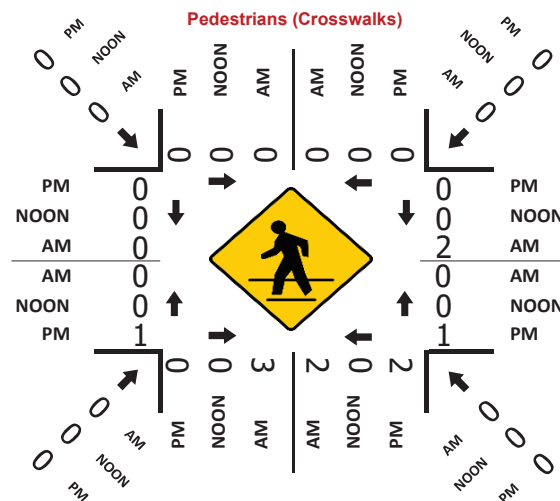
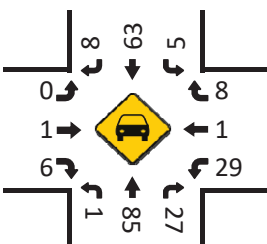
Day: Tuesday
Date: 06/04/2019



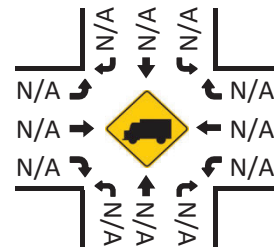
Total Vehicles (Noon)



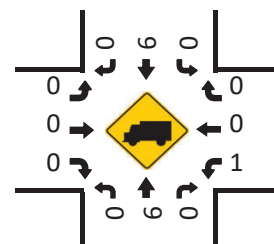
Total Vehicles (PM)



HT (NOON)

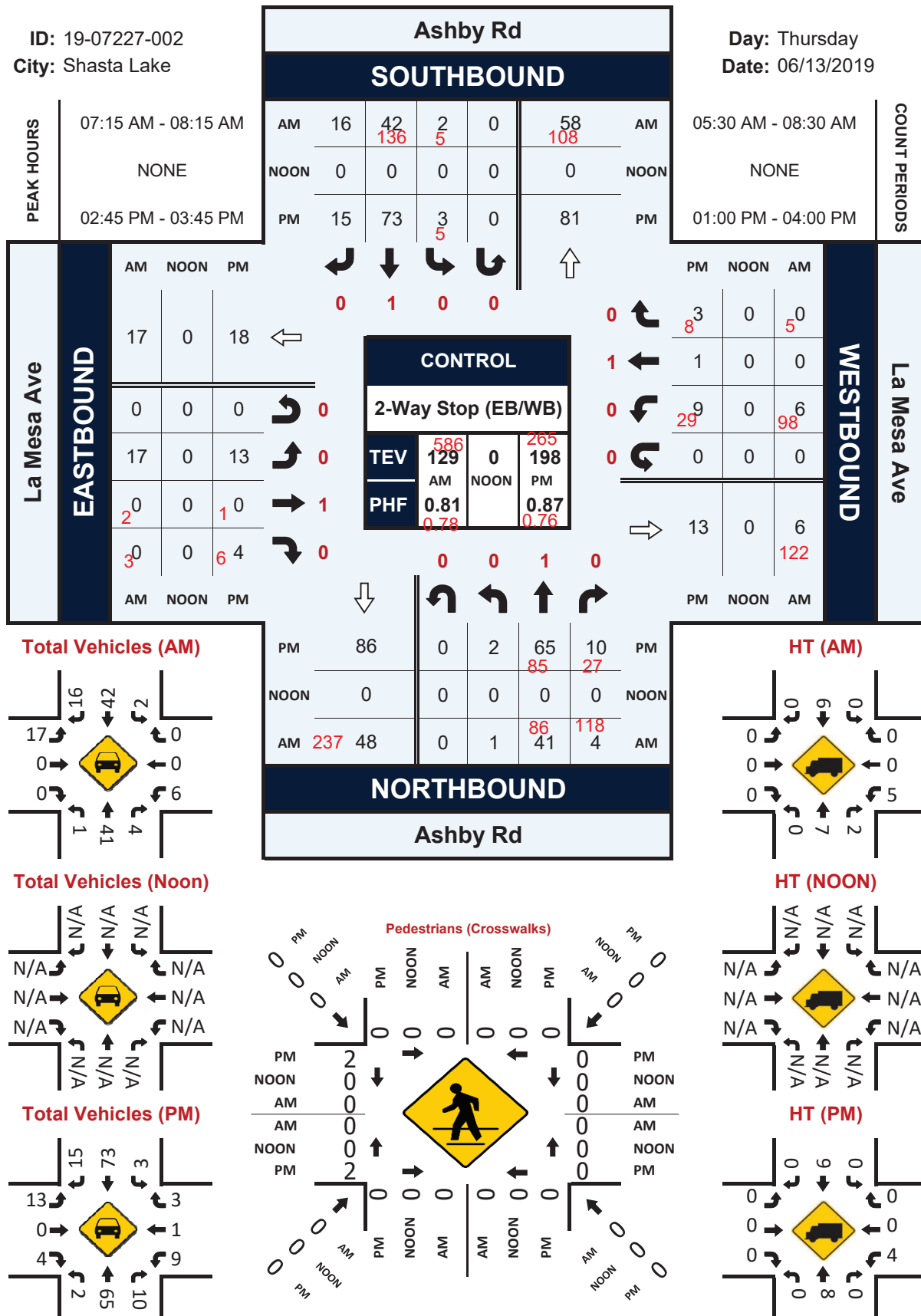


HT (PM)



Note:
Edits in red are adjusted
for school traffic

Day: Thursday
Date: 06/13/2019



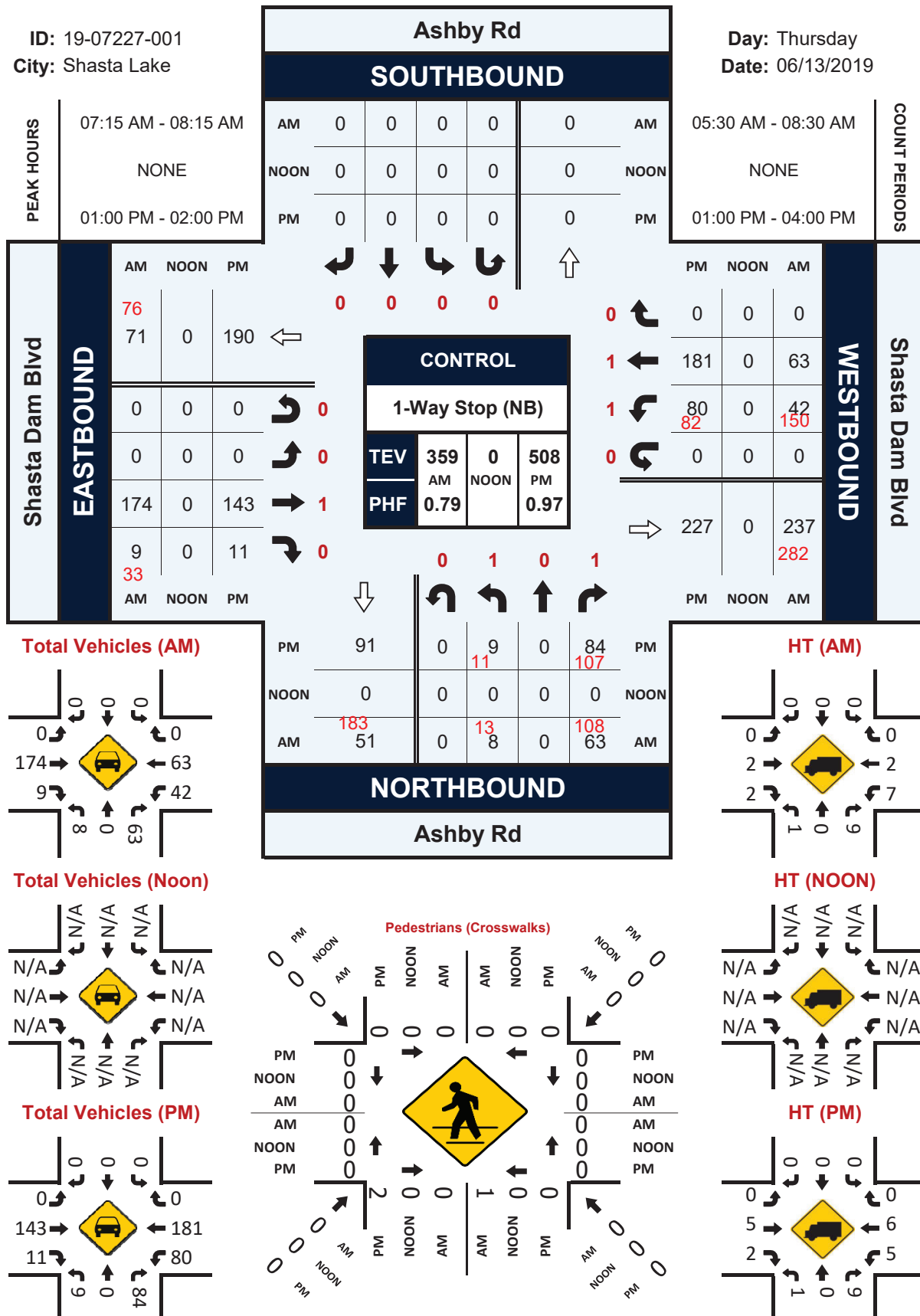
Ashby Rd & Shasta Dam Blvd

Peak Hour Turning Movement Count

Note:
Edits in red are adjusted
for school traffic

ID: 19-07227-001
City: Shasta Lake

Day: Thursday
Date: 06/13/2019



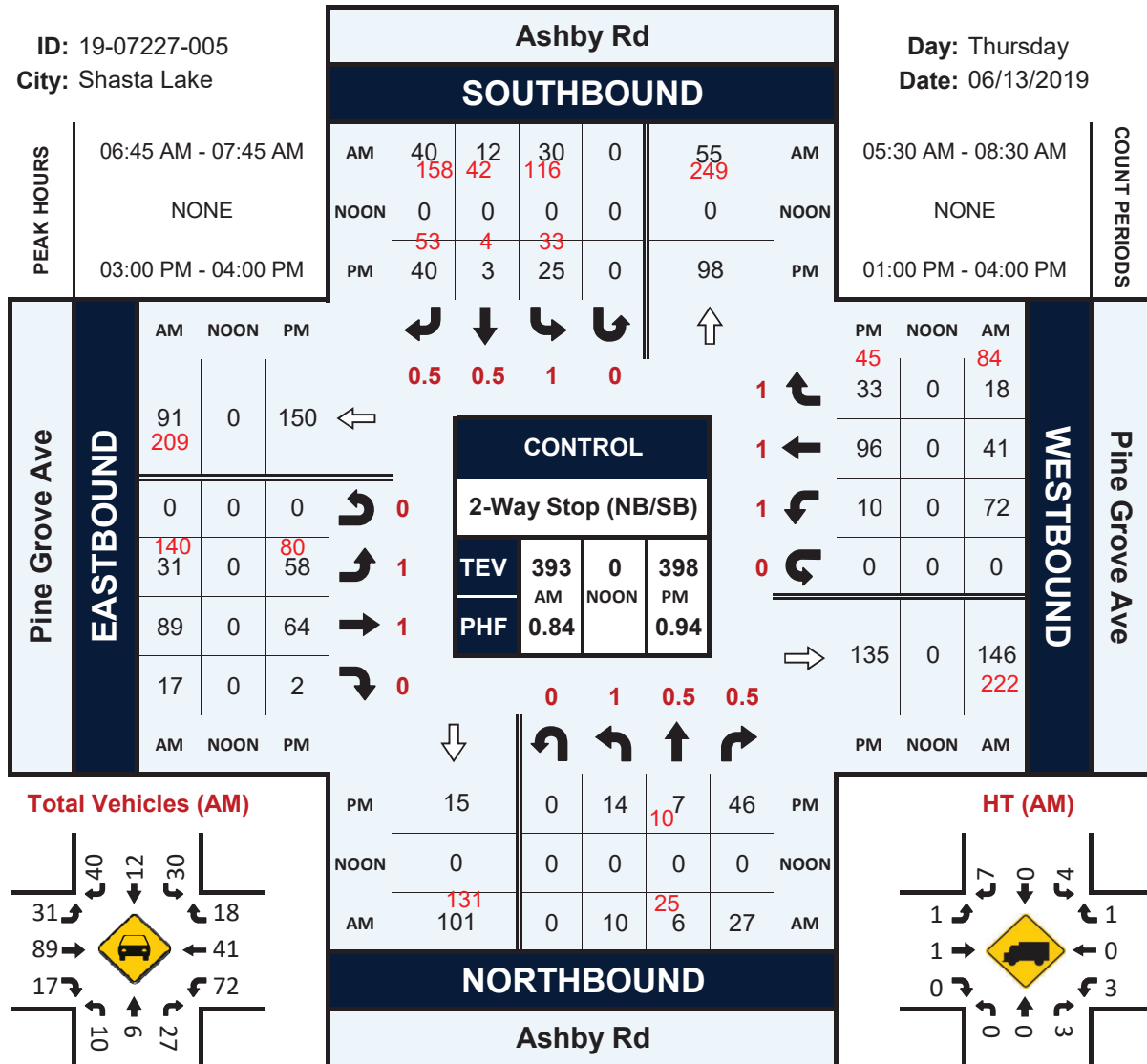
Ashby Rd & Pine Grove Ave

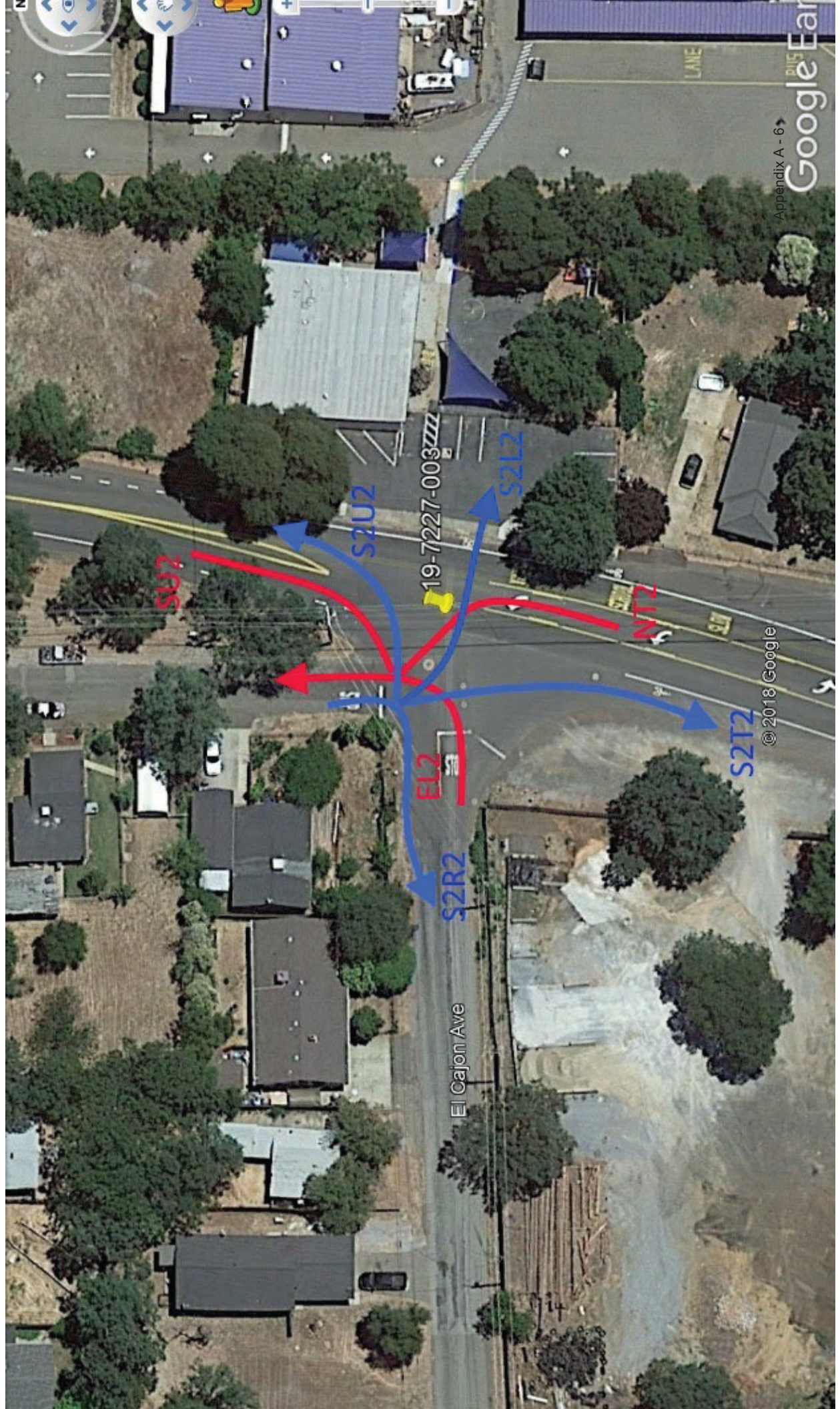
Peak Hour Turning Movement Count

Note:
Edits in red are adjusted
for school traffic

ID: 19-07227-005
City: Shasta Lake

Day: Thursday
Date: 06/13/2019





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Appendix A - 6

Google Earth

National Data & Surveying Services

Intersection Turning Movement Count

Location: Ashby Rd/Los Flores Ave & El Cajon Ave
City: Shasta Lake
Control: 1-Way Stop (EB)

Project ID: 19-07227-003
Date: 6/4/2019

Total

NS/EW Streets:										Ashby Rd/Los Flores Ave										El Cajon Ave										El Cajon Ave																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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6:30 AM	3	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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7:15 AM	1	41	18	0	0	12	50	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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7:45 AM	1	40	36	0	0	36	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
8:00 AM	2	27	2	0	0	5	14	6	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
8:15 AM	2	16	1	0	0	2	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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National Data & Surveying Services

Intersection Turning Movement Count

Location: Ashby Rd/Los Flores Ave & El Cajon Ave
City: Shasta Lake
Control: 1-Way Stop (EB)

Project ID: 19-07227-003
Date: 6/4/2019

Cars

NS/EW Streets:										El Cajon Ave									
Ashby Rd/Los Flores Ave					El Cajon Ave					El Cajon Ave					SOUTHBOUND2				
NORTHBOUND					EASTBOUND					WESTBOUND					SOUTHBOUND2				
1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WR2	WU
6	2	0	0	0	0	8	18	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	7	10	0	0	0	0	0	0	0	0	0	0	0	0
0	4	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0
1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	3	7	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	3	6	1	0	0	9	3	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	2	4	0	2	4	11	2	0	0	2	0	0	0	0	0	0	0	0	0
7:15 AM	1	40	16	0	11	49	2	0	0	2	0	0	0	0	0	0	0	0	0
7:30 AM	1	53	23	0	17	39	3	0	0	3	0	0	0	0	0	0	0	0	0
7:45 AM	0	40	36	0	0	36	44	3	0	0	0	2	0	0	0	0	0	0	0
8:00 AM	1	25	2	0	5	14	3	0	0	1	0	0	0	0	0	0	0	0	0
8:15 AM	0	16	1	0	2	23	0	0	0	1	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :					TOTAL VOLUMES :					TOTAL VOLUMES :					TOTAL VOLUMES :				
APPROACH % :					APPROACH % :					APPROACH % :					APPROACH % :				
PEAK HR :					PEAK HR :					PEAK HR :					PEAK HR :				
PEAK HR VOL :					PEAK HR VOL :					PEAK HR VOL :					PEAK HR VOL :				
PEAK HR FACTOR :					PEAK HR FACTOR :					PEAK HR FACTOR :					PEAK HR FACTOR :				
3	158	77	0	1	69	146	11	0	0	6	0	5	0	0	45	1	28	0	0
0.75	0.745	0.535	0.000	0.250	0.479	0.745	0.917	0.000	0.000	0.500	0.000	0.625	0.000	0.000	0.625	0.250	0.538	0.000	0.000
0.766					0.688					0.578					0.250				

PM										El Cajon Ave									
NORTHBOUND					EASTBOUND					WESTBOUND					SOUTHBOUND2				
1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WR2	WU
1	36	0	0	0	0	28	1	0	0	4	0	1	0	0	0	0	0	0	0
1:15 PM	11	11	0	0	0	15	3	0	0	1	0	0	0	0	0	0	0	0	0
1:30 PM	1	26	0	0	0	21	0	0	0	1	0	3	0	0	0	0	0	0	0
1:45 PM	0	24	0	0	0	25	1	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	1	19	0	0	0	18	0	0	0	2	0	0	0	0	0	0	0	0	0
2:15 PM	4	20	0	0	0	28	1	0	0	2	0	0	0	0	0	0	0	0	0
2:30 PM	0	22	0	0	0	19	1	0	0	0	0	3	0	0	0	0	0	0	0
2:45 PM	0	26	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	2	21	0	0	0	13	1	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	20	0	0	0	17	1	0	0	2	0	0	0	0	0	0	0	0	0
3:30 PM	1	25	0	0	0	10	1	0	0	0	0	4	0	0	0	0	0	0	0
3:45 PM	0	28	0	0	0	17	3	0	0	2	0	2	0	0	0	0	0	0	0
TOTAL VOLUMES :					TOTAL VOLUMES :					TOTAL VOLUMES :					TOTAL VOLUMES :				
APPROACH % :					APPROACH % :					APPROACH % :					APPROACH % :				
PEAK HR :					PEAK HR :					PEAK HR :					PEAK HR :				
PEAK HR VOL :					PEAK HR VOL :					PEAK HR VOL :					PEAK HR VOL :				
PEAK HR FACTOR :					PEAK HR FACTOR :					PEAK HR FACTOR :					PEAK HR FACTOR :				
3	97	0	0	0	0	89	5	0	0	6	0	5	0	0	1	0	1	0	0
0.75	0.674	0.000	0.000	0.000	0.000	0.795	0.417	0.000	0.000	0.375	0.000	0.417	0.000	0.000	0.250	0.000	0.250	0.000	0.000
0.676					0.810					0.550					0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Ashby Rd/Los Flores Ave & El Cajon Ave
City: Shasta Lake
Control: 1-Way Stop (EB)

Project ID: 19-07227-003
Date: 6/4/2019

HT

NS/EW Streets:										Ashby Rd/Los Flores Ave										Ashby Rd/Los Flores Ave										El Cajon Ave										El Cajon Ave																			
AM										NORTHBOUND										SOUTHBOUND										EASTBOUND										WESTBOUND										SOUTHBOUND2									
	NL	NT	NR	NU	NT2		SL	ST	SR	SU	SU2		EL	ET	ER	EU	EL2		WL	WT	WR	WU	WR2		SZU	SZL2	SZT2	SZR2	SZU2		TOTAL																												
5:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0																											
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																											
6:00 AM	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4																											
6:15 AM	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4																											
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5																											
6:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3																											
7:00 AM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2																											
7:15 AM	1	0	0	0	0	0	3	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12																											
7:30 AM	0	1	2	0	0	0	1	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15																											
7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6																											
8:00 AM	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3																											
8:15 AM	2	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7																										
TOTAL VOLUMES :		NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2		EL	ET	ER	EU	EL2		WL	WT	WR	WU	WR2		SZU	SZL2	SZT2	SZR2	SZU2		TOTAL																												
APPROACH %s :		61.11%	22.22%	16.67%	0.00%	0.00%	14.81%	14.81%	14.81%	70.37%	0.00%	0.00%	52.17%	0.00%	47.83%	0.00%	0.00%	0.00%		0	0	0	0	0	0	0	0	0	0	0	0	68																											
PEAK HR :		2	3	3	0	0	1	2	8	0	0	0	8	0	4	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	31																											
PEAK HR FACTOR :		0.500	0.375	0.375	0.000	0.000	0.250	0.500	0.458	0.000	0.000	0.000	0.500	0.000	0.500	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.517																												

PM										NORTHBOUND										SOUTHBOUND										EASTBOUND										WESTBOUND										SOUTHBOUND2									
	NL	NT	NR	NU	NT2		SL	ST	SR	SU	SU2		EL	ET	ER	EU	EL2		WL	WT	WR	WU	WR2		SZU	SZL2	SZT2	SZR2	SZU2		TOTAL																												
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1																											
1:15 PM	2	2	0	0	0	0	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11																											
1:30 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2																											
1:45 PM	2	3	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9																											
2:00 PM	1	0	0	0	0	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8																											
2:15 PM	3	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10																											
2:30 PM	0	1	0	0	0	0	0	3	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7																											
2:45 PM	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4																											
3:00 PM	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5																											
3:15 PM	1	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7																											
3:30 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6																											
3:45 PM	0	2	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5																											
TOTAL VOLUMES :		NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2		EL	ET	ER	EU	EL2		WL	WT	WR	WU	WR2		SZU	SZL2	SZT2	SZR2	SZU2		TOTAL																												
APPROACH %s :		52.63%	47.37%	0.00%	0.00%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%	0.00%	86.21%	0.00%	13.79%	0.00%	0.00%	0.00%		0	0	0	0	0	0	0	0	0	0	0	0	75																											
PEAK HR :		6	5	0	0	0	0	4	3	0	0	0	4	0	1	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	23																											
PEAK HR FACTOR :		0.75	0.417	0.000	0.000	0.000	0.000	0.333	0.375	0.000	0.000	0.000	0.500	0.000	0.250	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.523																												

National Data & Surveying Services

Location: Ashby Rd/Los Flores Ave & El Cajon Ave
City: Shasta Lake
Control: 1-Way Stop (EB)

Project ID: 19-07227-003
Date: 6/4/2019

[illegible]

National Data & Surveying Services

Intersection Turning Movement Count

Location: Ashby Rd/Los Flores Ave & El Cajon Ave

City: Shasta Lake

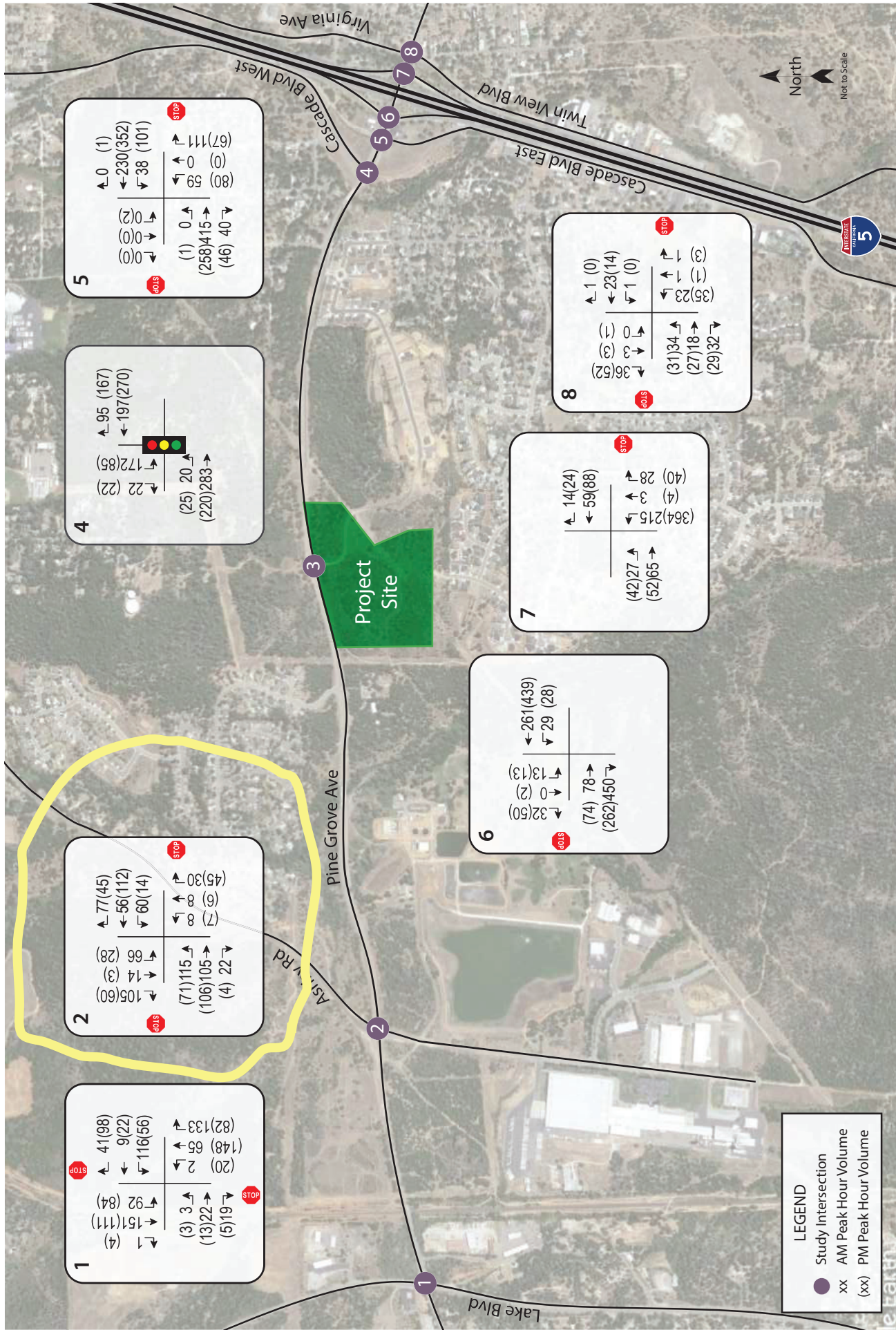
Project ID: 19-07227-003

Date: 6/4/2019

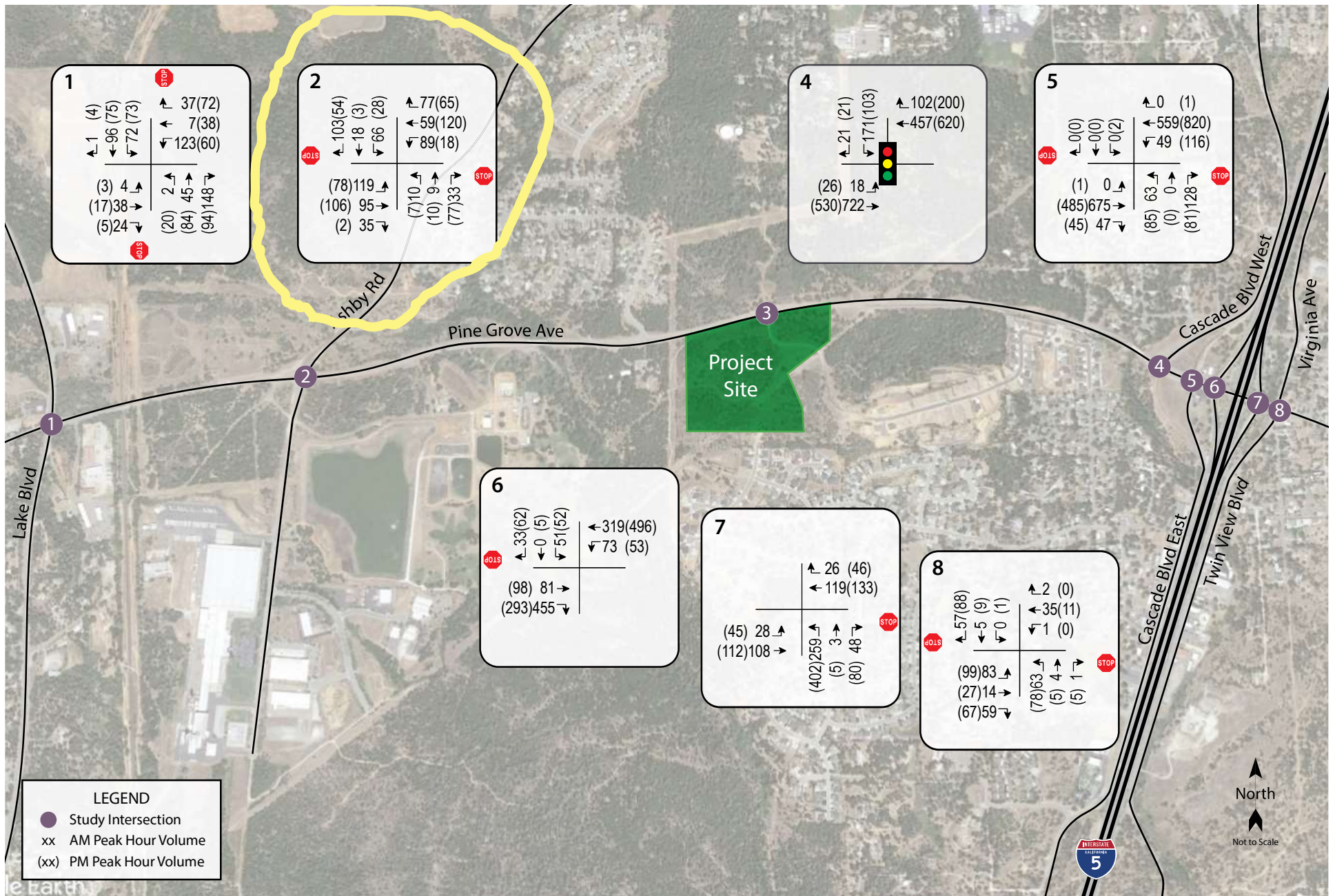
Pedestrians (Crosswalks)

NS/EW Streets:	Ashby Rd/Los Flores Ave		Ashby Rd/Los Flores Ave		El Cajon Ave		El Cajon Ave	
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
5:30 AM	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	1	0	0	0
6:45 AM	0	0	0	0	0	0	0	0
7:00 AM	2	0	0	0	0	0	0	0
7:15 AM	2	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	1	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	1	0	0	0
8:15 AM	0	0	0	0	0	1	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB
APPROACH %'s :	4	0	0	0	3	1	0	0
	100.00%	0.00%			75.00%	25.00%		
PEAK HR :	07:15 AM - 08:15 AM							
PEAK HR VOL :	2	0	0	0	2	0	0	0
PEAK HR FACTOR :	0.250	0.250			0.500	0.500		
								TOTAL
								8
								TOTAL
								4
								0.500

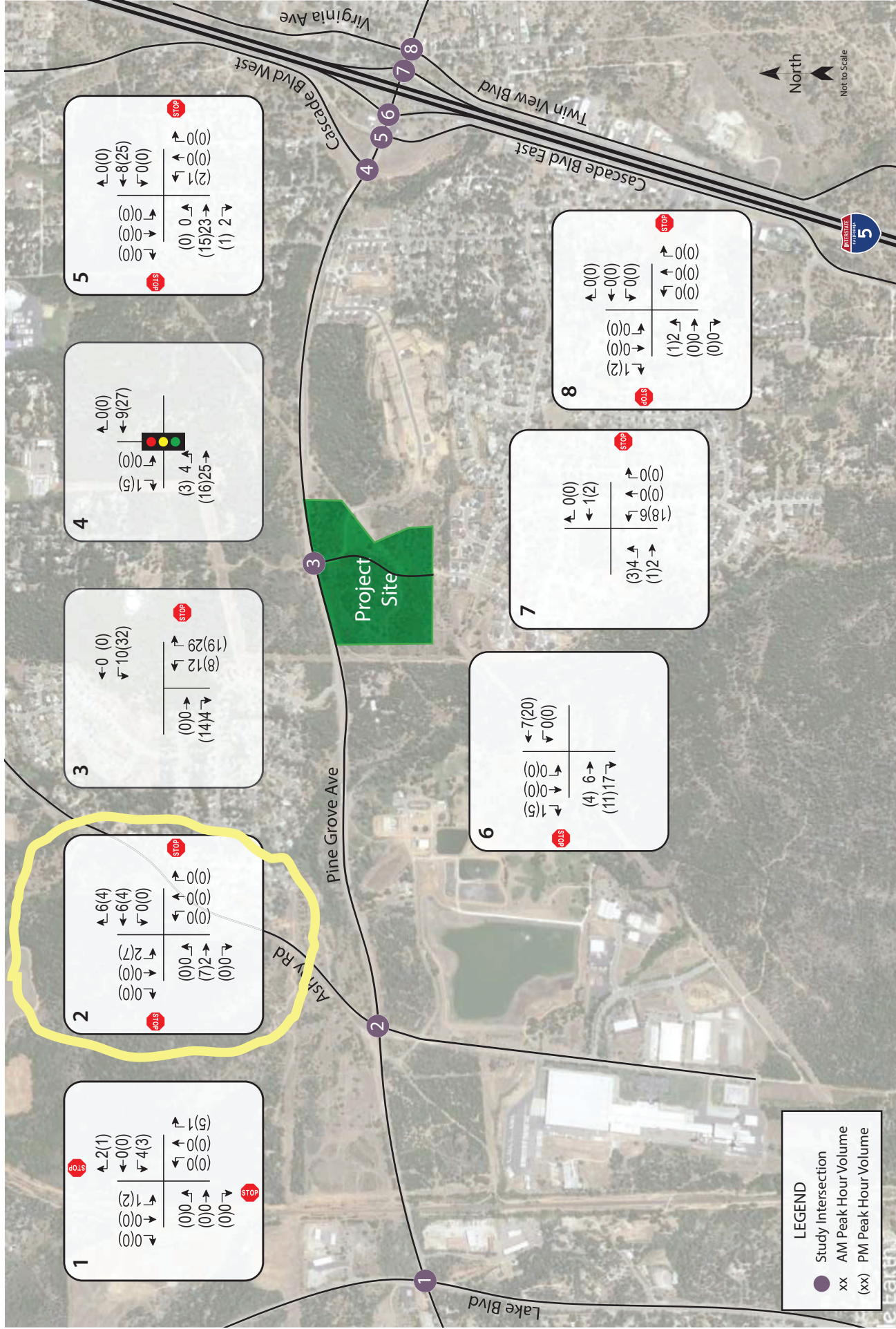
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
1:00 PM	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	1	0	1	0
1:30 PM	0	0	0	0	0	1	0	0
1:45 PM	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	2	0	0	0
2:15 PM	0	0	0	0	0	1	0	0
2:30 PM	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	2	2
3:30 PM	0	0	0	0	0	1	0	0
3:45 PM	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB
APPROACH %'s :	0	0	0	0	3	3	3	2
					50.00%	50.00%	60.00%	40.00%
PEAK HR :	01:00 PM - 02:00 PM							
PEAK HR VOL :	0	0	0	0	1	1	1	0
PEAK HR FACTOR :					0.250	0.250	0.250	0.250
					0.500	0.500	0.250	0.250
								TOTAL
								11
								TOTAL
								3
								0.375



Traffic Impact Study for the Windsor Estates 3 Project
Figure 3 – Baseline Traffic Volumes

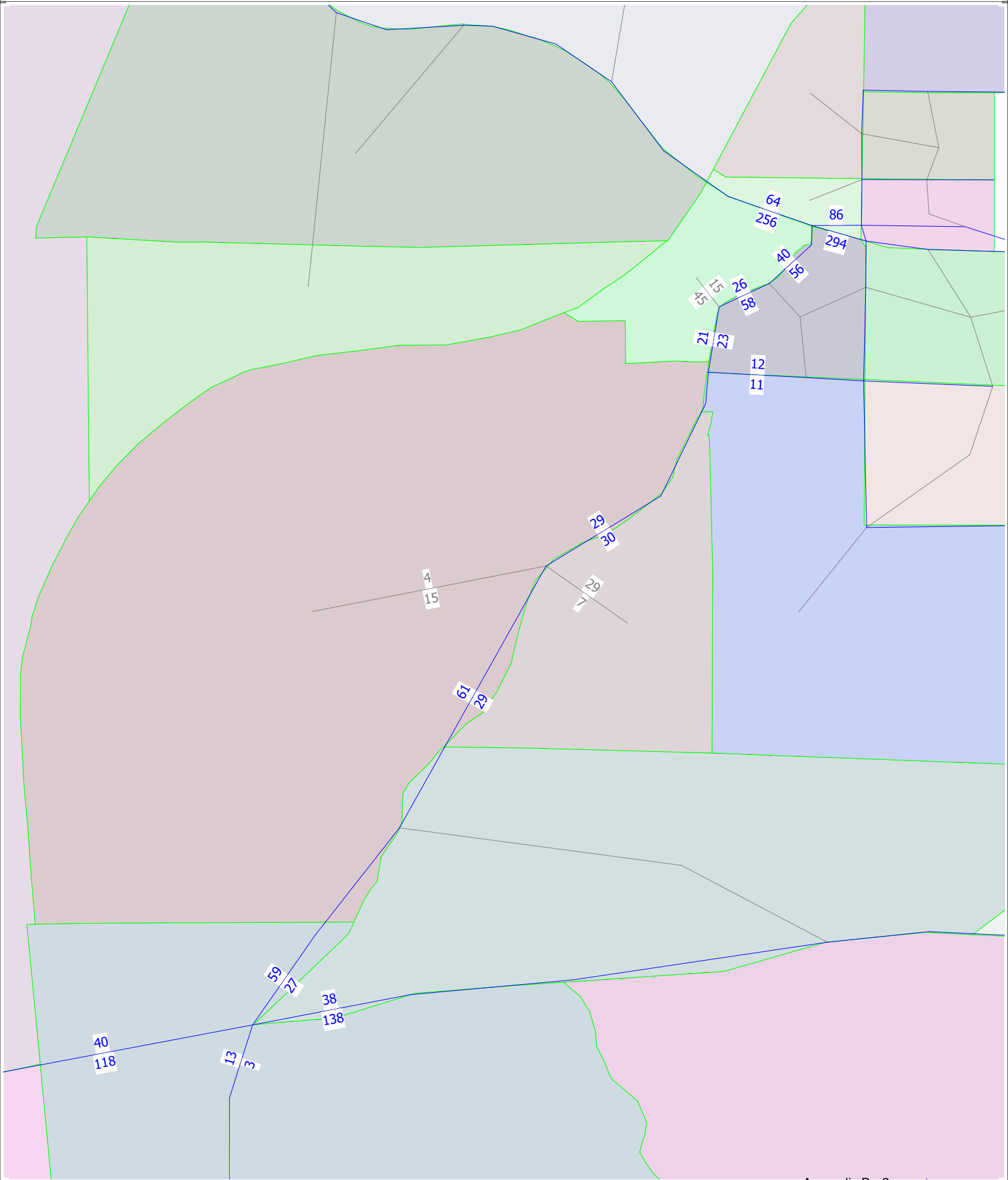


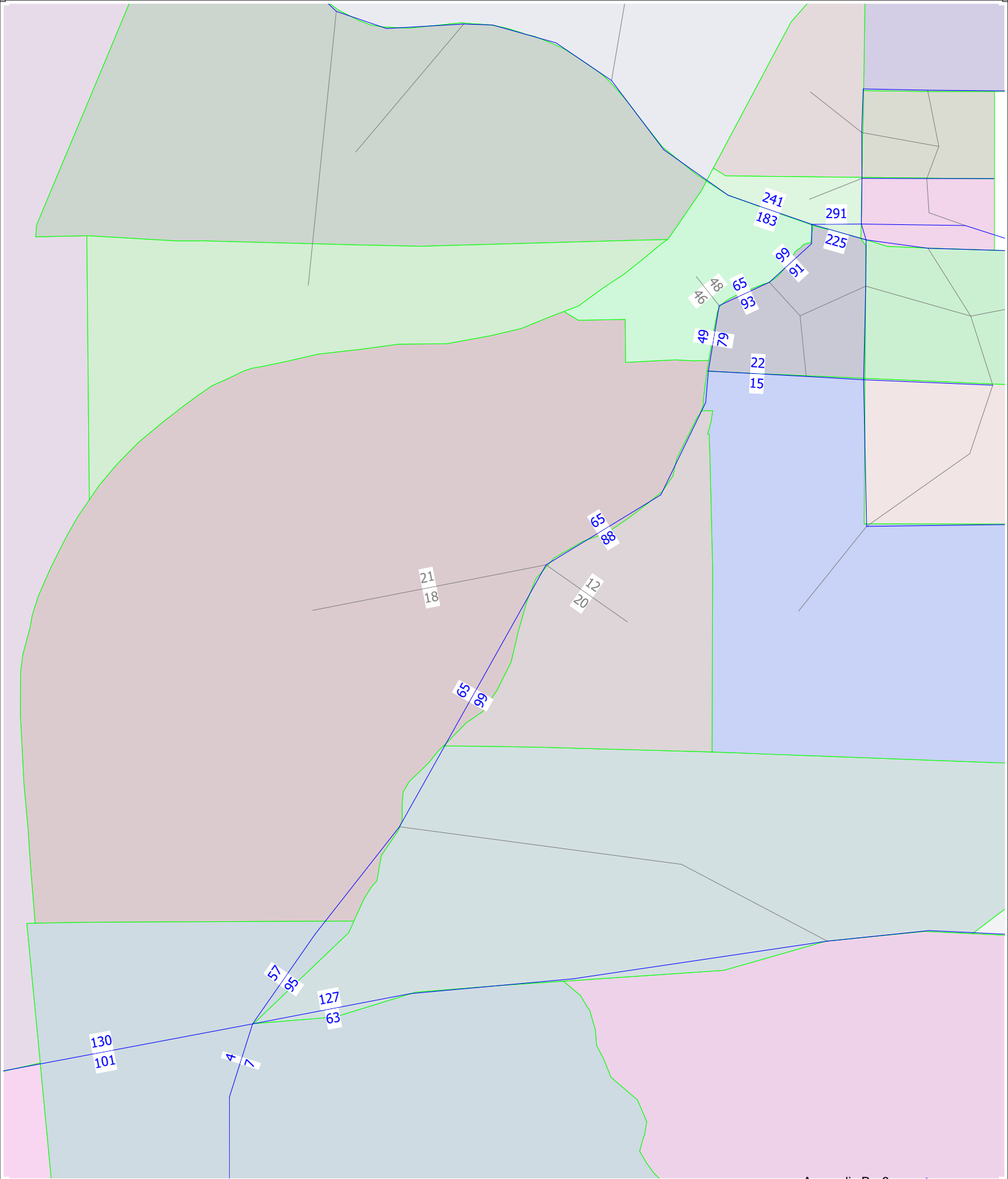
Traffic Impact Study for the Windsor Estates 3 Project
Figure 4 – Future Traffic Volumes

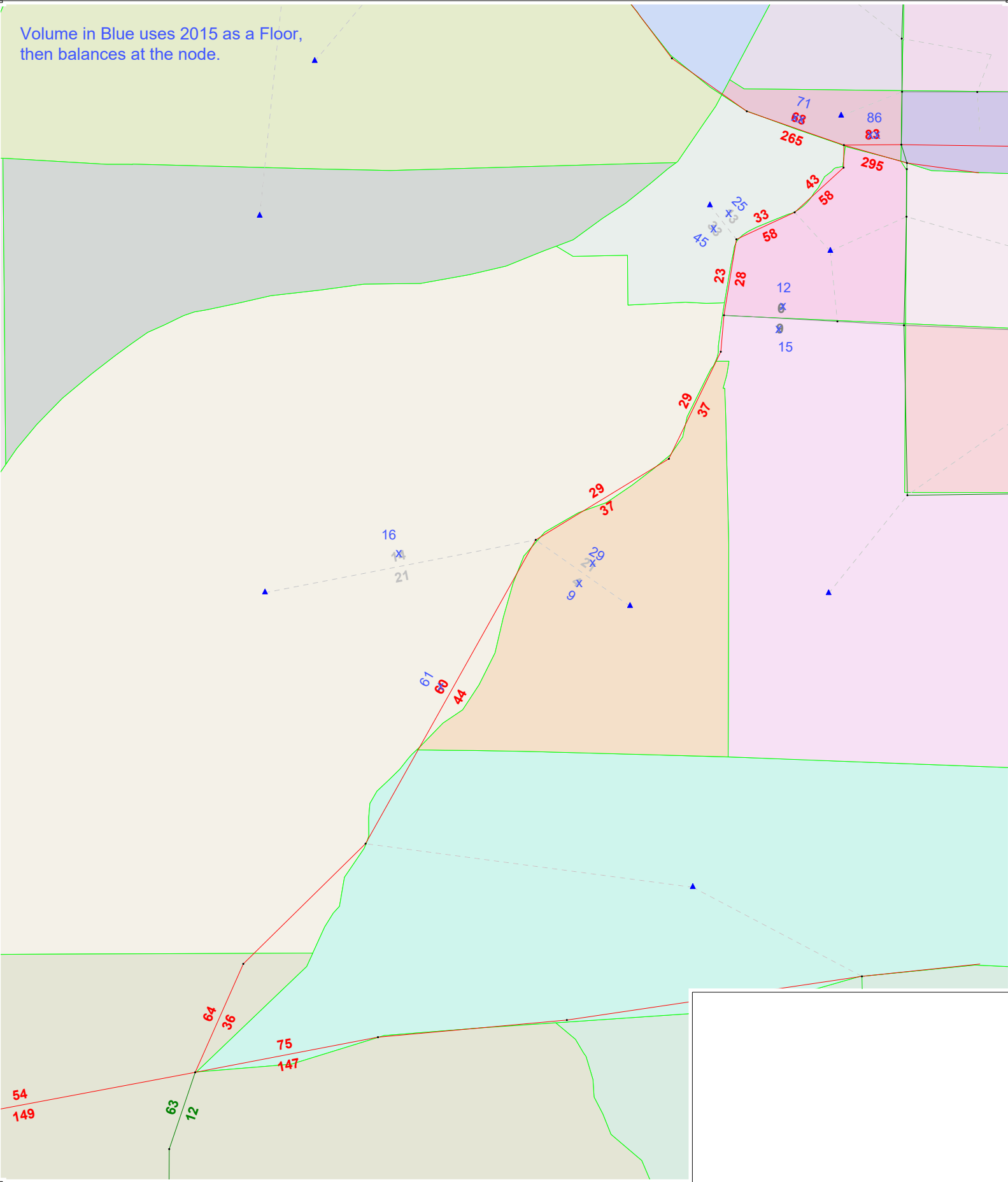


Traffic Impact Study for the Windsor Estates 3 Project
Figure 6 – Project Traffic Volumes

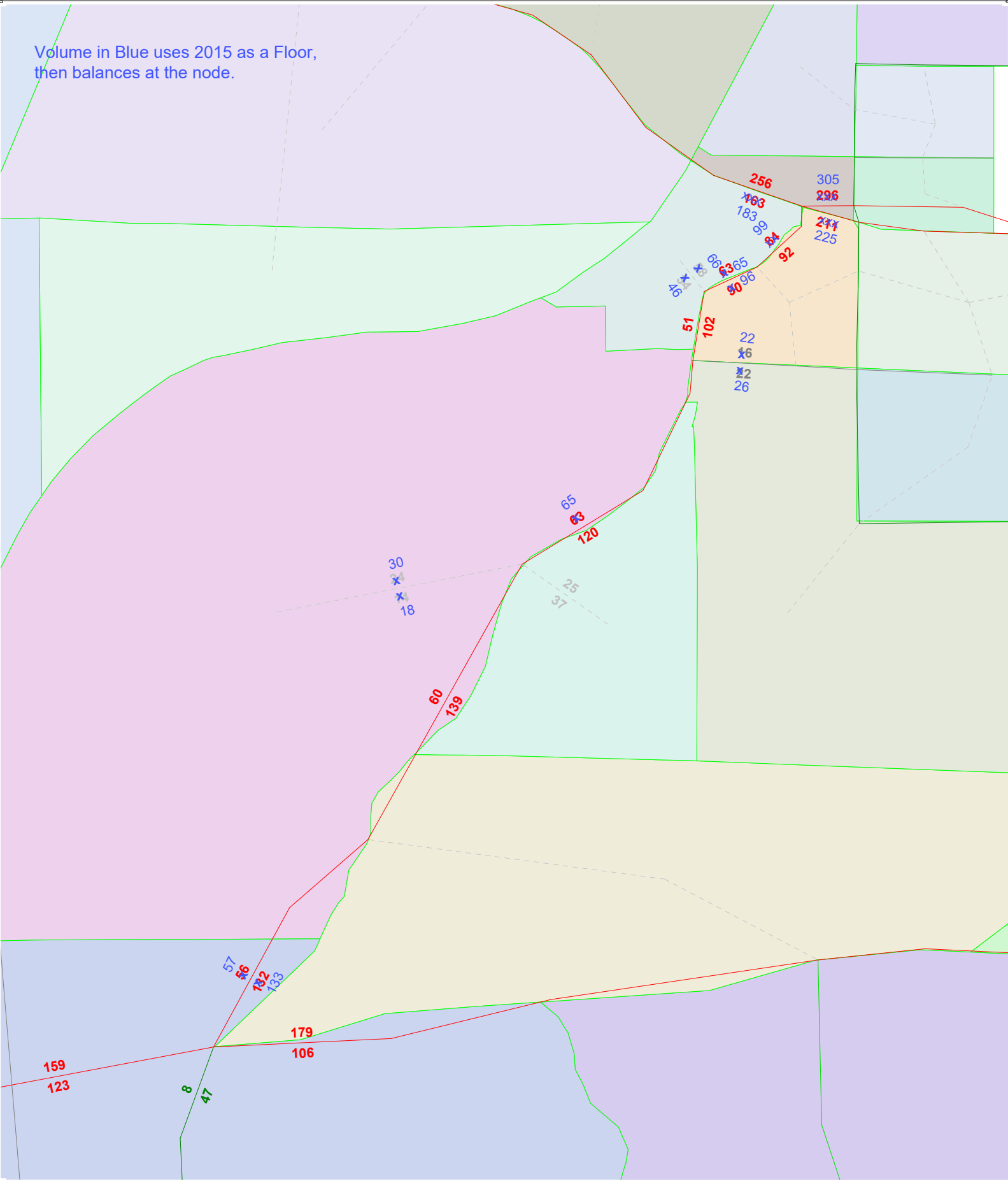
Appendix B: Travel Demand Model ravel Demand Model Plots







Volume in Blue uses 2015 as a Floor,
then balances at the node.



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Appendix C: NCHRP 255 Calculations

2040 AM TURNS Report

```
+-----+
| Input Data File Report          07:57p  Jul 10, 2019 |
+-----+
```

```
!
! Turns Volume File
!
(node 5 (name #5 Asshby/Pine Grove)
(links )
(volume (nb 10 25 27)(eb 140 89 17)(sb 106 42 158)(wb 72 41 84))
(forecastvols (nb 181 0 71)(eb 223 0 277)(sb 258 0 321)(wb 241 0 234))
(settings counts nofloor)
)
(node 3 (name #3 Asshby/El Cajone)
(links )
(volume (nb 6 163 80)(eb 14 0 11)(sb 70 148 19)(wb 45 1 28))
(forecastvols (nb 204 0 264)(eb 38 0 31)(sb 212 0 237)(wb 152 0 74))
(settings counts nofloor)
)
(node 2 (name Asshby/La Mesa)
(links )
(volume (nb 1 86 118)(eb 17 2 3)(sb 2 136 16)(wb 98 0 5))
(forecastvols (nb 237 0 212)(eb 17 0 22)(sb 113 0 159)(wb 129 0 103))
(settings counts nofloor)
)
(node 1 (name Asshby/Shast Dam Blvd)
(links )
(volume (nb 13 0 108)(eb 0 174 33)(sb 0 0 0)(wb 150 63 0))
(forecastvols (nb 186 0 123)(eb 83 0 216)(sb 0 0 0)(wb 283 0 213))
(settings counts nofloor)
)
(node      (name )
(links )
(volume (nb 0 0 0)(eb 0 0 0)(sb 0 0 0)(wb 0 0 0))
(forecastvols (nb 0 0 0)(eb 0 0 0)(sb 0 0 0)(wb 0 0 0))
(settings counts nofloor)
)
```

```
+-----+
| Turning Movement Volumes Report      07:57p  Jul 10, 2019 |
+-----+
```

Counts Data

	Southbound			Westbound			Northbound			Eastbound		
Node	R	T	L	R	T	L	R	T	L	R	T	L
5	158	42	106	84	41	72	27	25	10	17	89	140
3	19	148	70	28	1	45	80	163	6	11	0	14
2	16	136	2	5	0	98	118	86	1	3	2	17
1	0	0	0	0	63	150	108	0	13	33	174	0

0 0 0 0 0 0 0 0 0 0 0 0

+-----+
 | Furness Adjusted Turning Volumes 07:57p Jul 10, 2019 |
 +-----+

	Southbound			Westbound			Northbound			Eastbound		
Node	R	T	L	R	T	L	R	T	L	R	T	L
5	163	53	105	84	47	102	32	26	12	25	104	147
3	26	144	66	26	1	45	85	168	9	14	0	16
2	16	139	3	6	0	95	123	88	0	2	2	17
1	0	0	0	0	66	147	106	0	16	38	176	0
	0	0	0	0	0	0	0	0	0	0	0	0

+-----+
 | Counts Data Approach & Departure Volumes 07:57p Jul 10, 2019 |
 +-----+

	North Leg		East Leg		South Leg		West Leg	
Node	App	Dep	App	Dep	App	Dep	App	Dep
5	306	249	197	222	62	131	246	209
3	237	205	74	150	249	204	25	26
2	154	108	103	122	205	237	22	17
1	0	0	213	282	121	183	207	76
0	0	0	0	0	0	0	0	0

+-----+
 | Model Future Year Approach & Departure Volumes 07:57p Jul 10, 2019 |
 +-----+

	North Leg		East Leg		South Leg		West Leg	
Node	App	Dep	App	Dep	App	Dep	App	Dep
5	321	258	234	241	71	181	277	223
3	237	212	74	152	264	204	31	38
2	159	113	103	129	212	237	22	17
1	0	0	213	283	123	186	216	83
0	0	0	0	0	0	0	0	0

+-----+
 | Computed Approach & Departure Volumes 07:57p Jul 10, 2019 |
 +-----+

	North Leg		East Leg		South Leg		West Leg	
Node	App	Dep	App	Dep	App	Dep	App	Dep
5	321	258	234	241	71	181	277	223
3	237	212	74	152	264	204	31	38
2	159	113	103	129	212	237	22	17
1	0	0	213	283	123	186	216	83
0	0	0	0	0	0	0	0	0

Project Nodes				
Node	North Link	East Link	South Link	West Link
5				
3				
2				
1				

2040 PM TURNS Report

+-----+	
Input Data File Report	10:19p Jul 10, 2019
+-----+	

!
! Turns Volume File
!
(node 5 (name #5 Asshby/Pine Grove)
 (links)
 (volume (nb 14 10 46)(eb 80 54 2)(sb 33 4 53)(wb 10 96 45))
 (forecastvols (nb 20 0 110)(eb 192 0 168)(sb 173 0 90)(wb 186 0 203))
 (settings counts nofloor)
)
(node 3 (name #3 Asshby/El Cajone)
 (links)
 (volume (nb 9 106 0)(eb 10 1 6)(sb 8 100 0)(wb 1 0 1))
 (forecastvols (nb 102 0 155)(eb 26 0 17)(sb 149 0 108)(wb 18 0 15))
 (settings counts nofloor)
)
(node 2 (name Asshby/La Mesa)
 (links)
 (volume (nb 2 85 27)(eb 13 1 6)(sb 15 73 5)(wb 29 1 8))
 (forecastvols (nb 108 0 146)(eb 18 0 20)(sb 129 0 95)(wb 44 0 38))
 (settings counts nofloor)
)
(node 1 (name Asshby/Shast Dam Blvd)
 (links)
 (volume (nb 11 0 107)(eb 0 143 11)(sb 0 0 0)(wb 82 181 0))
 (forecastvols (nb 93 0 119)(eb 207 0 154)(sb 0 0 0)(wb 250 0 277))
 (settings counts nofloor)
)
(node (name)
 (links)
 (volume (nb 0 0 0)(eb 0 0 0)(sb 0 0 0)(wb 0 0 0))
 (forecastvols (nb 0 0 0)(eb 0 0 0)(sb 0 0 0)(wb 0 0 0))
 (settings counts nofloor)
)

+-----+	
Turning Movement Volumes Report	10:19p Jul 10, 2019
+-----+	

Counts Data

Southbound				Westbound				Northbound				Eastbound			
Node	R	T	L	R	T	L	R	T	L	R	T	L	R	T	L
+-----+-----+-----+-----															
5	53	4	33	45	96	10	46	10	14	2	54	80			
3	0	100	8	1	0	1	0	106	9	6	1	10			
2	5	73	15	8	1	29	27	85	2	6	1	13			
1	0	0	0	0	181	82	107	0	11	11	143	0			

0 0 0 0 0 0 0 0 0 0 0 0

+-----+
 | Furness Adjusted Turning Volumes 10:19p Jul 10, 2019 |
 +-----+

	Southbound				Westbound				Northbound				Eastbound		
Node	R	T	L		R	T	L		R	T	L		R	T	L
5	48	3	37		64	124	13		76	14	18		2	71	94
3	0	91	16		8	0	6		0	129	26		4	1	10
2	10	72	12		7	2	28		30	109	5		6	0	12
1	0	0	0		0	195	82		107	0	11		10	142	0
	0	0	0		0	0	0		0	0	0		0	0	0

+-----+
 | Counts Data Approach & Departure Volumes 10:19p Jul 10, 2019 |
 +-----+

	North Leg			East Leg			South Leg			West Leg	
Node	App	Dep		App	Dep		App	Dep		App	Dep
5	90	135		151	133		70	16		136	163
3	108	117		2	9		115	107		17	9
2	93	106		38	43		114	108		20	8
1	0	0		263	250		118	93		154	192
0	0	0		0	0		0	0		0	0

+-----+
 | Model Future Year Approach & Departure Volumes 10:19p Jul 10, 2019 |
 +-----+

	North Leg			East Leg			South Leg			West Leg	
Node	App	Dep		App	Dep		App	Dep		App	Dep
5	90	173		203	186		110	20		168	192
3	108	149		15	18		155	102		17	26
2	95	129		38	44		146	108		20	18
1	0	0		277	250		119	93		154	207
0	0	0		0	0		0	0		0	0

+-----+
 | Computed Approach & Departure Volumes 10:19p Jul 10, 2019 |
 +-----+

	North Leg			East Leg			South Leg			West Leg	
Node	App	Dep		App	Dep		App	Dep		App	Dep
5	90	173		203	186		110	20		168	192
3	108	149		15	18		155	102		17	26
2	95	129		38	44		146	108		20	18
1	0	0		277	250		119	93		154	207
0	0	0		0	0		0	0		0	0

Project Nodes				
Node	North Link	East Link	South Link	West Link
-----+-----+-----+-----				
5				
3				
2				
1				

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Appendix D: Level-of-Service CalculationsTraffic Counts

Intersection Level Of Service Report

Intersection 1: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 16.6
 Level Of Service: C
 Volume to Capacity (v/c): 0.049

Intersection Setup

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
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	1	0	0	0	1	0
Pocket Length [ft]	60.00	100.00	100.00	100.00	185.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
Base Volume Input [veh/h]	13	108	174	33	150	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	13	108	174	33	150	63
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	34	55	10	47	20
Total Analysis Volume [veh/h]	16	137	220	42	190	80
Pedestrian Volume [ped/h]	5		5		5	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.18	0.00	0.00	0.15	0.00
d_M, Delay for Movement [s/veh]	16.63	10.76	0.00	0.00	8.41	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.65	0.00	0.00	0.54	0.00
95th-Percentile Queue Length [ft/ln]	3.86	16.32	0.00	0.00	13.44	0.00
d_A, Approach Delay [s/veh]	11.38		0.00		5.92	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	4.87					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 2: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 13.7
 Level Of Service: B
 Volume to Capacity (v/c): 0.233

Intersection Setup

Name	SB Ashby			Ashby								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SB Ashby			Ashby								
Base Volume Input [veh/h]	1	86	118	2	136	16	17	2	3	98	0	5
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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]	1	86	118	2	136	16	17	2	3	98	0	5
Peak Hour Factor	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	28	38	1	44	5	5	1	1	31	0	2
Total Analysis Volume [veh/h]	1	110	151	3	174	21	22	3	4	126	0	6
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.23	0.00	0.01
d_M, Delay for Movement [s/veh]	7.73	0.00	0.00	7.89	0.00	0.00	11.98	12.89	9.74	13.70	13.98	11.46
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.01	0.16	0.16	0.16	0.93	0.93	0.93
95th-Percentile Queue Length [ft/ln]	0.06	0.06	0.06	0.18	0.18	0.18	4.08	4.08	4.08	23.27	23.27	23.27
d_A, Approach Delay [s/veh]	0.03			0.12			11.76			13.60		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	3.49											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 3: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 14.6
 Level Of Service: B
 Volume to Capacity (v/c): 0.048

Intersection Setup

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left2	Left	Right	Thru	Right	Right2	Left	Right	Right2	Left2	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Base Volume Input [veh/h]	0	14	9	218	19	0	0	2	0	6	1	191
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	14	9	218	19	0	0	2	0	6	1	191
Peak Hour Factor	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	5	3	74	6	0	0	1	0	2	0	65
Total Analysis Volume [veh/h]	0	19	12	295	26	0	0	3	0	8	1	258
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Stop	Free	Stop	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	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	14.58	14.58	10.68	0.00	0.00	0.00	14.50	10.43	10.45	8.06	8.06	0.00
Movement LOS	B	B	B	A	A	A	B	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.21	0.21	0.21	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	5.19	5.19	5.19	0.00	0.00	0.00	0.34	0.34	0.34	0.57	0.57	0.57
d_A, Approach Delay [s/veh]	13.07			0.00			10.43			0.27		
Approach LOS	B			A			B			A		
d_I, Intersection Delay [s/veh]	0.82											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 4: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 0.0
 Level Of Service: A
 Volume to Capacity (v/c): 0.003

Intersection Setup

Name	Ashby		Ashby		Proj Drwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Ashby		Ashby		Proj Drwy	
Base Volume Input [veh/h]	0	249	204	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	0	249	204	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	68	55	0	0	0
Total Analysis Volume [veh/h]	0	271	222	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.77	0.00	0.00	0.00	11.91	9.51
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		10.71	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Signal Warrants Report For Intersection 1: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	213	207	121
2	204	199	116
3	200	195	114
4	170	166	97
5	162	157	92
6	145	141	82
7	134	130	76
8	128	124	73
9	102	99	58
10	96	93	54
11	96	93	54
12	92	89	52
13	83	81	47
14	77	75	44
15	77	75	44
16	75	72	42
17	43	41	24
18	23	23	13
19	21	21	12
20	9	8	5
21	6	6	4
22	6	6	4
23	4	4	2
24	4	4	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	420	2	121	No	No	No	Yes	No	No	No	No	No	No
2	3	403	2	116	No	No	No	Yes	No	No	No	No	No	No
3	3	395	2	114	No	No	No	Yes	No	No	No	No	No	No
4	3	336	2	97	No	No	No	No	No	No	No	No	No	No
5	3	319	2	92	No	No	No	No	No	No	No	No	No	No
6	3	286	2	82	No	No	No	No	No	No	No	No	No	No
7	3	264	2	76	No	No	No	No	No	No	No	No	No	No
8	3	252	2	73	No	No	No	No	No	No	No	No	No	No
9	3	201	2	58	No	No	No	No	No	No	No	No	No	No
10	3	189	2	54	No	No	No	No	No	No	No	No	No	No
11	3	189	2	54	No	No	No	No	No	No	No	No	No	No
12	3	181	2	52	No	No	No	No	No	No	No	No	No	No
13	3	164	2	47	No	No	No	No	No	No	No	No	No	No
14	3	152	2	44	No	No	No	No	No	No	No	No	No	No
15	3	152	2	44	No	No	No	No	No	No	No	No	No	No
16	3	147	2	42	No	No	No	No	No	No	No	No	No	No
17	3	84	2	24	No	No	No	No	No	No	No	No	No	No
18	3	46	2	13	No	No	No	No	No	No	No	No	No	No
19	3	42	2	12	No	No	No	No	No	No	No	No	No	No
20	3	17	2	5	No	No	No	No	No	No	No	No	No	No
21	3	12	2	4	No	No	No	No	No	No	No	No	No	No
22	3	12	2	4	No	No	No	No	No	No	No	No	No	No
23	3	8	2	2	No	No	No	No	No	No	No	No	No	No
24	3	8	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.4
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:22
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	121
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	541
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Signal Warrants Report For Intersection 2: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	154	205	103	22
2	148	197	99	21
3	145	193	97	21
4	123	164	82	18
5	117	156	78	17
6	105	139	70	15
7	97	129	65	14
8	92	123	62	13
9	74	98	49	11
10	69	92	46	10
11	69	92	46	10
12	66	88	44	9
13	60	80	40	9
14	55	74	37	8
15	55	74	37	8
16	54	72	36	8
17	31	41	21	4
18	17	23	11	2
19	15	21	10	2
20	6	8	4	1
21	5	6	3	1
22	5	6	3	1
23	3	4	2	0
24	3	4	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	359	2	125	No	No	No	Yes	No	No	No	No	No	No
2	2	345	2	120	No	No	No	Yes	No	No	No	No	No	No
3	2	338	2	118	No	No	No	Yes	No	No	No	No	No	No
4	2	287	2	100	No	No	No	No	No	No	No	No	No	No
5	2	273	2	95	No	No	No	No	No	No	No	No	No	No
6	2	244	2	85	No	No	No	No	No	No	No	No	No	No
7	2	226	2	79	No	No	No	No	No	No	No	No	No	No
8	2	215	2	75	No	No	No	No	No	No	No	No	No	No
9	2	172	2	60	No	No	No	No	No	No	No	No	No	No
10	2	161	2	56	No	No	No	No	No	No	No	No	No	No
11	2	161	2	56	No	No	No	No	No	No	No	No	No	No
12	2	154	2	53	No	No	No	No	No	No	No	No	No	No
13	2	140	2	49	No	No	No	No	No	No	No	No	No	No
14	2	129	2	45	No	No	No	No	No	No	No	No	No	No
15	2	129	2	45	No	No	No	No	No	No	No	No	No	No
16	2	126	2	44	No	No	No	No	No	No	No	No	No	No
17	2	72	2	25	No	No	No	No	No	No	No	No	No	No
18	2	40	2	13	No	No	No	No	No	No	No	No	No	No
19	2	36	2	12	No	No	No	No	No	No	No	No	No	No
20	2	14	2	5	No	No	No	No	No	No	No	No	No	No
21	2	11	2	4	No	No	No	No	No	No	No	No	No	No
22	2	11	2	4	No	No	No	No	No	No	No	No	No	No
23	2	7	2	2	No	No	No	No	No	No	No	No	No	No
24	2	7	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.6	11.8
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:23	0:04
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	103	22
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	484	484
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 3: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, E
Minor Approaches	W, S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	E	W	S
1	237	198	2	23
2	228	190	2	22
3	223	186	2	22
4	190	158	2	18
5	180	150	2	17
6	161	135	1	16
7	149	125	1	14
8	142	119	1	14
9	114	95	1	11
10	107	89	1	10
11	107	89	1	10
12	102	85	1	10
13	92	77	1	9
14	85	71	1	8
15	85	71	1	8
16	83	69	1	8
17	47	40	0	5
18	26	22	0	3
19	24	20	0	2
20	9	8	0	1
21	7	6	0	1
22	7	6	0	1
23	5	4	0	0
24	5	4	0	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	435	2	25	No	No	No	No	No	No	No	No	No	No
2	2	418	2	24	No	No	No	No	No	No	No	No	No	No
3	2	409	2	24	No	No	No	No	No	No	No	No	No	No
4	2	348	2	20	No	No	No	No	No	No	No	No	No	No
5	2	330	2	19	No	No	No	No	No	No	No	No	No	No
6	2	296	2	17	No	No	No	No	No	No	No	No	No	No
7	2	274	2	15	No	No	No	No	No	No	No	No	No	No
8	2	261	2	15	No	No	No	No	No	No	No	No	No	No
9	2	209	2	12	No	No	No	No	No	No	No	No	No	No
10	2	196	2	11	No	No	No	No	No	No	No	No	No	No
11	2	196	2	11	No	No	No	No	No	No	No	No	No	No
12	2	187	2	11	No	No	No	No	No	No	No	No	No	No
13	2	169	2	10	No	No	No	No	No	No	No	No	No	No
14	2	156	2	9	No	No	No	No	No	No	No	No	No	No
15	2	156	2	9	No	No	No	No	No	No	No	No	No	No
16	2	152	2	9	No	No	No	No	No	No	No	No	No	No
17	2	87	2	5	No	No	No	No	No	No	No	No	No	No
18	2	48	2	3	No	No	No	No	No	No	No	No	No	No
19	2	44	2	2	No	No	No	No	No	No	No	No	No	No
20	2	17	2	1	No	No	No	No	No	No	No	No	No	No
21	2	13	2	1	No	No	No	No	No	No	No	No	No	No
22	2	13	2	1	No	No	No	No	No	No	No	No	No	No
23	2	9	2	0	No	No	No	No	No	No	No	No	No	No
24	2	9	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.4	13.1
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00	0:05
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	2	23
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	460	460
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 4: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	204	249	0
2	196	239	0
3	192	234	0
4	163	199	0
5	155	189	0
6	139	169	0
7	129	157	0
8	122	149	0
9	98	120	0
10	92	112	0
11	92	112	0
12	88	107	0
13	80	97	0
14	73	90	0
15	73	90	0
16	71	87	0
17	41	50	0
18	22	27	0
19	20	25	0
20	8	10	0
21	6	7	0
22	6	7	0
23	4	5	0
24	4	5	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	453	1	0	No	No	No	No	No	No	No	No	No	No
2	2	435	1	0	No	No	No	No	No	No	No	No	No	No
3	2	426	1	0	No	No	No	No	No	No	No	No	No	No
4	2	362	1	0	No	No	No	No	No	No	No	No	No	No
5	2	344	1	0	No	No	No	No	No	No	No	No	No	No
6	2	308	1	0	No	No	No	No	No	No	No	No	No	No
7	2	286	1	0	No	No	No	No	No	No	No	No	No	No
8	2	271	1	0	No	No	No	No	No	No	No	No	No	No
9	2	218	1	0	No	No	No	No	No	No	No	No	No	No
10	2	204	1	0	No	No	No	No	No	No	No	No	No	No
11	2	204	1	0	No	No	No	No	No	No	No	No	No	No
12	2	195	1	0	No	No	No	No	No	No	No	No	No	No
13	2	177	1	0	No	No	No	No	No	No	No	No	No	No
14	2	163	1	0	No	No	No	No	No	No	No	No	No	No
15	2	163	1	0	No	No	No	No	No	No	No	No	No	No
16	2	158	1	0	No	No	No	No	No	No	No	No	No	No
17	2	91	1	0	No	No	No	No	No	No	No	No	No	No
18	2	49	1	0	No	No	No	No	No	No	No	No	No	No
19	2	45	1	0	No	No	No	No	No	No	No	No	No	No
20	2	18	1	0	No	No	No	No	No	No	No	No	No	No
21	2	13	1	0	No	No	No	No	No	No	No	No	No	No
22	2	13	1	0	No	No	No	No	No	No	No	No	No	No
23	2	9	1	0	No	No	No	No	No	No	No	No	No	No
24	2	9	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	0
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	453
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Intersection Level Of Service Report

Intersection 1: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 12.9
 Level Of Service: B
 Volume to Capacity (v/c): 0.024

Intersection Setup

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
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	1	0	0	0	1	0
Pocket Length [ft]	60.00	100.00	100.00	100.00	185.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
Base Volume Input [veh/h]	11	107	143	11	82	181
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	11	107	143	11	82	181
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	28	37	3	21	47
Total Analysis Volume [veh/h]	11	110	147	11	85	187
Pedestrian Volume [ped/h]	5		5		5	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.13	0.00	0.00	0.06	0.00
d_M, Delay for Movement [s/veh]	12.89	9.84	0.00	0.00	7.82	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.07	0.44	0.00	0.00	0.20	0.00
95th-Percentile Queue Length [ft/ln]	1.81	11.04	0.00	0.00	4.99	0.00
d_A, Approach Delay [s/veh]	10.12		0.00		2.44	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.43					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 2: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 11.4
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	SB Ashby			Ashby								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SB Ashby			Ashby								
Base Volume Input [veh/h]	2	88	27	5	73	15	13	1	6	29	1	8
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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]	2	88	27	5	73	15	13	1	6	29	1	8
Peak Hour Factor	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	1	29	9	2	24	5	4	0	2	10	0	3
Total Analysis Volume [veh/h]	3	116	36	7	96	20	17	1	8	38	1	11
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.01	0.06	0.00	0.01
d_M, Delay for Movement [s/veh]	7.56	0.00	0.00	7.64	0.00	0.00	10.81	11.22	9.17	10.99	11.37	9.53
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.02	0.02	0.02	0.12	0.12	0.12	0.24	0.24	0.24
95th-Percentile Queue Length [ft/ln]	0.16	0.16	0.16	0.39	0.39	0.39	2.88	2.88	2.88	5.90	5.90	5.90
d_A, Approach Delay [s/veh]	0.15			0.43			10.32			10.68		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.48											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 3: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 10.9
 Level Of Service: B
 Volume to Capacity (v/c): 0.021

Intersection Setup

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left2	Left	Right	Thru	Right	Right2	Left	Right	Right2	Left2	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Base Volume Input [veh/h]	0	10	6	100	8	0	0	1	0	9	0	107
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	10	6	100	8	0	0	1	0	9	0	107
Peak Hour Factor	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	3	2	32	3	0	0	0	0	3	0	34
Total Analysis Volume [veh/h]	0	13	8	127	10	0	0	1	0	11	0	135
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Stop	Free	Stop	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	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	10.91	10.91	9.27	0.00	0.00	0.00	10.93	9.25	9.26	7.62	7.62	0.00
Movement LOS	B	B	A	A	A	A	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	2.31	2.31	2.31	0.00	0.00	0.00	0.09	0.09	0.09	0.60	0.60	0.60
d_A, Approach Delay [s/veh]	10.28			0.00			9.25			0.57		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	1.01											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 4: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 0.0
 Level Of Service: A
 Volume to Capacity (v/c): 0.001

Intersection Setup

Name	Ashby		Ashby		Proj Drwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Ashby		Ashby		Proj Drwy	
Base Volume Input [veh/h]	0	115	112	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	0	115	112	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	31	30	0	0	0
Total Analysis Volume [veh/h]	0	125	122	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.54	0.00	0.00	0.00	9.97	8.96
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.47	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Signal Warrants Report For Intersection 1: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	263	154	118
2	252	148	113
3	247	145	111
4	210	123	94
5	200	117	90
6	179	105	80
7	166	97	74
8	158	92	71
9	126	74	57
10	118	69	53
11	118	69	53
12	113	66	51
13	103	60	46
14	95	55	42
15	95	55	42
16	92	54	41
17	53	31	24
18	29	17	13
19	26	15	12
20	11	6	5
21	8	5	4
22	8	5	4
23	5	3	2
24	5	3	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	417	2	118	No	No	No	Yes	No	No	No	No	No	No
2	3	400	2	113	No	No	No	Yes	No	No	No	No	No	No
3	3	392	2	111	No	No	No	No	No	No	No	No	No	No
4	3	333	2	94	No	No	No	No	No	No	No	No	No	No
5	3	317	2	90	No	No	No	No	No	No	No	No	No	No
6	3	284	2	80	No	No	No	No	No	No	No	No	No	No
7	3	263	2	74	No	No	No	No	No	No	No	No	No	No
8	3	250	2	71	No	No	No	No	No	No	No	No	No	No
9	3	200	2	57	No	No	No	No	No	No	No	No	No	No
10	3	187	2	53	No	No	No	No	No	No	No	No	No	No
11	3	187	2	53	No	No	No	No	No	No	No	No	No	No
12	3	179	2	51	No	No	No	No	No	No	No	No	No	No
13	3	163	2	46	No	No	No	No	No	No	No	No	No	No
14	3	150	2	42	No	No	No	No	No	No	No	No	No	No
15	3	150	2	42	No	No	No	No	No	No	No	No	No	No
16	3	146	2	41	No	No	No	No	No	No	No	No	No	No
17	3	84	2	24	No	No	No	No	No	No	No	No	No	No
18	3	46	2	13	No	No	No	No	No	No	No	No	No	No
19	3	41	2	12	No	No	No	No	No	No	No	No	No	No
20	3	17	2	5	No	No	No	No	No	No	No	No	No	No
21	3	13	2	4	No	No	No	No	No	No	No	No	No	No
22	3	13	2	4	No	No	No	No	No	No	No	No	No	No
23	3	8	2	2	No	No	No	No	No	No	No	No	No	No
24	3	8	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	2	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:19
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	118
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	535
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Signal Warrants Report For Intersection 2: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	93	117	38	20
2	89	112	36	19
3	87	110	36	19
4	74	94	30	16
5	71	89	29	15
6	63	80	26	14
7	59	74	24	13
8	56	70	23	12
9	45	56	18	10
10	42	53	17	9
11	42	53	17	9
12	40	50	16	9
13	36	46	15	8
14	33	42	14	7
15	33	42	14	7
16	33	41	13	7
17	19	23	8	4
18	10	13	4	2
19	9	12	4	2
20	4	5	2	1
21	3	4	1	1
22	3	4	1	1
23	2	2	1	0
24	2	2	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	210	2	58	No	No	No	No	No	No	No	No	No	No
2	2	201	2	55	No	No	No	No	No	No	No	No	No	No
3	2	197	2	55	No	No	No	No	No	No	No	No	No	No
4	2	168	2	46	No	No	No	No	No	No	No	No	No	No
5	2	160	2	44	No	No	No	No	No	No	No	No	No	No
6	2	143	2	40	No	No	No	No	No	No	No	No	No	No
7	2	133	2	37	No	No	No	No	No	No	No	No	No	No
8	2	126	2	35	No	No	No	No	No	No	No	No	No	No
9	2	101	2	28	No	No	No	No	No	No	No	No	No	No
10	2	95	2	26	No	No	No	No	No	No	No	No	No	No
11	2	95	2	26	No	No	No	No	No	No	No	No	No	No
12	2	90	2	25	No	No	No	No	No	No	No	No	No	No
13	2	82	2	23	No	No	No	No	No	No	No	No	No	No
14	2	75	2	21	No	No	No	No	No	No	No	No	No	No
15	2	75	2	21	No	No	No	No	No	No	No	No	No	No
16	2	74	2	20	No	No	No	No	No	No	No	No	No	No
17	2	42	2	12	No	No	No	No	No	No	No	No	No	No
18	2	23	2	6	No	No	No	No	No	No	No	No	No	No
19	2	21	2	6	No	No	No	No	No	No	No	No	No	No
20	2	9	2	3	No	No	No	No	No	No	No	No	No	No
21	2	7	2	2	No	No	No	No	No	No	No	No	No	No
22	2	7	2	2	No	No	No	No	No	No	No	No	No	No
23	2	4	2	1	No	No	No	No	No	No	No	No	No	No
24	2	4	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.7	10.3
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:06	0:03
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	38	20
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	268	268
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 3: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, E
Minor Approaches	W, S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	E	W	S
1	108	116	1	16
2	104	111	1	15
3	102	109	1	15
4	86	93	1	13
5	82	88	1	12
6	73	79	1	11
7	68	73	1	10
8	65	70	1	10
9	52	56	0	8
10	49	52	0	7
11	49	52	0	7
12	46	50	0	7
13	42	45	0	6
14	39	42	0	6
15	39	42	0	6
16	38	41	0	6
17	22	23	0	3
18	12	13	0	2
19	11	12	0	2
20	4	5	0	1
21	3	3	0	0
22	3	3	0	0
23	2	2	0	0
24	2	2	0	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	224	2	17	No	No	No	No	No	No	No	No	No	No
2	2	215	2	16	No	No	No	No	No	No	No	No	No	No
3	2	211	2	16	No	No	No	No	No	No	No	No	No	No
4	2	179	2	14	No	No	No	No	No	No	No	No	No	No
5	2	170	2	13	No	No	No	No	No	No	No	No	No	No
6	2	152	2	12	No	No	No	No	No	No	No	No	No	No
7	2	141	2	11	No	No	No	No	No	No	No	No	No	No
8	2	135	2	11	No	No	No	No	No	No	No	No	No	No
9	2	108	2	8	No	No	No	No	No	No	No	No	No	No
10	2	101	2	7	No	No	No	No	No	No	No	No	No	No
11	2	101	2	7	No	No	No	No	No	No	No	No	No	No
12	2	96	2	7	No	No	No	No	No	No	No	No	No	No
13	2	87	2	6	No	No	No	No	No	No	No	No	No	No
14	2	81	2	6	No	No	No	No	No	No	No	No	No	No
15	2	81	2	6	No	No	No	No	No	No	No	No	No	No
16	2	79	2	6	No	No	No	No	No	No	No	No	No	No
17	2	45	2	3	No	No	No	No	No	No	No	No	No	No
18	2	25	2	2	No	No	No	No	No	No	No	No	No	No
19	2	23	2	2	No	No	No	No	No	No	No	No	No	No
20	2	9	2	1	No	No	No	No	No	No	No	No	No	No
21	2	6	2	0	No	No	No	No	No	No	No	No	No	No
22	2	6	2	0	No	No	No	No	No	No	No	No	No	No
23	2	4	2	0	No	No	No	No	No	No	No	No	No	No
24	2	4	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.3	10.3
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00	0:02
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	1	16
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	241	241
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 4: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	112	115	0
2	108	110	0
3	105	108	0
4	90	92	0
5	85	87	0
6	76	78	0
7	71	72	0
8	67	69	0
9	54	55	0
10	50	52	0
11	50	52	0
12	48	49	0
13	44	45	0
14	40	41	0
15	40	41	0
16	39	40	0
17	22	23	0
18	12	13	0
19	11	12	0
20	4	5	0
21	3	3	0
22	3	3	0
23	2	2	0
24	2	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	227	1	0	No	No	No	No	No	No	No	No	No	No
2	2	218	1	0	No	No	No	No	No	No	No	No	No	No
3	2	213	1	0	No	No	No	No	No	No	No	No	No	No
4	2	182	1	0	No	No	No	No	No	No	No	No	No	No
5	2	172	1	0	No	No	No	No	No	No	No	No	No	No
6	2	154	1	0	No	No	No	No	No	No	No	No	No	No
7	2	143	1	0	No	No	No	No	No	No	No	No	No	No
8	2	136	1	0	No	No	No	No	No	No	No	No	No	No
9	2	109	1	0	No	No	No	No	No	No	No	No	No	No
10	2	102	1	0	No	No	No	No	No	No	No	No	No	No
11	2	102	1	0	No	No	No	No	No	No	No	No	No	No
12	2	97	1	0	No	No	No	No	No	No	No	No	No	No
13	2	89	1	0	No	No	No	No	No	No	No	No	No	No
14	2	81	1	0	No	No	No	No	No	No	No	No	No	No
15	2	81	1	0	No	No	No	No	No	No	No	No	No	No
16	2	79	1	0	No	No	No	No	No	No	No	No	No	No
17	2	45	1	0	No	No	No	No	No	No	No	No	No	No
18	2	25	1	0	No	No	No	No	No	No	No	No	No	No
19	2	23	1	0	No	No	No	No	No	No	No	No	No	No
20	2	9	1	0	No	No	No	No	No	No	No	No	No	No
21	2	6	1	0	No	No	No	No	No	No	No	No	No	No
22	2	6	1	0	No	No	No	No	No	No	No	No	No	No
23	2	4	1	0	No	No	No	No	No	No	No	No	No	No
24	2	4	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.5
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	0
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	227
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Intersection Level Of Service Report

Intersection 1: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 18.5
 Level Of Service: C
 Volume to Capacity (v/c): 0.063

Intersection Setup

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
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	1	0	0	0	1	0
Pocket Length [ft]	60.00	100.00	100.00	100.00	185.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
Base Volume Input [veh/h]	13	108	174	33	150	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	3	0	3	28	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	111	174	36	178	63
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	35	55	11	56	20
Total Analysis Volume [veh/h]	18	141	220	46	225	80
Pedestrian Volume [ped/h]	5		5		5	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.19	0.00	0.00	0.18	0.00
d_M, Delay for Movement [s/veh]	18.48	10.82	0.00	0.00	8.54	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.68	0.00	0.00	0.66	0.00
95th-Percentile Queue Length [ft/ln]	5.03	16.96	0.00	0.00	16.51	0.00
d_A, Approach Delay [s/veh]	11.69		0.00		6.30	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	5.18					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 2: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 14.5
 Level Of Service: B
 Volume to Capacity (v/c): 0.249

Intersection Setup

Name	SB Ashby			Ashby								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SB Ashby			Ashby								
Base Volume Input [veh/h]	1	86	118	2	136	16	17	2	3	98	0	5
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	31	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]	1	90	118	2	167	16	17	2	3	98	0	5
Peak Hour Factor	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	29	38	1	54	5	5	1	1	31	0	2
Total Analysis Volume [veh/h]	1	115	151	3	214	21	22	3	4	126	0	6
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.01	0.25	0.00	0.01
d_M, Delay for Movement [s/veh]	7.83	0.00	0.00	7.91	0.00	0.00	12.50	13.40	10.03	14.53	14.75	11.83
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.01	0.17	0.17	0.17	1.02	1.02	1.02
95th-Percentile Queue Length [ft/ln]	0.06	0.06	0.06	0.18	0.18	0.18	4.37	4.37	4.37	25.38	25.38	25.38
d_A, Approach Delay [s/veh]	0.03			0.10			12.25			14.41		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	3.44											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 3: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 15.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.051

Intersection Setup

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left2	Left	Right	Thru	Right	Right2	Left	Right	Right2	Left2	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Base Volume Input [veh/h]	0	14	9	218	19	0	0	2	0	6	1	191
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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	31	0	0	0	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	14	9	249	19	0	0	2	0	6	1	195
Peak Hour Factor	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	5	3	84	6	0	0	1	0	2	0	66
Total Analysis Volume [veh/h]	0	19	12	336	26	0	0	3	0	8	1	264
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Stop	Free	Stop	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	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	15.34	15.34	11.05	0.00	0.00	0.00	15.23	10.74	10.75	8.17	8.17	0.00
Movement LOS	C	C	B	A	A	A	C	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.22	0.22	0.22	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	5.58	5.58	5.58	0.00	0.00	0.00	0.36	0.36	0.36	0.59	0.59	0.59
d_A, Approach Delay [s/veh]	13.68			0.00			10.74			0.27		
Approach LOS	B			A			B			A		
d_I, Intersection Delay [s/veh]	0.79											
Intersection LOS	C											

Intersection Level Of Service Report

Intersection 4: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 13.1
 Level Of Service: B
 Volume to Capacity (v/c): 0.009

Intersection Setup

Name	Ashby		Ashby		Proj Drwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Ashby		Ashby		Proj Drwy	
Base Volume Input [veh/h]	0	249	204	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	31	0	0	31	4	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	249	204	31	4	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	68	55	8	1	2
Total Analysis Volume [veh/h]	34	271	222	34	4	7
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	0.03	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	7.93	0.00	0.00	0.00	13.11	9.72
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.05	0.05
95th-Percentile Queue Length [ft/ln]	2.07	2.07	0.00	0.00	1.36	1.36
d_A, Approach Delay [s/veh]	0.88		0.00		10.95	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.68					
Intersection LOS	B					

Signal Warrants Report For Intersection 1: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	241	210	125
2	231	202	120
3	227	197	118
4	193	168	100
5	183	160	95
6	164	143	85
7	152	132	79
8	145	126	75
9	116	101	60
10	108	95	56
11	108	95	56
12	104	90	54
13	94	82	49
14	87	76	45
15	87	76	45
16	84	74	44
17	48	42	25
18	27	23	14
19	24	21	13
20	10	8	5
21	7	6	4
22	7	6	4
23	5	4	3
24	5	4	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	451	2	125	No	No	No	Yes	No	No	No	No	No	No
2	3	433	2	120	No	No	No	Yes	No	No	No	No	No	No
3	3	424	2	118	No	No	No	Yes	No	No	No	No	No	No
4	3	361	2	100	No	No	No	No	No	No	No	No	No	No
5	3	343	2	95	No	No	No	No	No	No	No	No	No	No
6	3	307	2	85	No	No	No	No	No	No	No	No	No	No
7	3	284	2	79	No	No	No	No	No	No	No	No	No	No
8	3	271	2	75	No	No	No	No	No	No	No	No	No	No
9	3	217	2	60	No	No	No	No	No	No	No	No	No	No
10	3	203	2	56	No	No	No	No	No	No	No	No	No	No
11	3	203	2	56	No	No	No	No	No	No	No	No	No	No
12	3	194	2	54	No	No	No	No	No	No	No	No	No	No
13	3	176	2	49	No	No	No	No	No	No	No	No	No	No
14	3	163	2	45	No	No	No	No	No	No	No	No	No	No
15	3	163	2	45	No	No	No	No	No	No	No	No	No	No
16	3	158	2	44	No	No	No	No	No	No	No	No	No	No
17	3	90	2	25	No	No	No	No	No	No	No	No	No	No
18	3	50	2	14	No	No	No	No	No	No	No	No	No	No
19	3	45	2	13	No	No	No	No	No	No	No	No	No	No
20	3	18	2	5	No	No	No	No	No	No	No	No	No	No
21	3	13	2	4	No	No	No	No	No	No	No	No	No	No
22	3	13	2	4	No	No	No	No	No	No	No	No	No	No
23	3	9	2	3	No	No	No	No	No	No	No	No	No	No
24	3	9	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.7
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:24
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	125
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	576
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Signal Warrants Report For Intersection 2: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	185	209	103	22
2	178	201	99	21
3	174	196	97	21
4	148	167	82	18
5	141	159	78	17
6	126	142	70	15
7	117	132	65	14
8	111	125	62	13
9	89	100	49	11
10	83	94	46	10
11	83	94	46	10
12	80	90	44	9
13	72	82	40	9
14	67	75	37	8
15	67	75	37	8
16	65	73	36	8
17	37	42	21	4
18	20	23	11	2
19	19	21	10	2
20	7	8	4	1
21	6	6	3	1
22	6	6	3	1
23	4	4	2	0
24	4	4	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	394	2	125	No	No	No	Yes	No	No	No	No	No	No
2	2	379	2	120	No	No	No	Yes	No	No	No	No	No	No
3	2	370	2	118	No	No	No	Yes	No	No	No	No	No	No
4	2	315	2	100	No	No	No	No	No	No	No	No	No	No
5	2	300	2	95	No	No	No	No	No	No	No	No	No	No
6	2	268	2	85	No	No	No	No	No	No	No	No	No	No
7	2	249	2	79	No	No	No	No	No	No	No	No	No	No
8	2	236	2	75	No	No	No	No	No	No	No	No	No	No
9	2	189	2	60	No	No	No	No	No	No	No	No	No	No
10	2	177	2	56	No	No	No	No	No	No	No	No	No	No
11	2	177	2	56	No	No	No	No	No	No	No	No	No	No
12	2	170	2	53	No	No	No	No	No	No	No	No	No	No
13	2	154	2	49	No	No	No	No	No	No	No	No	No	No
14	2	142	2	45	No	No	No	No	No	No	No	No	No	No
15	2	142	2	45	No	No	No	No	No	No	No	No	No	No
16	2	138	2	44	No	No	No	No	No	No	No	No	No	No
17	2	79	2	25	No	No	No	No	No	No	No	No	No	No
18	2	43	2	13	No	No	No	No	No	No	No	No	No	No
19	2	40	2	12	No	No	No	No	No	No	No	No	No	No
20	2	15	2	5	No	No	No	No	No	No	No	No	No	No
21	2	12	2	4	No	No	No	No	No	No	No	No	No	No
22	2	12	2	4	No	No	No	No	No	No	No	No	No	No
23	2	8	2	2	No	No	No	No	No	No	No	No	No	No
24	2	8	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	14.4	12.3
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:24	0:04
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	103	22
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	519	519
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 3: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, E
Minor Approaches	W, S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	E	W	S
1	268	202	2	23
2	257	194	2	22
3	252	190	2	22
4	214	162	2	18
5	204	154	2	17
6	182	137	1	16
7	169	127	1	14
8	161	121	1	14
9	129	97	1	11
10	121	91	1	10
11	121	91	1	10
12	115	87	1	10
13	105	79	1	9
14	96	73	1	8
15	96	73	1	8
16	94	71	1	8
17	54	40	0	5
18	29	22	0	3
19	27	20	0	2
20	11	8	0	1
21	8	6	0	1
22	8	6	0	1
23	5	4	0	0
24	5	4	0	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	470	2	25	No	No	No	No	No	No	No	No	No	No
2	2	451	2	24	No	No	No	No	No	No	No	No	No	No
3	2	442	2	24	No	No	No	No	No	No	No	No	No	No
4	2	376	2	20	No	No	No	No	No	No	No	No	No	No
5	2	358	2	19	No	No	No	No	No	No	No	No	No	No
6	2	319	2	17	No	No	No	No	No	No	No	No	No	No
7	2	296	2	15	No	No	No	No	No	No	No	No	No	No
8	2	282	2	15	No	No	No	No	No	No	No	No	No	No
9	2	226	2	12	No	No	No	No	No	No	No	No	No	No
10	2	212	2	11	No	No	No	No	No	No	No	No	No	No
11	2	212	2	11	No	No	No	No	No	No	No	No	No	No
12	2	202	2	11	No	No	No	No	No	No	No	No	No	No
13	2	184	2	10	No	No	No	No	No	No	No	No	No	No
14	2	169	2	9	No	No	No	No	No	No	No	No	No	No
15	2	169	2	9	No	No	No	No	No	No	No	No	No	No
16	2	165	2	9	No	No	No	No	No	No	No	No	No	No
17	2	94	2	5	No	No	No	No	No	No	No	No	No	No
18	2	51	2	3	No	No	No	No	No	No	No	No	No	No
19	2	47	2	2	No	No	No	No	No	No	No	No	No	No
20	2	19	2	1	No	No	No	No	No	No	No	No	No	No
21	2	14	2	1	No	No	No	No	No	No	No	No	No	No
22	2	14	2	1	No	No	No	No	No	No	No	No	No	No
23	2	9	2	0	No	No	No	No	No	No	No	No	No	No
24	2	9	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.7	13.7
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00	0:05
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	2	23
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	495	495
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 4: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	235	280	10
2	226	269	10
3	221	263	9
4	188	224	8
5	179	213	8
6	160	190	7
7	148	176	6
8	141	168	6
9	113	134	5
10	106	126	5
11	106	126	5
12	101	120	4
13	92	109	4
14	85	101	4
15	85	101	4
16	82	98	4
17	47	56	2
18	26	31	1
19	24	28	1
20	9	11	0
21	7	8	0
22	7	8	0
23	5	6	0
24	5	6	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	515	1	10	No	No	No	No	No	No	No	No	No	No
2	2	495	1	10	No	No	No	No	No	No	No	No	No	No
3	2	484	1	9	No	No	No	No	No	No	No	No	No	No
4	2	412	1	8	No	No	No	No	No	No	No	No	No	No
5	2	392	1	8	No	No	No	No	No	No	No	No	No	No
6	2	350	1	7	No	No	No	No	No	No	No	No	No	No
7	2	324	1	6	No	No	No	No	No	No	No	No	No	No
8	2	309	1	6	No	No	No	No	No	No	No	No	No	No
9	2	247	1	5	No	No	No	No	No	No	No	No	No	No
10	2	232	1	5	No	No	No	No	No	No	No	No	No	No
11	2	232	1	5	No	No	No	No	No	No	No	No	No	No
12	2	221	1	4	No	No	No	No	No	No	No	No	No	No
13	2	201	1	4	No	No	No	No	No	No	No	No	No	No
14	2	186	1	4	No	No	No	No	No	No	No	No	No	No
15	2	186	1	4	No	No	No	No	No	No	No	No	No	No
16	2	180	1	4	No	No	No	No	No	No	No	No	No	No
17	2	103	1	2	No	No	No	No	No	No	No	No	No	No
18	2	57	1	1	No	No	No	No	No	No	No	No	No	No
19	2	52	1	1	No	No	No	No	No	No	No	No	No	No
20	2	20	1	0	No	No	No	No	No	No	No	No	No	No
21	2	15	1	0	No	No	No	No	No	No	No	No	No	No
22	2	15	1	0	No	No	No	No	No	No	No	No	No	No
23	2	11	1	0	No	No	No	No	No	No	No	No	No	No
24	2	11	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	11
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	10
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	525
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Asby Road Cannabis Campus

Vistro File: C:\...\Cumulative v1 with peds.vistro

Scenario 8 Ex AM + Proj

Report File: C:\...\Ex AM + Proj.pdf

7/16/2019

Trip Generation summary**Added Trips**

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Zone				1.000	0.000	50.00	50.00	62	10	72	100.00
Added Trips Total								62	10	72	100.00

Asby Road Cannabis Campus

Vistro File: C:\...\Cumulative v1 with peds.vistro

Report File: C:\...\Ex AM + Proj.pdf

Scenario 8 Ex AM + Proj

7/16/2019

Trip Distribution summary

Zone / Gate	Zone 1: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
2: Gate	5.00	3	5.00	1
3: Gate	45.00	28	45.00	3
4: Gate	17.00	11	17.00	2
5: Gate	5.00	3	5.00	1
6: Gate	28.00	17	28.00	3
Total	100.00	62	100.00	10

Intersection Level Of Service Report

Intersection 1: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 13.2
 Level Of Service: B
 Volume to Capacity (v/c): 0.031

Intersection Setup

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
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	1	0	0	0	1	0
Pocket Length [ft]	60.00	100.00	100.00	100.00	185.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
Base Volume Input [veh/h]	11	107	143	11	82	181
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	22	0	1	10	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	129	143	12	92	181
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	33	37	3	24	47
Total Analysis Volume [veh/h]	14	133	147	12	95	187
Pedestrian Volume [ped/h]	5		5		5	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.16	0.00	0.00	0.07	0.00
d_M, Delay for Movement [s/veh]	13.24	10.00	0.00	0.00	7.84	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.55	0.00	0.00	0.22	0.00
95th-Percentile Queue Length [ft/ln]	2.40	13.77	0.00	0.00	5.62	0.00
d_A, Approach Delay [s/veh]	10.31		0.00		2.64	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.84					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 2: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 11.8
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	SB Ashby			Ashby								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SB Ashby			Ashby								
Base Volume Input [veh/h]	2	88	27	5	73	15	13	1	6	29	1	8
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	25	0	0	11	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]	2	113	27	5	84	15	13	1	6	29	1	8
Peak Hour Factor	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	1	37	9	2	28	5	4	0	2	10	0	3
Total Analysis Volume [veh/h]	3	149	36	7	111	20	17	1	8	38	1	11
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.01	0.06	0.00	0.01
d_M, Delay for Movement [s/veh]	7.59	0.00	0.00	7.72	0.00	0.00	11.27	11.63	9.27	11.48	11.82	9.78
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.02	0.02	0.02	0.12	0.12	0.12	0.25	0.25	0.25
95th-Percentile Queue Length [ft/ln]	0.16	0.16	0.16	0.40	0.40	0.40	3.07	3.07	3.07	6.35	6.35	6.35
d_A, Approach Delay [s/veh]	0.12			0.39			10.67			11.12		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.26											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 3: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 11.3
 Level Of Service: B
 Volume to Capacity (v/c): 0.022

Intersection Setup

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left2	Left	Right	Thru	Right	Right2	Left	Right	Right2	Left2	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Base Volume Input [veh/h]	0	10	6	100	8	0	0	1	0	9	0	107
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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	11	0	0	0	0	0	0	0	25
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	10	6	111	8	0	0	1	0	9	0	132
Peak Hour Factor	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	3	2	35	3	0	0	0	0	3	0	42
Total Analysis Volume [veh/h]	0	13	8	141	10	0	0	1	0	11	0	167
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Stop	Free	Stop	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	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	11.35	11.35	9.36	0.00	0.00	0.00	11.36	9.33	9.34	7.65	7.65	0.00
Movement LOS	B	B	A	A	A	A	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	2.44	2.44	2.44	0.00	0.00	0.00	0.09	0.09	0.09	0.61	0.61	0.61
d_A, Approach Delay [s/veh]	10.59			0.00			9.33			0.47		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	0.90											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 4: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 10.6
 Level Of Service: B
 Volume to Capacity (v/c): 0.039

Intersection Setup

Name	Ashby		Ashby		Proj Drwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Ashby		Ashby		Proj Drwy	
Base Volume Input [veh/h]	0	115	112	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	0	0	11	25	26
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	115	112	11	25	26
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	31	30	3	7	7
Total Analysis Volume [veh/h]	12	125	122	12	27	28
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	0.01	0.00	0.00	0.00	0.04	0.03
d_M, Delay for Movement [s/veh]	7.59	0.00	0.00	0.00	10.57	9.34
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	0.65	0.65	0.00	0.00	5.65	5.65
d_A, Approach Delay [s/veh]	0.66		0.00		9.94	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.96					
Intersection LOS	B					

Signal Warrants Report For Intersection 1: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	273	155	143
2	262	149	137
3	257	146	134
4	218	124	114
5	207	118	109
6	186	105	97
7	172	98	90
8	164	93	86
9	131	74	69
10	123	70	64
11	123	70	64
12	117	67	61
13	106	60	56
14	98	56	51
15	98	56	51
16	96	54	50
17	55	31	29
18	30	17	16
19	27	16	14
20	11	6	6
21	8	5	4
22	8	5	4
23	5	3	3
24	5	3	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	428	2	143	No	No	Yes	Yes	No	No	No	No	No	No
2	3	411	2	137	No	No	No	Yes	No	No	No	No	No	No
3	3	403	2	134	No	No	No	Yes	No	No	No	No	No	No
4	3	342	2	114	No	No	No	Yes	No	No	No	No	No	No
5	3	325	2	109	No	No	No	No	No	No	No	No	No	No
6	3	291	2	97	No	No	No	No	No	No	No	No	No	No
7	3	270	2	90	No	No	No	No	No	No	No	No	No	No
8	3	257	2	86	No	No	No	No	No	No	No	No	No	No
9	3	205	2	69	No	No	No	No	No	No	No	No	No	No
10	3	193	2	64	No	No	No	No	No	No	No	No	No	No
11	3	193	2	64	No	No	No	No	No	No	No	No	No	No
12	3	184	2	61	No	No	No	No	No	No	No	No	No	No
13	3	166	2	56	No	No	No	No	No	No	No	No	No	No
14	3	154	2	51	No	No	No	No	No	No	No	No	No	No
15	3	154	2	51	No	No	No	No	No	No	No	No	No	No
16	3	150	2	50	No	No	No	No	No	No	No	No	No	No
17	3	86	2	29	No	No	No	No	No	No	No	No	No	No
18	3	47	2	16	No	No	No	No	No	No	No	No	No	No
19	3	43	2	14	No	No	No	No	No	No	No	No	No	No
20	3	17	2	6	No	No	No	No	No	No	No	No	No	No
21	3	13	2	4	No	No	No	No	No	No	No	No	No	No
22	3	13	2	4	No	No	No	No	No	No	No	No	No	No
23	3	8	2	3	No	No	No	No	No	No	No	No	No	No
24	3	8	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	1	4	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.3
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:24
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	143
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	571
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Signal Warrants Report For Intersection 2: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	104	142	38	20
2	100	136	36	19
3	98	133	36	19
4	83	114	30	16
5	79	108	29	15
6	71	97	26	14
7	66	89	24	13
8	62	85	23	12
9	50	68	18	10
10	47	64	17	9
11	47	64	17	9
12	45	61	16	9
13	41	55	15	8
14	37	51	14	7
15	37	51	14	7
16	36	50	13	7
17	21	28	8	4
18	11	16	4	2
19	10	14	4	2
20	4	6	2	1
21	3	4	1	1
22	3	4	1	1
23	2	3	1	0
24	2	3	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	246	2	58	No	No	No	No	No	No	No	No	No	No
2	2	236	2	55	No	No	No	No	No	No	No	No	No	No
3	2	231	2	55	No	No	No	No	No	No	No	No	No	No
4	2	197	2	46	No	No	No	No	No	No	No	No	No	No
5	2	187	2	44	No	No	No	No	No	No	No	No	No	No
6	2	168	2	40	No	No	No	No	No	No	No	No	No	No
7	2	155	2	37	No	No	No	No	No	No	No	No	No	No
8	2	147	2	35	No	No	No	No	No	No	No	No	No	No
9	2	118	2	28	No	No	No	No	No	No	No	No	No	No
10	2	111	2	26	No	No	No	No	No	No	No	No	No	No
11	2	111	2	26	No	No	No	No	No	No	No	No	No	No
12	2	106	2	25	No	No	No	No	No	No	No	No	No	No
13	2	96	2	23	No	No	No	No	No	No	No	No	No	No
14	2	88	2	21	No	No	No	No	No	No	No	No	No	No
15	2	88	2	21	No	No	No	No	No	No	No	No	No	No
16	2	86	2	20	No	No	No	No	No	No	No	No	No	No
17	2	49	2	12	No	No	No	No	No	No	No	No	No	No
18	2	27	2	6	No	No	No	No	No	No	No	No	No	No
19	2	24	2	6	No	No	No	No	No	No	No	No	No	No
20	2	10	2	3	No	No	No	No	No	No	No	No	No	No
21	2	7	2	2	No	No	No	No	No	No	No	No	No	No
22	2	7	2	2	No	No	No	No	No	No	No	No	No	No
23	2	5	2	1	No	No	No	No	No	No	No	No	No	No
24	2	5	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.1	10.7
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07	0:03
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	38	20
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	304	304
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 3: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, E
Minor Approaches	W, S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	E	W	S
1	119	141	1	16
2	114	135	1	15
3	112	133	1	15
4	95	113	1	13
5	90	107	1	12
6	81	96	1	11
7	75	89	1	10
8	71	85	1	10
9	57	68	0	8
10	54	63	0	7
11	54	63	0	7
12	51	61	0	7
13	46	55	0	6
14	43	51	0	6
15	43	51	0	6
16	42	49	0	6
17	24	28	0	3
18	13	16	0	2
19	12	14	0	2
20	5	6	0	1
21	4	4	0	0
22	4	4	0	0
23	2	3	0	0
24	2	3	0	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	260	2	17	No	No	No	No	No	No	No	No	No	No
2	2	249	2	16	No	No	No	No	No	No	No	No	No	No
3	2	245	2	16	No	No	No	No	No	No	No	No	No	No
4	2	208	2	14	No	No	No	No	No	No	No	No	No	No
5	2	197	2	13	No	No	No	No	No	No	No	No	No	No
6	2	177	2	12	No	No	No	No	No	No	No	No	No	No
7	2	164	2	11	No	No	No	No	No	No	No	No	No	No
8	2	156	2	11	No	No	No	No	No	No	No	No	No	No
9	2	125	2	8	No	No	No	No	No	No	No	No	No	No
10	2	117	2	7	No	No	No	No	No	No	No	No	No	No
11	2	117	2	7	No	No	No	No	No	No	No	No	No	No
12	2	112	2	7	No	No	No	No	No	No	No	No	No	No
13	2	101	2	6	No	No	No	No	No	No	No	No	No	No
14	2	94	2	6	No	No	No	No	No	No	No	No	No	No
15	2	94	2	6	No	No	No	No	No	No	No	No	No	No
16	2	91	2	6	No	No	No	No	No	No	No	No	No	No
17	2	52	2	3	No	No	No	No	No	No	No	No	No	No
18	2	29	2	2	No	No	No	No	No	No	No	No	No	No
19	2	26	2	2	No	No	No	No	No	No	No	No	No	No
20	2	11	2	1	No	No	No	No	No	No	No	No	No	No
21	2	8	2	0	No	No	No	No	No	No	No	No	No	No
22	2	8	2	0	No	No	No	No	No	No	No	No	No	No
23	2	5	2	0	No	No	No	No	No	No	No	No	No	No
24	2	5	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.3	10.6
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00	0:02
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	1	16
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	277	277
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 4: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	123	126	51
2	118	121	49
3	116	118	48
4	98	101	41
5	93	96	39
6	84	86	35
7	77	79	32
8	74	76	31
9	59	60	24
10	55	57	23
11	55	57	23
12	53	54	22
13	48	49	20
14	44	45	18
15	44	45	18
16	43	44	18
17	25	25	10
18	14	14	6
19	12	13	5
20	5	5	2
21	4	4	2
22	4	4	2
23	2	3	1
24	2	3	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	249	1	51	No	No	No	No	No	No	No	No	No	No
2	2	239	1	49	No	No	No	No	No	No	No	No	No	No
3	2	234	1	48	No	No	No	No	No	No	No	No	No	No
4	2	199	1	41	No	No	No	No	No	No	No	No	No	No
5	2	189	1	39	No	No	No	No	No	No	No	No	No	No
6	2	170	1	35	No	No	No	No	No	No	No	No	No	No
7	2	156	1	32	No	No	No	No	No	No	No	No	No	No
8	2	150	1	31	No	No	No	No	No	No	No	No	No	No
9	2	119	1	24	No	No	No	No	No	No	No	No	No	No
10	2	112	1	23	No	No	No	No	No	No	No	No	No	No
11	2	112	1	23	No	No	No	No	No	No	No	No	No	No
12	2	107	1	22	No	No	No	No	No	No	No	No	No	No
13	2	97	1	20	No	No	No	No	No	No	No	No	No	No
14	2	89	1	18	No	No	No	No	No	No	No	No	No	No
15	2	89	1	18	No	No	No	No	No	No	No	No	No	No
16	2	87	1	18	No	No	No	No	No	No	No	No	No	No
17	2	50	1	10	No	No	No	No	No	No	No	No	No	No
18	2	28	1	6	No	No	No	No	No	No	No	No	No	No
19	2	25	1	5	No	No	No	No	No	No	No	No	No	No
20	2	10	1	2	No	No	No	No	No	No	No	No	No	No
21	2	8	1	2	No	No	No	No	No	No	No	No	No	No
22	2	8	1	2	No	No	No	No	No	No	No	No	No	No
23	2	5	1	1	No	No	No	No	No	No	No	No	No	No
24	2	5	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:08
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	51
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	300
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Asby Road Cannabis Campus

Vistro File: C:\...\Cumulative v1 with peds.vistro

Scenario 10 Ex PM + Proj

Report File: C:\...\Ex PM + Proj.pdf

7/16/2019

Trip Generation summary**Added Trips**

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Zone				1.000	0.000	50.00	50.00	22	51	73	100.00
Added Trips Total								22	51	73	100.00

Asby Road Cannabis Campus

Vistro File: C:\...\Cumulative v1 with peds.vistro

Report File: C:\...\Ex PM + Proj.pdf

Scenario 10 Ex PM + Proj

7/16/2019

Trip Distribution summary

Zone / Gate	Zone 1: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
2: Gate	5.00	1	5.00	3
3: Gate	45.00	10	45.00	22
4: Gate	17.00	4	17.00	9
5: Gate	5.00	1	5.00	3
6: Gate	28.00	6	28.00	14
Total	100.00	22	100.00	51

Intersection Level Of Service Report

Intersection 1: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 17.0
 Level Of Service: C
 Volume to Capacity (v/c): 0.062

Intersection Setup

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
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	1	0	0	0	1	0
Pocket Length [ft]	60.00	100.00	100.00	100.00	185.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
Base Volume Input [veh/h]	16	108	176	38	150	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	16	108	176	38	150	66
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	34	56	12	47	21
Total Analysis Volume [veh/h]	20	137	223	48	190	84
Pedestrian Volume [ped/h]	5		5		5	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.18	0.00	0.00	0.15	0.00
d_M, Delay for Movement [s/veh]	16.97	10.82	0.00	0.00	8.44	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.66	0.00	0.00	0.54	0.00
95th-Percentile Queue Length [ft/ln]	4.96	16.48	0.00	0.00	13.56	0.00
d_A, Approach Delay [s/veh]	11.60		0.00		5.85	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	4.88					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 2: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 14.0
 Level Of Service: B
 Volume to Capacity (v/c): 0.239

Intersection Setup

Name	SB Ashby			Ashby								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SB Ashby			Ashby								
Base Volume Input [veh/h]	1	88	123	3	143	16	17	2	3	98	0	6
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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]	1	88	123	3	143	16	17	2	3	98	0	6
Peak Hour Factor	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	28	39	1	46	5	5	1	1	31	0	2
Total Analysis Volume [veh/h]	1	113	158	4	183	21	22	3	4	126	0	8
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.24	0.00	0.01
d_M, Delay for Movement [s/veh]	7.75	0.00	0.00	7.92	0.00	0.00	12.21	13.13	9.82	14.04	14.29	11.64
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.01	0.17	0.17	0.17	0.98	0.98	0.98
95th-Percentile Queue Length [ft/ln]	0.06	0.06	0.06	0.24	0.24	0.24	4.20	4.20	4.20	24.41	24.41	24.41
d_A, Approach Delay [s/veh]	0.03			0.15			11.98			13.90		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	3.50											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 3: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 15.0
 Level Of Service: B
 Volume to Capacity (v/c): 0.057

Intersection Setup

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left2	Left	Right	Thru	Right	Right2	Left	Right	Right2	Left2	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Base Volume Input [veh/h]	0	16	12	218	26	0	0	2	0	8	1	195
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	16	12	218	26	0	0	2	0	8	1	195
Peak Hour Factor	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	5	4	74	9	0	0	1	0	3	0	66
Total Analysis Volume [veh/h]	0	22	16	295	35	0	0	3	0	11	1	264
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Stop	Free	Stop	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	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	14.97	14.97	10.85	0.00	0.00	0.00	14.88	10.53	10.55	8.09	8.09	0.00
Movement LOS	B	B	B	A	A	A	B	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.26	0.26	0.26	0.00	0.00	0.00	0.01	0.01	0.01	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	6.49	6.49	6.49	0.00	0.00	0.00	0.35	0.35	0.35	0.77	0.77	0.77
d_A, Approach Delay [s/veh]	13.24			0.00			10.53			0.35		
Approach LOS	B			A			B			A		
d_I, Intersection Delay [s/veh]	0.98											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 4: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 0.0
 Level Of Service: A
 Volume to Capacity (v/c): 0.003

Intersection Setup

Name	Ashby		Ashby		Proj Drwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Ashby		Ashby		Proj Drwy	
Base Volume Input [veh/h]	0	263	207	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	0	263	207	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	71	56	0	0	0
Total Analysis Volume [veh/h]	0	286	225	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.77	0.00	0.00	0.00	12.08	9.53
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		10.80	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Signal Warrants Report For Intersection 1: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	216	214	124
2	207	205	119
3	203	201	117
4	173	171	99
5	164	163	94
6	147	146	84
7	136	135	78
8	130	128	74
9	104	103	60
10	97	96	56
11	97	96	56
12	93	92	53
13	84	83	48
14	78	77	45
15	78	77	45
16	76	75	43
17	43	43	25
18	24	24	14
19	22	21	12
20	9	9	5
21	6	6	4
22	6	6	4
23	4	4	2
24	4	4	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	430	2	124	No	No	No	Yes	No	No	No	No	No	No
2	3	412	2	119	No	No	No	Yes	No	No	No	No	No	No
3	3	404	2	117	No	No	No	Yes	No	No	No	No	No	No
4	3	344	2	99	No	No	No	No	No	No	No	No	No	No
5	3	327	2	94	No	No	No	No	No	No	No	No	No	No
6	3	293	2	84	No	No	No	No	No	No	No	No	No	No
7	3	271	2	78	No	No	No	No	No	No	No	No	No	No
8	3	258	2	74	No	No	No	No	No	No	No	No	No	No
9	3	207	2	60	No	No	No	No	No	No	No	No	No	No
10	3	193	2	56	No	No	No	No	No	No	No	No	No	No
11	3	193	2	56	No	No	No	No	No	No	No	No	No	No
12	3	185	2	53	No	No	No	No	No	No	No	No	No	No
13	3	167	2	48	No	No	No	No	No	No	No	No	No	No
14	3	155	2	45	No	No	No	No	No	No	No	No	No	No
15	3	155	2	45	No	No	No	No	No	No	No	No	No	No
16	3	151	2	43	No	No	No	No	No	No	No	No	No	No
17	3	86	2	25	No	No	No	No	No	No	No	No	No	No
18	3	48	2	14	No	No	No	No	No	No	No	No	No	No
19	3	43	2	12	No	No	No	No	No	No	No	No	No	No
20	3	18	2	5	No	No	No	No	No	No	No	No	No	No
21	3	12	2	4	No	No	No	No	No	No	No	No	No	No
22	3	12	2	4	No	No	No	No	No	No	No	No	No	No
23	3	8	2	2	No	No	No	No	No	No	No	No	No	No
24	3	8	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.6
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:23
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	124
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	554
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Signal Warrants Report For Intersection 2: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	162	212	104	22
2	156	204	100	21
3	152	199	98	21
4	130	170	83	18
5	123	161	79	17
6	110	144	71	15
7	102	134	66	14
8	97	127	62	13
9	78	102	50	11
10	73	95	47	10
11	73	95	47	10
12	70	91	45	9
13	63	83	41	9
14	58	76	37	8
15	58	76	37	8
16	57	74	36	8
17	32	42	21	4
18	18	23	11	2
19	16	21	10	2
20	6	8	4	1
21	5	6	3	1
22	5	6	3	1
23	3	4	2	0
24	3	4	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	374	2	126	No	No	No	Yes	No	No	No	No	No	No
2	2	360	2	121	No	No	No	Yes	No	No	No	No	No	No
3	2	351	2	119	No	No	No	Yes	No	No	No	No	No	No
4	2	300	2	101	No	No	No	No	No	No	No	No	No	No
5	2	284	2	96	No	No	No	No	No	No	No	No	No	No
6	2	254	2	86	No	No	No	No	No	No	No	No	No	No
7	2	236	2	80	No	No	No	No	No	No	No	No	No	No
8	2	224	2	75	No	No	No	No	No	No	No	No	No	No
9	2	180	2	61	No	No	No	No	No	No	No	No	No	No
10	2	168	2	57	No	No	No	No	No	No	No	No	No	No
11	2	168	2	57	No	No	No	No	No	No	No	No	No	No
12	2	161	2	54	No	No	No	No	No	No	No	No	No	No
13	2	146	2	50	No	No	No	No	No	No	No	No	No	No
14	2	134	2	45	No	No	No	No	No	No	No	No	No	No
15	2	134	2	45	No	No	No	No	No	No	No	No	No	No
16	2	131	2	44	No	No	No	No	No	No	No	No	No	No
17	2	74	2	25	No	No	No	No	No	No	No	No	No	No
18	2	41	2	13	No	No	No	No	No	No	No	No	No	No
19	2	37	2	12	No	No	No	No	No	No	No	No	No	No
20	2	14	2	5	No	No	No	No	No	No	No	No	No	No
21	2	11	2	4	No	No	No	No	No	No	No	No	No	No
22	2	11	2	4	No	No	No	No	No	No	No	No	No	No
23	2	7	2	2	No	No	No	No	No	No	No	No	No	No
24	2	7	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.9	12
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:24	0:04
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	104	22
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	500	500
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 3: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, E
Minor Approaches	W, S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	E	W	S
1	244	204	2	28
2	234	196	2	27
3	229	192	2	26
4	195	163	2	22
5	185	155	2	21
6	166	139	1	19
7	154	129	1	18
8	146	122	1	17
9	117	98	1	13
10	110	92	1	13
11	110	92	1	13
12	105	88	1	12
13	95	80	1	11
14	88	73	1	10
15	88	73	1	10
16	85	71	1	10
17	49	41	0	6
18	27	22	0	3
19	24	20	0	3
20	10	8	0	1
21	7	6	0	1
22	7	6	0	1
23	5	4	0	1
24	5	4	0	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	448	2	30	No	No	No	No	No	No	No	No	No	No
2	2	430	2	29	No	No	No	No	No	No	No	No	No	No
3	2	421	2	28	No	No	No	No	No	No	No	No	No	No
4	2	358	2	24	No	No	No	No	No	No	No	No	No	No
5	2	340	2	23	No	No	No	No	No	No	No	No	No	No
6	2	305	2	20	No	No	No	No	No	No	No	No	No	No
7	2	283	2	19	No	No	No	No	No	No	No	No	No	No
8	2	268	2	18	No	No	No	No	No	No	No	No	No	No
9	2	215	2	14	No	No	No	No	No	No	No	No	No	No
10	2	202	2	14	No	No	No	No	No	No	No	No	No	No
11	2	202	2	14	No	No	No	No	No	No	No	No	No	No
12	2	193	2	13	No	No	No	No	No	No	No	No	No	No
13	2	175	2	12	No	No	No	No	No	No	No	No	No	No
14	2	161	2	11	No	No	No	No	No	No	No	No	No	No
15	2	161	2	11	No	No	No	No	No	No	No	No	No	No
16	2	156	2	11	No	No	No	No	No	No	No	No	No	No
17	2	90	2	6	No	No	No	No	No	No	No	No	No	No
18	2	49	2	3	No	No	No	No	No	No	No	No	No	No
19	2	44	2	3	No	No	No	No	No	No	No	No	No	No
20	2	18	2	1	No	No	No	No	No	No	No	No	No	No
21	2	13	2	1	No	No	No	No	No	No	No	No	No	No
22	2	13	2	1	No	No	No	No	No	No	No	No	No	No
23	2	9	2	1	No	No	No	No	No	No	No	No	No	No
24	2	9	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.5	13.2
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00	0:06
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	2	28
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	478	478
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 4: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	207	263	0
2	199	252	0
3	195	247	0
4	166	210	0
5	157	200	0
6	141	179	0
7	130	166	0
8	124	158	0
9	99	126	0
10	93	118	0
11	93	118	0
12	89	113	0
13	81	103	0
14	75	95	0
15	75	95	0
16	72	92	0
17	41	53	0
18	23	29	0
19	21	26	0
20	8	11	0
21	6	8	0
22	6	8	0
23	4	5	0
24	4	5	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	470	1	0	No	No	No	No	No	No	No	No	No	No
2	2	451	1	0	No	No	No	No	No	No	No	No	No	No
3	2	442	1	0	No	No	No	No	No	No	No	No	No	No
4	2	376	1	0	No	No	No	No	No	No	No	No	No	No
5	2	357	1	0	No	No	No	No	No	No	No	No	No	No
6	2	320	1	0	No	No	No	No	No	No	No	No	No	No
7	2	296	1	0	No	No	No	No	No	No	No	No	No	No
8	2	282	1	0	No	No	No	No	No	No	No	No	No	No
9	2	225	1	0	No	No	No	No	No	No	No	No	No	No
10	2	211	1	0	No	No	No	No	No	No	No	No	No	No
11	2	211	1	0	No	No	No	No	No	No	No	No	No	No
12	2	202	1	0	No	No	No	No	No	No	No	No	No	No
13	2	184	1	0	No	No	No	No	No	No	No	No	No	No
14	2	170	1	0	No	No	No	No	No	No	No	No	No	No
15	2	170	1	0	No	No	No	No	No	No	No	No	No	No
16	2	164	1	0	No	No	No	No	No	No	No	No	No	No
17	2	94	1	0	No	No	No	No	No	No	No	No	No	No
18	2	52	1	0	No	No	No	No	No	No	No	No	No	No
19	2	47	1	0	No	No	No	No	No	No	No	No	No	No
20	2	19	1	0	No	No	No	No	No	No	No	No	No	No
21	2	14	1	0	No	No	No	No	No	No	No	No	No	No
22	2	14	1	0	No	No	No	No	No	No	No	No	No	No
23	2	9	1	0	No	No	No	No	No	No	No	No	No	No
24	2	9	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	0
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	470
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Intersection Level Of Service Report

Intersection 1: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 13.2
 Level Of Service: B
 Volume to Capacity (v/c): 0.044

Intersection Setup

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
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	1	0	0	0	1	0
Pocket Length [ft]	60.00	100.00	100.00	100.00	185.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
Base Volume Input [veh/h]	19	107	143	11	82	195
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	19	107	143	11	82	195
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	28	37	3	21	50
Total Analysis Volume [veh/h]	20	110	147	11	85	201
Pedestrian Volume [ped/h]	5		5		5	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.13	0.00	0.00	0.06	0.00
d_M, Delay for Movement [s/veh]	13.21	9.84	0.00	0.00	7.82	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.44	0.00	0.00	0.20	0.00
95th-Percentile Queue Length [ft/ln]	3.41	11.04	0.00	0.00	4.99	0.00
d_A, Approach Delay [s/veh]	10.36		0.00		2.32	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.50					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 2: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 12.2
 Level Of Service: B
 Volume to Capacity (v/c): 0.006

Intersection Setup

Name	SB Ashby			Ashby								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SB Ashby			Ashby								
Base Volume Input [veh/h]	5	112	30	15	81	15	13	1	6	29	2	8
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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]	5	112	30	15	81	15	13	1	6	29	2	8
Peak Hour Factor	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	37	10	5	27	5	4	0	2	10	1	3
Total Analysis Volume [veh/h]	7	147	39	20	107	20	17	1	8	38	3	11
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.00	0.00	0.03	0.00	0.01	0.07	0.01	0.01
d_M, Delay for Movement [s/veh]	7.59	0.00	0.00	7.75	0.00	0.00	11.66	12.01	9.27	11.91	12.24	9.85
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.05	0.05	0.05	0.13	0.13	0.13	0.28	0.28	0.28
95th-Percentile Queue Length [ft/ln]	0.38	0.38	0.38	1.15	1.15	1.15	3.21	3.21	3.21	7.00	7.00	7.00
d_A, Approach Delay [s/veh]	0.28			1.05			10.94			11.49		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.61											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 3: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 11.9
 Level Of Service: B
 Volume to Capacity (v/c): 0.024

Intersection Setup

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left2	Left	Right	Thru	Right	Right2	Left	Right	Right2	Left2	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Base Volume Input [veh/h]	0	10	6	100	16	0	0	1	0	26	0	137
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	10	6	100	16	0	0	1	0	26	0	137
Peak Hour Factor	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	3	2	32	5	0	0	0	0	8	0	43
Total Analysis Volume [veh/h]	0	13	8	127	20	0	0	1	0	33	0	173
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Stop	Free	Stop	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	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	11.89	11.89	9.33	0.00	0.00	0.00	11.87	9.34	9.37	7.68	7.68	0.00
Movement LOS	B	B	A	A	A	A	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.07
95th-Percentile Queue Length [ft/ln]	2.58	2.58	2.58	0.00	0.00	0.00	0.09	0.09	0.09	1.84	1.84	1.84
d_A, Approach Delay [s/veh]	10.91			0.00			9.34			1.23		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	1.31											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 4: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 0.0
 Level Of Service: A
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	Ashby		Ashby		Proj Drwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Ashby		Ashby		Proj Drwy	
Base Volume Input [veh/h]	0	155	112	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	0	155	112	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	42	30	0	0	0
Total Analysis Volume [veh/h]	0	168	122	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.54	0.00	0.00	0.00	10.26	8.96
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Signal Warrants Report For Intersection 1: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	277	154	126
2	266	148	121
3	260	145	118
4	222	123	101
5	211	117	96
6	188	105	86
7	175	97	79
8	166	92	76
9	133	74	60
10	125	69	57
11	125	69	57
12	119	66	54
13	108	60	49
14	100	55	45
15	100	55	45
16	97	54	44
17	55	31	25
18	30	17	14
19	28	15	13
20	11	6	5
21	8	5	4
22	8	5	4
23	6	3	3
24	6	3	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	431	2	126	No	No	No	Yes	No	No	No	No	No	No
2	3	414	2	121	No	No	No	Yes	No	No	No	No	No	No
3	3	405	2	118	No	No	No	Yes	No	No	No	No	No	No
4	3	345	2	101	No	No	No	No	No	No	No	No	No	No
5	3	328	2	96	No	No	No	No	No	No	No	No	No	No
6	3	293	2	86	No	No	No	No	No	No	No	No	No	No
7	3	272	2	79	No	No	No	No	No	No	No	No	No	No
8	3	258	2	76	No	No	No	No	No	No	No	No	No	No
9	3	207	2	60	No	No	No	No	No	No	No	No	No	No
10	3	194	2	57	No	No	No	No	No	No	No	No	No	No
11	3	194	2	57	No	No	No	No	No	No	No	No	No	No
12	3	185	2	54	No	No	No	No	No	No	No	No	No	No
13	3	168	2	49	No	No	No	No	No	No	No	No	No	No
14	3	155	2	45	No	No	No	No	No	No	No	No	No	No
15	3	155	2	45	No	No	No	No	No	No	No	No	No	No
16	3	151	2	44	No	No	No	No	No	No	No	No	No	No
17	3	86	2	25	No	No	No	No	No	No	No	No	No	No
18	3	47	2	14	No	No	No	No	No	No	No	No	No	No
19	3	43	2	13	No	No	No	No	No	No	No	No	No	No
20	3	17	2	5	No	No	No	No	No	No	No	No	No	No
21	3	13	2	4	No	No	No	No	No	No	No	No	No	No
22	3	13	2	4	No	No	No	No	No	No	No	No	No	No
23	3	9	2	3	No	No	No	No	No	No	No	No	No	No
24	3	9	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.4
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:21
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	126
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	557
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Signal Warrants Report For Intersection 2: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	111	147	39	20
2	107	141	37	19
3	104	138	37	19
4	89	118	31	16
5	84	112	30	15
6	75	100	27	14
7	70	93	25	13
8	67	88	23	12
9	53	71	19	10
10	50	66	18	9
11	50	66	18	9
12	48	63	17	9
13	43	57	15	8
14	40	53	14	7
15	40	53	14	7
16	39	51	14	7
17	22	29	8	4
18	12	16	4	2
19	11	15	4	2
20	4	6	2	1
21	3	4	1	1
22	3	4	1	1
23	2	3	1	0
24	2	3	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	258	2	59	No	No	No	No	No	No	No	No	No	No
2	2	248	2	56	No	No	No	No	No	No	No	No	No	No
3	2	242	2	56	No	No	No	No	No	No	No	No	No	No
4	2	207	2	47	No	No	No	No	No	No	No	No	No	No
5	2	196	2	45	No	No	No	No	No	No	No	No	No	No
6	2	175	2	41	No	No	No	No	No	No	No	No	No	No
7	2	163	2	38	No	No	No	No	No	No	No	No	No	No
8	2	155	2	35	No	No	No	No	No	No	No	No	No	No
9	2	124	2	29	No	No	No	No	No	No	No	No	No	No
10	2	116	2	27	No	No	No	No	No	No	No	No	No	No
11	2	116	2	27	No	No	No	No	No	No	No	No	No	No
12	2	111	2	26	No	No	No	No	No	No	No	No	No	No
13	2	100	2	23	No	No	No	No	No	No	No	No	No	No
14	2	93	2	21	No	No	No	No	No	No	No	No	No	No
15	2	93	2	21	No	No	No	No	No	No	No	No	No	No
16	2	90	2	21	No	No	No	No	No	No	No	No	No	No
17	2	51	2	12	No	No	No	No	No	No	No	No	No	No
18	2	28	2	6	No	No	No	No	No	No	No	No	No	No
19	2	26	2	6	No	No	No	No	No	No	No	No	No	No
20	2	10	2	3	No	No	No	No	No	No	No	No	No	No
21	2	7	2	2	No	No	No	No	No	No	No	No	No	No
22	2	7	2	2	No	No	No	No	No	No	No	No	No	No
23	2	5	2	1	No	No	No	No	No	No	No	No	No	No
24	2	5	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.5	10.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07	0:03
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	39	20
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	317	317
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 3: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, E
Minor Approaches	W, S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	E	W	S
1	116	163	1	16
2	111	156	1	15
3	109	153	1	15
4	93	130	1	13
5	88	124	1	12
6	79	111	1	11
7	73	103	1	10
8	70	98	1	10
9	56	78	0	8
10	52	73	0	7
11	52	73	0	7
12	50	70	0	7
13	45	64	0	6
14	42	59	0	6
15	42	59	0	6
16	41	57	0	6
17	23	33	0	3
18	13	18	0	2
19	12	16	0	2
20	5	7	0	1
21	3	5	0	0
22	3	5	0	0
23	2	3	0	0
24	2	3	0	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	279	2	17	No	No	No	No	No	No	No	No	No	No
2	2	267	2	16	No	No	No	No	No	No	No	No	No	No
3	2	262	2	16	No	No	No	No	No	No	No	No	No	No
4	2	223	2	14	No	No	No	No	No	No	No	No	No	No
5	2	212	2	13	No	No	No	No	No	No	No	No	No	No
6	2	190	2	12	No	No	No	No	No	No	No	No	No	No
7	2	176	2	11	No	No	No	No	No	No	No	No	No	No
8	2	168	2	11	No	No	No	No	No	No	No	No	No	No
9	2	134	2	8	No	No	No	No	No	No	No	No	No	No
10	2	125	2	7	No	No	No	No	No	No	No	No	No	No
11	2	125	2	7	No	No	No	No	No	No	No	No	No	No
12	2	120	2	7	No	No	No	No	No	No	No	No	No	No
13	2	109	2	6	No	No	No	No	No	No	No	No	No	No
14	2	101	2	6	No	No	No	No	No	No	No	No	No	No
15	2	101	2	6	No	No	No	No	No	No	No	No	No	No
16	2	98	2	6	No	No	No	No	No	No	No	No	No	No
17	2	56	2	3	No	No	No	No	No	No	No	No	No	No
18	2	31	2	2	No	No	No	No	No	No	No	No	No	No
19	2	28	2	2	No	No	No	No	No	No	No	No	No	No
20	2	12	2	1	No	No	No	No	No	No	No	No	No	No
21	2	8	2	0	No	No	No	No	No	No	No	No	No	No
22	2	8	2	0	No	No	No	No	No	No	No	No	No	No
23	2	5	2	0	No	No	No	No	No	No	No	No	No	No
24	2	5	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.3	10.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00	0:02
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	1	16
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	296	296
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 4: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	112	155	0
2	108	149	0
3	105	146	0
4	90	124	0
5	85	118	0
6	76	105	0
7	71	98	0
8	67	93	0
9	54	74	0
10	50	70	0
11	50	70	0
12	48	67	0
13	44	60	0
14	40	56	0
15	40	56	0
16	39	54	0
17	22	31	0
18	12	17	0
19	11	16	0
20	4	6	0
21	3	5	0
22	3	5	0
23	2	3	0
24	2	3	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	267	1	0	No	No	No	No	No	No	No	No	No	No
2	2	257	1	0	No	No	No	No	No	No	No	No	No	No
3	2	251	1	0	No	No	No	No	No	No	No	No	No	No
4	2	214	1	0	No	No	No	No	No	No	No	No	No	No
5	2	203	1	0	No	No	No	No	No	No	No	No	No	No
6	2	181	1	0	No	No	No	No	No	No	No	No	No	No
7	2	169	1	0	No	No	No	No	No	No	No	No	No	No
8	2	160	1	0	No	No	No	No	No	No	No	No	No	No
9	2	128	1	0	No	No	No	No	No	No	No	No	No	No
10	2	120	1	0	No	No	No	No	No	No	No	No	No	No
11	2	120	1	0	No	No	No	No	No	No	No	No	No	No
12	2	115	1	0	No	No	No	No	No	No	No	No	No	No
13	2	104	1	0	No	No	No	No	No	No	No	No	No	No
14	2	96	1	0	No	No	No	No	No	No	No	No	No	No
15	2	96	1	0	No	No	No	No	No	No	No	No	No	No
16	2	93	1	0	No	No	No	No	No	No	No	No	No	No
17	2	53	1	0	No	No	No	No	No	No	No	No	No	No
18	2	29	1	0	No	No	No	No	No	No	No	No	No	No
19	2	27	1	0	No	No	No	No	No	No	No	No	No	No
20	2	10	1	0	No	No	No	No	No	No	No	No	No	No
21	2	8	1	0	No	No	No	No	No	No	No	No	No	No
22	2	8	1	0	No	No	No	No	No	No	No	No	No	No
23	2	5	1	0	No	No	No	No	No	No	No	No	No	No
24	2	5	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.6
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	0
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	267
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Intersection Level Of Service Report

Intersection 1: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 18.6
 Level Of Service: C
 Volume to Capacity (v/c): 0.077

Intersection Setup

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
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	1	0	0	0	1	0
Pocket Length [ft]	60.00	100.00	100.00	100.00	185.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
Base Volume Input [veh/h]	16	108	176	38	150	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	3	0	3	28	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]	17	111	176	41	178	66
Peak Hour Factor	0.7900	0.7900	0.7900	0.7900	0.7900	0.7900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	35	56	13	56	21
Total Analysis Volume [veh/h]	22	141	223	52	225	84
Pedestrian Volume [ped/h]	1		1		1	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.18	0.00	0.00	0.18	0.00
d_M, Delay for Movement [s/veh]	18.62	10.75	0.00	0.00	8.54	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.67	0.00	0.00	0.66	0.00
95th-Percentile Queue Length [ft/ln]	6.20	16.75	0.00	0.00	16.52	0.00
d_A, Approach Delay [s/veh]	11.81		0.00		6.22	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	5.15					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 2: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 14.9
 Level Of Service: B
 Volume to Capacity (v/c): 0.257

Intersection Setup

Name	SB Ashby			Ashby								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SB Ashby			Ashby								
Base Volume Input [veh/h]	1	88	123	3	143	16	17	2	3	98	0	6
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	31	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]	1	92	123	3	174	16	17	2	3	98	0	6
Peak Hour Factor	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780	0.780
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	29	39	1	56	5	5	1	1	31	0	2
Total Analysis Volume [veh/h]	1	118	158	4	223	21	22	3	4	126	0	8
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.01	0.26	0.00	0.01
d_M, Delay for Movement [s/veh]	7.85	0.00	0.00	7.93	0.00	0.00	12.76	13.66	10.11	14.91	15.10	12.05
Movement LOS	A	A	A	A	A	A	B	B	B	B	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.01	0.18	0.18	0.18	1.07	1.07	1.07
95th-Percentile Queue Length [ft/ln]	0.06	0.06	0.06	0.24	0.24	0.24	4.51	4.51	4.51	26.63	26.63	26.63
d_A, Approach Delay [s/veh]	0.03			0.13			12.48			14.74		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	3.45											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 3: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 15.8
 Level Of Service: C
 Volume to Capacity (v/c): 0.061

Intersection Setup

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left2	Left	Right	Thru	Right	Right2	Left	Right	Right2	Left2	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Base Volume Input [veh/h]	0	16	12	218	26	0	0	2	0	8	1	195
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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	31	0	0	0	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	16	12	249	26	0	0	2	0	8	1	199
Peak Hour Factor	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	5	4	84	9	0	0	1	0	3	0	67
Total Analysis Volume [veh/h]	0	22	16	336	35	0	0	3	0	11	1	269
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Stop	Free	Stop	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	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	15.77	15.77	11.23	0.00	0.00	0.00	15.62	10.84	10.85	8.21	8.21	0.00
Movement LOS	C	C	B	A	A	A	C	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.28	0.28	0.28	0.00	0.00	0.00	0.01	0.01	0.01	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	6.97	6.97	6.97	0.00	0.00	0.00	0.36	0.36	0.36	0.80	0.80	0.80
d_A, Approach Delay [s/veh]	13.86			0.00			10.84			0.35		
Approach LOS	B			A			B			A		
d_I, Intersection Delay [s/veh]	0.95											
Intersection LOS	C											

Intersection Level Of Service Report

Intersection 4: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 13.3
 Level Of Service: B
 Volume to Capacity (v/c): 0.009

Intersection Setup

Name	Ashby		Ashby		Proj Drwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Ashby		Ashby		Proj Drwy	
Base Volume Input [veh/h]	0	263	207	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	31	0	0	31	4	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	263	207	31	4	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	71	56	8	1	2
Total Analysis Volume [veh/h]	34	286	225	34	4	7
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	0.03	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	7.94	0.00	0.00	0.00	13.31	9.74
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.06	0.06
95th-Percentile Queue Length [ft/ln]	2.08	2.08	0.00	0.00	1.38	1.38
d_A, Approach Delay [s/veh]	0.84		0.00		11.04	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.66					
Intersection LOS	B					

Signal Warrants Report For Intersection 1: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	244	217	128
2	234	208	123
3	229	204	120
4	195	174	102
5	185	165	97
6	166	148	87
7	154	137	81
8	146	130	77
9	117	104	61
10	110	98	58
11	110	98	58
12	105	93	55
13	95	85	50
14	88	78	46
15	88	78	46
16	85	76	45
17	49	43	26
18	27	24	14
19	24	22	13
20	10	9	5
21	7	7	4
22	7	7	4
23	5	4	3
24	5	4	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	461	2	128	No	No	No	Yes	No	No	No	No	No	No
2	3	442	2	123	No	No	No	Yes	No	No	No	No	No	No
3	3	433	2	120	No	No	No	Yes	No	No	No	No	No	No
4	3	369	2	102	No	No	No	No	No	No	No	No	No	No
5	3	350	2	97	No	No	No	No	No	No	No	No	No	No
6	3	314	2	87	No	No	No	No	No	No	No	No	No	No
7	3	291	2	81	No	No	No	No	No	No	No	No	No	No
8	3	276	2	77	No	No	No	No	No	No	No	No	No	No
9	3	221	2	61	No	No	No	No	No	No	No	No	No	No
10	3	208	2	58	No	No	No	No	No	No	No	No	No	No
11	3	208	2	58	No	No	No	No	No	No	No	No	No	No
12	3	198	2	55	No	No	No	No	No	No	No	No	No	No
13	3	180	2	50	No	No	No	No	No	No	No	No	No	No
14	3	166	2	46	No	No	No	No	No	No	No	No	No	No
15	3	166	2	46	No	No	No	No	No	No	No	No	No	No
16	3	161	2	45	No	No	No	No	No	No	No	No	No	No
17	3	92	2	26	No	No	No	No	No	No	No	No	No	No
18	3	51	2	14	No	No	No	No	No	No	No	No	No	No
19	3	46	2	13	No	No	No	No	No	No	No	No	No	No
20	3	19	2	5	No	No	No	No	No	No	No	No	No	No
21	3	14	2	4	No	No	No	No	No	No	No	No	No	No
22	3	14	2	4	No	No	No	No	No	No	No	No	No	No
23	3	9	2	3	No	No	No	No	No	No	No	No	No	No
24	3	9	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.8
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:25
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	128
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	589
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Signal Warrants Report For Intersection 2: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	193	216	104	22
2	185	207	100	21
3	181	203	98	21
4	154	173	83	18
5	147	164	79	17
6	131	147	71	15
7	122	136	66	14
8	116	130	62	13
9	93	104	50	11
10	87	97	47	10
11	87	97	47	10
12	83	93	45	9
13	75	84	41	9
14	69	78	37	8
15	69	78	37	8
16	68	76	36	8
17	39	43	21	4
18	21	24	11	2
19	19	22	10	2
20	8	9	4	1
21	6	6	3	1
22	6	6	3	1
23	4	4	2	0
24	4	4	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	409	2	126	No	No	No	Yes	No	No	No	No	No	No
2	2	392	2	121	No	No	No	Yes	No	No	No	No	No	No
3	2	384	2	119	No	No	No	Yes	No	No	No	No	No	No
4	2	327	2	101	No	No	No	No	No	No	No	No	No	No
5	2	311	2	96	No	No	No	No	No	No	No	No	No	No
6	2	278	2	86	No	No	No	No	No	No	No	No	No	No
7	2	258	2	80	No	No	No	No	No	No	No	No	No	No
8	2	246	2	75	No	No	No	No	No	No	No	No	No	No
9	2	197	2	61	No	No	No	No	No	No	No	No	No	No
10	2	184	2	57	No	No	No	No	No	No	No	No	No	No
11	2	184	2	57	No	No	No	No	No	No	No	No	No	No
12	2	176	2	54	No	No	No	No	No	No	No	No	No	No
13	2	159	2	50	No	No	No	No	No	No	No	No	No	No
14	2	147	2	45	No	No	No	No	No	No	No	No	No	No
15	2	147	2	45	No	No	No	No	No	No	No	No	No	No
16	2	144	2	44	No	No	No	No	No	No	No	No	No	No
17	2	82	2	25	No	No	No	No	No	No	No	No	No	No
18	2	45	2	13	No	No	No	No	No	No	No	No	No	No
19	2	41	2	12	No	No	No	No	No	No	No	No	No	No
20	2	17	2	5	No	No	No	No	No	No	No	No	No	No
21	2	12	2	4	No	No	No	No	No	No	No	No	No	No
22	2	12	2	4	No	No	No	No	No	No	No	No	No	No
23	2	8	2	2	No	No	No	No	No	No	No	No	No	No
24	2	8	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	14.7	12.5
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:25	0:04
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	104	22
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	535	535
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 3: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, E
Minor Approaches	W, S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	E	W	S
1	275	208	2	28
2	264	200	2	27
3	259	196	2	26
4	220	166	2	22
5	209	158	2	21
6	187	141	1	19
7	173	131	1	18
8	165	125	1	17
9	132	100	1	13
10	124	94	1	13
11	124	94	1	13
12	118	89	1	12
13	107	81	1	11
14	99	75	1	10
15	99	75	1	10
16	96	73	1	10
17	55	42	0	6
18	30	23	0	3
19	28	21	0	3
20	11	8	0	1
21	8	6	0	1
22	8	6	0	1
23	6	4	0	1
24	6	4	0	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	483	2	30	No	No	No	No	No	No	No	No	No	No
2	2	464	2	29	No	No	No	No	No	No	No	No	No	No
3	2	455	2	28	No	No	No	No	No	No	No	No	No	No
4	2	386	2	24	No	No	No	No	No	No	No	No	No	No
5	2	367	2	23	No	No	No	No	No	No	No	No	No	No
6	2	328	2	20	No	No	No	No	No	No	No	No	No	No
7	2	304	2	19	No	No	No	No	No	No	No	No	No	No
8	2	290	2	18	No	No	No	No	No	No	No	No	No	No
9	2	232	2	14	No	No	No	No	No	No	No	No	No	No
10	2	218	2	14	No	No	No	No	No	No	No	No	No	No
11	2	218	2	14	No	No	No	No	No	No	No	No	No	No
12	2	207	2	13	No	No	No	No	No	No	No	No	No	No
13	2	188	2	12	No	No	No	No	No	No	No	No	No	No
14	2	174	2	11	No	No	No	No	No	No	No	No	No	No
15	2	174	2	11	No	No	No	No	No	No	No	No	No	No
16	2	169	2	11	No	No	No	No	No	No	No	No	No	No
17	2	97	2	6	No	No	No	No	No	No	No	No	No	No
18	2	53	2	3	No	No	No	No	No	No	No	No	No	No
19	2	49	2	3	No	No	No	No	No	No	No	No	No	No
20	2	19	2	1	No	No	No	No	No	No	No	No	No	No
21	2	14	2	1	No	No	No	No	No	No	No	No	No	No
22	2	14	2	1	No	No	No	No	No	No	No	No	No	No
23	2	10	2	1	No	No	No	No	No	No	No	No	No	No
24	2	10	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.8	13.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00	0:06
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	2	28
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	513	513
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 4: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	238	294	10
2	228	282	10
3	224	276	9
4	190	235	8
5	181	223	8
6	162	200	7
7	150	185	6
8	143	176	6
9	114	141	5
10	107	132	5
11	107	132	5
12	102	126	4
13	93	115	4
14	86	106	4
15	86	106	4
16	83	103	4
17	48	59	2
18	26	32	1
19	24	29	1
20	10	12	0
21	7	9	0
22	7	9	0
23	5	6	0
24	5	6	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	532	1	10	No	No	No	No	No	No	No	No	No	No
2	2	510	1	10	No	No	No	No	No	No	No	No	No	No
3	2	500	1	9	No	No	No	No	No	No	No	No	No	No
4	2	425	1	8	No	No	No	No	No	No	No	No	No	No
5	2	404	1	8	No	No	No	No	No	No	No	No	No	No
6	2	362	1	7	No	No	No	No	No	No	No	No	No	No
7	2	335	1	6	No	No	No	No	No	No	No	No	No	No
8	2	319	1	6	No	No	No	No	No	No	No	No	No	No
9	2	255	1	5	No	No	No	No	No	No	No	No	No	No
10	2	239	1	5	No	No	No	No	No	No	No	No	No	No
11	2	239	1	5	No	No	No	No	No	No	No	No	No	No
12	2	228	1	4	No	No	No	No	No	No	No	No	No	No
13	2	208	1	4	No	No	No	No	No	No	No	No	No	No
14	2	192	1	4	No	No	No	No	No	No	No	No	No	No
15	2	192	1	4	No	No	No	No	No	No	No	No	No	No
16	2	186	1	4	No	No	No	No	No	No	No	No	No	No
17	2	107	1	2	No	No	No	No	No	No	No	No	No	No
18	2	58	1	1	No	No	No	No	No	No	No	No	No	No
19	2	53	1	1	No	No	No	No	No	No	No	No	No	No
20	2	22	1	0	No	No	No	No	No	No	No	No	No	No
21	2	16	1	0	No	No	No	No	No	No	No	No	No	No
22	2	16	1	0	No	No	No	No	No	No	No	No	No	No
23	2	11	1	0	No	No	No	No	No	No	No	No	No	No
24	2	11	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	11
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	10
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	542
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Asby Road Cannabis Campus

Vistro File: C:\...\Cumulative v1 with peds.vistro

Scenario 5 Cum AM + Proj

Report File: C:\...\Cum AM + Proj.pdf

7/16/2019

Trip Generation summary**Added Trips**

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Zone				1.000	0.000	50.00	50.00	62	10	72	100.00
Added Trips Total								62	10	72	100.00

Asby Road Cannabis Campus

Vistro File: C:\...\Cumulative v1 with peds.vistro

Report File: C:\...\Cum AM + Proj.pdf

Scenario 5 Cum AM + Proj

7/16/2019

Trip Distribution summary

Zone / Gate	Zone 1: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
2: Gate	5.00	3	5.00	1
3: Gate	45.00	28	45.00	3
4: Gate	17.00	11	17.00	2
5: Gate	5.00	3	5.00	1
6: Gate	28.00	17	28.00	3
Total	100.00	62	100.00	10

Intersection Level Of Service Report

Intersection 1: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 13.6
 Level Of Service: B
 Volume to Capacity (v/c): 0.052

Intersection Setup

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
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	1	0	0	0	1	0
Pocket Length [ft]	60.00	100.00	100.00	100.00	185.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ashby		Shasta Dam Blvd		Shasta Dam Blvd	
Base Volume Input [veh/h]	19	107	143	11	82	195
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	22	0	1	10	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]	22	129	143	12	92	195
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	33	37	3	24	50
Total Analysis Volume [veh/h]	23	133	147	12	95	201
Pedestrian Volume [ped/h]	5		5		5	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.16	0.00	0.00	0.07	0.00
d_M, Delay for Movement [s/veh]	13.59	10.00	0.00	0.00	7.84	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.16	0.55	0.00	0.00	0.22	0.00
95th-Percentile Queue Length [ft/ln]	4.10	13.77	0.00	0.00	5.62	0.00
d_A, Approach Delay [s/veh]	10.53		0.00		2.52	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.91					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 2: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 12.8
 Level Of Service: B
 Volume to Capacity (v/c): 0.006

Intersection Setup

Name	SB Ashby			Ashby								
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SB Ashby			Ashby								
Base Volume Input [veh/h]	5	112	30	15	81	15	13	1	6	29	2	8
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	25	0	0	11	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]	5	137	30	15	92	15	13	1	6	29	2	8
Peak Hour Factor	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760	0.760
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	45	10	5	30	5	4	0	2	10	1	3
Total Analysis Volume [veh/h]	7	180	39	20	121	20	17	1	8	38	3	11
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.00	0.00	0.03	0.00	0.01	0.07	0.01	0.01
d_M, Delay for Movement [s/veh]	7.62	0.00	0.00	7.83	0.00	0.00	12.19	12.48	9.38	12.47	12.75	10.12
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	B
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.05	0.05	0.05	0.14	0.14	0.14	0.30	0.30	0.30
95th-Percentile Queue Length [ft/ln]	0.38	0.38	0.38	1.18	1.18	1.18	3.42	3.42	3.42	7.54	7.54	7.54
d_A, Approach Delay [s/veh]	0.24			0.97			11.33			11.99		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	2.43											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 3: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 12.4
 Level Of Service: B
 Volume to Capacity (v/c): 0.026

Intersection Setup

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left2	Left	Right	Thru	Right	Right2	Left	Right	Right2	Left2	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	WB El Cajone			SB Ashby			SE Los Flores			NB Ashby		
Base Volume Input [veh/h]	0	10	6	100	16	0	0	1	0	26	0	137
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
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	11	0	0	0	0	0	0	0	25
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	10	6	111	16	0	0	1	0	26	0	162
Peak Hour Factor	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790	0.790
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	3	2	35	5	0	0	0	0	8	0	51
Total Analysis Volume [veh/h]	0	13	8	141	20	0	0	1	0	33	0	205
Pedestrian Volume [ped/h]	5			5			5			5		

Intersection Settings

Priority Scheme	Stop	Free	Stop	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	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	12.41	12.41	9.43	0.00	0.00	0.00	12.38	9.42	9.45	7.72	7.72	0.00
Movement LOS	B	B	A	A	A	A	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.07
95th-Percentile Queue Length [ft/ln]	2.74	2.74	2.74	0.00	0.00	0.00	0.09	0.09	0.09	1.87	1.87	1.87
d_A, Approach Delay [s/veh]	11.27			0.00			9.42			1.07		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	1.19											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 4: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 10.9
 Level Of Service: B
 Volume to Capacity (v/c): 0.041

Intersection Setup

Name	Ashby		Ashby		Proj Drwy	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Ashby		Ashby		Proj Drwy	
Base Volume Input [veh/h]	0	155	112	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	0	0	11	25	26
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	155	112	11	25	26
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	42	30	3	7	7
Total Analysis Volume [veh/h]	12	168	122	12	27	28
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	0.01	0.00	0.00	0.00	0.04	0.03
d_M, Delay for Movement [s/veh]	7.59	0.00	0.00	0.00	10.90	9.37
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	0.65	0.65	0.00	0.00	5.85	5.85
d_A, Approach Delay [s/veh]	0.51		0.00		10.12	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.76					
Intersection LOS	B					

Signal Warrants Report For Intersection 1: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	287	155	151
2	276	149	145
3	270	146	142
4	230	124	121
5	218	118	115
6	195	105	103
7	181	98	95
8	172	93	91
9	138	74	72
10	129	70	68
11	129	70	68
12	123	67	65
13	112	60	59
14	103	56	54
15	103	56	54
16	100	54	53
17	57	31	30
18	32	17	17
19	29	16	15
20	11	6	6
21	9	5	5
22	9	5	5
23	6	3	3
24	6	3	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	442	2	151	No	No	Yes	Yes	No	No	No	No	No	No
2	3	425	2	145	No	No	Yes	Yes	No	No	No	No	No	No
3	3	416	2	142	No	No	No	Yes	No	No	No	No	No	No
4	3	354	2	121	No	No	No	Yes	No	No	No	No	No	No
5	3	336	2	115	No	No	No	Yes	No	No	No	No	No	No
6	3	300	2	103	No	No	No	No	No	No	No	No	No	No
7	3	279	2	95	No	No	No	No	No	No	No	No	No	No
8	3	265	2	91	No	No	No	No	No	No	No	No	No	No
9	3	212	2	72	No	No	No	No	No	No	No	No	No	No
10	3	199	2	68	No	No	No	No	No	No	No	No	No	No
11	3	199	2	68	No	No	No	No	No	No	No	No	No	No
12	3	190	2	65	No	No	No	No	No	No	No	No	No	No
13	3	172	2	59	No	No	No	No	No	No	No	No	No	No
14	3	159	2	54	No	No	No	No	No	No	No	No	No	No
15	3	159	2	54	No	No	No	No	No	No	No	No	No	No
16	3	154	2	53	No	No	No	No	No	No	No	No	No	No
17	3	88	2	30	No	No	No	No	No	No	No	No	No	No
18	3	49	2	17	No	No	No	No	No	No	No	No	No	No
19	3	45	2	15	No	No	No	No	No	No	No	No	No	No
20	3	17	2	6	No	No	No	No	No	No	No	No	No	No
21	3	14	2	5	No	No	No	No	No	No	No	No	No	No
22	3	14	2	5	No	No	No	No	No	No	No	No	No	No
23	3	9	2	3	No	No	No	No	No	No	No	No	No	No
24	3	9	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	2	5	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.5
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:26
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	151
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	593
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Signal Warrants Report For Intersection 2: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	122	172	39	20
2	117	165	37	19
3	115	162	37	19
4	98	138	31	16
5	93	131	30	15
6	83	117	27	14
7	77	108	25	13
8	73	103	23	12
9	59	83	19	10
10	55	77	18	9
11	55	77	18	9
12	52	74	17	9
13	48	67	15	8
14	44	62	14	7
15	44	62	14	7
16	43	60	14	7
17	24	34	8	4
18	13	19	4	2
19	12	17	4	2
20	5	7	2	1
21	4	5	1	1
22	4	5	1	1
23	2	3	1	0
24	2	3	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	294	2	59	No	No	No	No	No	No	No	No	No	No
2	2	282	2	56	No	No	No	No	No	No	No	No	No	No
3	2	277	2	56	No	No	No	No	No	No	No	No	No	No
4	2	236	2	47	No	No	No	No	No	No	No	No	No	No
5	2	224	2	45	No	No	No	No	No	No	No	No	No	No
6	2	200	2	41	No	No	No	No	No	No	No	No	No	No
7	2	185	2	38	No	No	No	No	No	No	No	No	No	No
8	2	176	2	35	No	No	No	No	No	No	No	No	No	No
9	2	142	2	29	No	No	No	No	No	No	No	No	No	No
10	2	132	2	27	No	No	No	No	No	No	No	No	No	No
11	2	132	2	27	No	No	No	No	No	No	No	No	No	No
12	2	126	2	26	No	No	No	No	No	No	No	No	No	No
13	2	115	2	23	No	No	No	No	No	No	No	No	No	No
14	2	106	2	21	No	No	No	No	No	No	No	No	No	No
15	2	106	2	21	No	No	No	No	No	No	No	No	No	No
16	2	103	2	21	No	No	No	No	No	No	No	No	No	No
17	2	58	2	12	No	No	No	No	No	No	No	No	No	No
18	2	32	2	6	No	No	No	No	No	No	No	No	No	No
19	2	29	2	6	No	No	No	No	No	No	No	No	No	No
20	2	12	2	3	No	No	No	No	No	No	No	No	No	No
21	2	9	2	2	No	No	No	No	No	No	No	No	No	No
22	2	9	2	2	No	No	No	No	No	No	No	No	No	No
23	2	5	2	1	No	No	No	No	No	No	No	No	No	No
24	2	5	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	12	11.3
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07	0:03
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	39	20
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	353	353
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 3: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, E
Minor Approaches	W, S
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	E	W	S
1	127	188	1	16
2	122	180	1	15
3	119	177	1	15
4	102	150	1	13
5	97	143	1	12
6	86	128	1	11
7	80	118	1	10
8	76	113	1	10
9	61	90	0	8
10	57	85	0	7
11	57	85	0	7
12	55	81	0	7
13	50	73	0	6
14	46	68	0	6
15	46	68	0	6
16	44	66	0	6
17	25	38	0	3
18	14	21	0	2
19	13	19	0	2
20	5	8	0	1
21	4	6	0	0
22	4	6	0	0
23	3	4	0	0
24	3	4	0	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	315	2	17	No	No	No	No	No	No	No	No	No	No
2	2	302	2	16	No	No	No	No	No	No	No	No	No	No
3	2	296	2	16	No	No	No	No	No	No	No	No	No	No
4	2	252	2	14	No	No	No	No	No	No	No	No	No	No
5	2	240	2	13	No	No	No	No	No	No	No	No	No	No
6	2	214	2	12	No	No	No	No	No	No	No	No	No	No
7	2	198	2	11	No	No	No	No	No	No	No	No	No	No
8	2	189	2	11	No	No	No	No	No	No	No	No	No	No
9	2	151	2	8	No	No	No	No	No	No	No	No	No	No
10	2	142	2	7	No	No	No	No	No	No	No	No	No	No
11	2	142	2	7	No	No	No	No	No	No	No	No	No	No
12	2	136	2	7	No	No	No	No	No	No	No	No	No	No
13	2	123	2	6	No	No	No	No	No	No	No	No	No	No
14	2	114	2	6	No	No	No	No	No	No	No	No	No	No
15	2	114	2	6	No	No	No	No	No	No	No	No	No	No
16	2	110	2	6	No	No	No	No	No	No	No	No	No	No
17	2	63	2	3	No	No	No	No	No	No	No	No	No	No
18	2	35	2	2	No	No	No	No	No	No	No	No	No	No
19	2	32	2	2	No	No	No	No	No	No	No	No	No	No
20	2	13	2	1	No	No	No	No	No	No	No	No	No	No
21	2	10	2	0	No	No	No	No	No	No	No	No	No	No
22	2	10	2	0	No	No	No	No	No	No	No	No	No	No
23	2	7	2	0	No	No	No	No	No	No	No	No	No	No
24	2	7	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.4	11.3
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:00	0:03
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	1	16
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	332	332
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Signal Warrants Report For Intersection 4: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	123	166	51
2	118	159	49
3	116	156	48
4	98	133	41
5	93	126	39
6	84	113	35
7	77	105	32
8	74	100	31
9	59	80	24
10	55	75	23
11	55	75	23
12	53	71	22
13	48	65	20
14	44	60	18
15	44	60	18
16	43	58	18
17	25	33	10
18	14	18	6
19	12	17	5
20	5	7	2
21	4	5	2
22	4	5	2
23	2	3	1
24	2	3	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	289	1	51	No	No	No	No	No	No	No	No	No	No
2	2	277	1	49	No	No	No	No	No	No	No	No	No	No
3	2	272	1	48	No	No	No	No	No	No	No	No	No	No
4	2	231	1	41	No	No	No	No	No	No	No	No	No	No
5	2	219	1	39	No	No	No	No	No	No	No	No	No	No
6	2	197	1	35	No	No	No	No	No	No	No	No	No	No
7	2	182	1	32	No	No	No	No	No	No	No	No	No	No
8	2	174	1	31	No	No	No	No	No	No	No	No	No	No
9	2	139	1	24	No	No	No	No	No	No	No	No	No	No
10	2	130	1	23	No	No	No	No	No	No	No	No	No	No
11	2	130	1	23	No	No	No	No	No	No	No	No	No	No
12	2	124	1	22	No	No	No	No	No	No	No	No	No	No
13	2	113	1	20	No	No	No	No	No	No	No	No	No	No
14	2	104	1	18	No	No	No	No	No	No	No	No	No	No
15	2	104	1	18	No	No	No	No	No	No	No	No	No	No
16	2	101	1	18	No	No	No	No	No	No	No	No	No	No
17	2	58	1	10	No	No	No	No	No	No	No	No	No	No
18	2	32	1	6	No	No	No	No	No	No	No	No	No	No
19	2	29	1	5	No	No	No	No	No	No	No	No	No	No
20	2	12	1	2	No	No	No	No	No	No	No	No	No	No
21	2	9	1	2	No	No	No	No	No	No	No	No	No	No
22	2	9	1	2	No	No	No	No	No	No	No	No	No	No
23	2	5	1	1	No	No	No	No	No	No	No	No	No	No
24	2	5	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.1
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:08
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	51
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	340
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	No

Asby Road Cannabis Campus

Vistro File: C:\...\Cumulative v1 with peds.vistro

Scenario 6 Cum PM + Proj

Report File: C:\...\Cum PM + Proj.pdf

7/16/2019

Trip Generation summary**Added Trips**

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Zone				1.000	0.000	50.00	50.00	22	51	73	100.00
Added Trips Total								22	51	73	100.00

Asby Road Cannabis Campus

Vistro File: C:\...\Cumulative v1 with peds.vistro

Report File: C:\...\Cum PM + Proj.pdf

Scenario 6 Cum PM + Proj

7/16/2019

Trip Distribution summary

Zone / Gate	Zone 1: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
2: Gate	5.00	1	5.00	3
3: Gate	45.00	10	45.00	22
4: Gate	17.00	4	17.00	9
5: Gate	5.00	1	5.00	3
6: Gate	28.00	6	28.00	14
Total	100.00	22	100.00	51

Intersection Level Of Service Report
Intersection 5: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 21.2
 Level Of Service: C
 Volume to Capacity (v/c): 0.268

Intersection Setup

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	120.0	100.0	100.0	72.00	100.0	100.0	120.0	100.0	100.0	340.0	100.0	85.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Base Volume Input [veh/h]	8	8	30	66	14	105	115	105	22	60	56	77
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	2	0	0	0	2	0	0	6	6
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]	8	8	30	68	14	105	115	107	22	60	62	83
Peak Hour Factor	0.840	0.840	0.840	0.840	0.840	0.840	0.840	0.840	0.840	0.840	0.840	0.840
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	2	9	20	4	31	34	32	7	18	18	25
Total Analysis Volume [veh/h]	10	10	36	81	17	125	137	127	26	71	74	99
Pedestrian Volume [ped/h]	5			5			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	0.04	0.04	0.04	0.27	0.05	0.13	0.10	0.00	0.00	0.05	0.00	0.00
d_M, Delay for Movement [s/veh]	21.23	18.21	9.60	21.23	17.39	9.82	7.98	0.00	0.00	7.78	0.00	0.00
Movement LOS	C	C	A	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.25	0.25	1.06	0.67	0.67	0.34	0.00	0.00	0.16	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.36	6.18	6.18	26.47	16.81	16.81	8.49	0.00	0.00	4.10	0.00	0.00
d_A, Approach Delay [s/veh]	13.21			14.54			3.77			2.26		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	6.92											
Intersection LOS	C											

Signal Warrants Report For Intersection 5: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	205	244	187	46
2	199	237	181	45
3	195	232	178	44
4	182	217	166	41
5	162	193	148	36
6	160	190	146	36
7	158	188	144	35
8	144	171	131	32
9	141	168	129	32
10	139	166	127	31
11	121	144	110	27
12	113	134	103	25
13	111	132	101	25
14	82	98	75	18
15	82	98	75	18
16	57	68	52	13
17	33	39	30	7
18	33	39	30	7
19	18	22	17	4
20	10	12	9	2
21	6	7	6	1
22	2	2	2	0
23	2	2	2	0
24	2	2	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	5	449	4	233	No	No	Yes	Yes	No	No	No	No	No	No
2	5	436	4	226	No	No	Yes	Yes	No	No	No	No	No	No
3	5	427	4	222	No	No	Yes	Yes	No	No	No	No	No	No
4	5	399	4	207	No	No	No	Yes	No	No	No	No	No	No
5	5	355	4	184	No	No	No	Yes	No	No	No	No	No	No
6	5	350	4	182	No	No	No	Yes	No	No	No	No	No	No
7	5	346	4	179	No	No	No	Yes	No	No	No	No	No	No
8	5	315	4	163	No	No	No	No	No	No	No	No	No	No
9	5	309	4	161	No	No	No	No	No	No	No	No	No	No
10	5	305	4	158	No	No	No	No	No	No	No	No	No	No
11	5	265	4	137	No	No	No	No	No	No	No	No	No	No
12	5	247	4	128	No	No	No	No	No	No	No	No	No	No
13	5	243	4	126	No	No	No	No	No	No	No	No	No	No
14	5	180	4	93	No	No	No	No	No	No	No	No	No	No
15	5	180	4	93	No	No	No	No	No	No	No	No	No	No
16	5	125	4	65	No	No	No	No	No	No	No	No	No	No
17	5	72	4	37	No	No	No	No	No	No	No	No	No	No
18	5	72	4	37	No	No	No	No	No	No	No	No	No	No
19	5	40	4	21	No	No	No	No	No	No	No	No	No	No
20	5	22	4	11	No	No	No	No	No	No	No	No	No	No
21	5	13	4	7	No	No	No	No	No	No	No	No	No	No
22	5	4	4	2	No	No	No	No	No	No	No	No	No	No
23	5	4	4	2	No	No	No	No	No	No	No	No	No	No
24	5	4	4	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	3	7	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	14.5	13.2
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:45	0:10
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	187	46
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	682	682
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Intersection Level Of Service Report
Intersection 5: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 13.9
 Level Of Service: B
 Volume to Capacity (v/c): 0.084

Intersection Setup

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	120.0	100.0	100.0	72.00	100.0	100.0	120.0	100.0	100.0	340.0	100.0	85.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Base Volume Input [veh/h]	7	6	45	28	3	60	71	106	4	14	112	45
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	7	0	0	0	7	0	0	4	4
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	6	45	35	3	60	71	113	4	14	116	49
Peak Hour Factor	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	2	12	9	1	16	19	30	1	4	31	13
Total Analysis Volume [veh/h]	7	6	48	37	3	64	76	120	4	15	123	52
Pedestrian Volume [ped/h]	5			5			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	0.05	0.08	0.01	0.07	0.06	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	13.84	13.64	9.33	13.90	13.14	9.37	7.84	0.00	0.00	7.60	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.22	0.22	0.27	0.25	0.25	0.18	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.29	5.40	5.40	6.82	6.32	6.32	4.50	0.00	0.00	0.81	0.00	0.00
d_A, Approach Delay [s/veh]	10.27			11.09			2.98			0.60		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	4.49											
Intersection LOS	B											

Signal Warrants Report For Intersection 5: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	179	188	98	58
2	174	182	95	56
3	170	179	93	55
4	159	167	87	52
5	141	149	77	46
6	140	147	76	45
7	138	145	75	45
8	125	132	69	41
9	124	130	68	40
10	122	128	67	39
11	106	111	58	34
12	98	103	54	32
13	97	102	53	31
14	72	75	39	23
15	72	75	39	23
16	50	53	27	16
17	29	30	16	9
18	29	30	16	9
19	16	17	9	5
20	9	9	5	3
21	5	6	3	2
22	2	2	1	1
23	2	2	1	1
24	2	2	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	5	367	4	156	No	No	No	No	No	No	No	No	No	No
2	5	356	4	151	No	No	No	No	No	No	No	No	No	No
3	5	349	4	148	No	No	No	No	No	No	No	No	No	No
4	5	326	4	139	No	No	No	No	No	No	No	No	No	No
5	5	290	4	123	No	No	No	No	No	No	No	No	No	No
6	5	287	4	121	No	No	No	No	No	No	No	No	No	No
7	5	283	4	120	No	No	No	No	No	No	No	No	No	No
8	5	257	4	110	No	No	No	No	No	No	No	No	No	No
9	5	254	4	108	No	No	No	No	No	No	No	No	No	No
10	5	250	4	106	No	No	No	No	No	No	No	No	No	No
11	5	217	4	92	No	No	No	No	No	No	No	No	No	No
12	5	201	4	86	No	No	No	No	No	No	No	No	No	No
13	5	199	4	84	No	No	No	No	No	No	No	No	No	No
14	5	147	4	62	No	No	No	No	No	No	No	No	No	No
15	5	147	4	62	No	No	No	No	No	No	No	No	No	No
16	5	103	4	43	No	No	No	No	No	No	No	No	No	No
17	5	59	4	25	No	No	No	No	No	No	No	No	No	No
18	5	59	4	25	No	No	No	No	No	No	No	No	No	No
19	5	33	4	14	No	No	No	No	No	No	No	No	No	No
20	5	18	4	8	No	No	No	No	No	No	No	No	No	No
21	5	11	4	5	No	No	No	No	No	No	No	No	No	No
22	5	4	4	2	No	No	No	No	No	No	No	No	No	No
23	5	4	4	2	No	No	No	No	No	No	No	No	No	No
24	5	4	4	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.1	10.3
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:18	0:09
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	98	58
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	523	523
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Intersection Level Of Service Report
Intersection 5: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 23.5
 Level Of Service: C
 Volume to Capacity (v/c): 0.301

Intersection Setup

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	120.0	100.0	100.0	72.00	100.0	100.0	120.0	100.0	100.0	340.0	100.0	85.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Base Volume Input [veh/h]	8	8	30	66	14	105	115	105	22	60	56	77
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	2	0	0	0	2	0	0	6	6
Site-Generated Trips [veh/h]	0	3	0	2	1	3	17	0	0	0	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	11	30	70	15	108	132	107	22	60	62	94
Peak Hour Factor	0.840	0.840	0.840	0.840	0.840	0.840	0.840	0.840	0.840	0.840	0.840	0.840
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	3	9	21	4	32	39	32	7	18	18	28
Total Analysis Volume [veh/h]	10	13	36	83	18	129	157	127	26	71	74	112
Pedestrian Volume [ped/h]	5			5			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	0.05	0.05	0.04	0.30	0.06	0.14	0.12	0.00	0.00	0.05	0.00	0.00
d_M, Delay for Movement [s/veh]	23.03	19.58	9.78	23.54	18.34	9.94	8.07	0.00	0.00	7.78	0.00	0.00
Movement LOS	C	C	A	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.30	0.30	1.23	0.72	0.72	0.40	0.00	0.00	0.16	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.73	7.50	7.50	30.67	18.10	18.10	10.01	0.00	0.00	4.10	0.00	0.00
d_A, Approach Delay [s/veh]	14.18			15.50			4.09			2.15		
Approach LOS	B			C			A			A		
d_I, Intersection Delay [s/veh]	7.27											
Intersection LOS	C											

Signal Warrants Report For Intersection 5: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	216	261	193	49
2	210	253	187	48
3	205	248	183	47
4	192	232	172	44
5	171	206	152	39
6	168	204	151	38
7	166	201	149	38
8	151	183	135	34
9	149	180	133	34
10	147	177	131	33
11	127	154	114	29
12	119	144	106	27
13	117	141	104	26
14	86	104	77	20
15	86	104	77	20
16	60	73	54	14
17	35	42	31	8
18	35	42	31	8
19	19	23	17	4
20	11	13	10	2
21	6	8	6	1
22	2	3	2	0
23	2	3	2	0
24	2	3	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	5	477	4	242	No	No	Yes	Yes	No	No	No	No	No	No
2	5	463	4	235	No	No	Yes	Yes	No	No	No	No	No	No
3	5	453	4	230	No	No	Yes	Yes	No	No	No	No	No	No
4	5	424	4	216	No	No	Yes	Yes	No	No	No	No	No	No
5	5	377	4	191	No	No	No	Yes	No	No	No	No	No	No
6	5	372	4	189	No	No	No	Yes	No	No	No	No	No	No
7	5	367	4	187	No	No	No	Yes	No	No	No	No	No	No
8	5	334	4	169	No	No	No	No	No	No	No	No	No	No
9	5	329	4	167	No	No	No	No	No	No	No	No	No	No
10	5	324	4	164	No	No	No	No	No	No	No	No	No	No
11	5	281	4	143	No	No	No	No	No	No	No	No	No	No
12	5	263	4	133	No	No	No	No	No	No	No	No	No	No
13	5	258	4	130	No	No	No	No	No	No	No	No	No	No
14	5	190	4	97	No	No	No	No	No	No	No	No	No	No
15	5	190	4	97	No	No	No	No	No	No	No	No	No	No
16	5	133	4	68	No	No	No	No	No	No	No	No	No	No
17	5	77	4	39	No	No	No	No	No	No	No	No	No	No
18	5	77	4	39	No	No	No	No	No	No	No	No	No	No
19	5	42	4	21	No	No	No	No	No	No	No	No	No	No
20	5	24	4	12	No	No	No	No	No	No	No	No	No	No
21	5	14	4	7	No	No	No	No	No	No	No	No	No	No
22	5	5	4	2	No	No	No	No	No	No	No	No	No	No
23	5	5	4	2	No	No	No	No	No	No	No	No	No	No
24	5	5	4	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	4	7	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	15.5	14.2
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:49	0:11
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	193	49
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	719	719
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Intersection Level Of Service Report

Intersection 5: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 14.4
 Level Of Service: B
 Volume to Capacity (v/c): 0.018

Intersection Setup

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	120.0	100.0	100.0	72.00	100.0	100.0	120.0	100.0	100.0	340.0	100.0	85.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Base Volume Input [veh/h]	7	6	45	28	3	60	71	106	4	14	112	45
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	7	0	0	0	7	0	0	4	4
Site-Generated Trips [veh/h]	0	1	0	9	3	14	6	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	7	45	44	6	74	77	113	4	14	116	53
Peak Hour Factor	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	2	12	12	2	20	20	30	1	4	31	14
Total Analysis Volume [veh/h]	7	7	48	47	6	79	82	120	4	15	123	56
Pedestrian Volume [ped/h]	5			5			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	0.05	0.11	0.01	0.09	0.06	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	14.42	13.89	9.35	14.38	13.44	9.50	7.87	0.00	0.00	7.60	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.23	0.23	0.36	0.34	0.34	0.20	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.37	5.64	5.64	9.12	8.43	8.43	4.89	0.00	0.00	0.81	0.00	0.00
d_A, Approach Delay [s/veh]	10.44			11.42			3.13			0.59		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	4.90											
Intersection LOS	B											

Signal Warrants Report For Intersection 5: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	183	194	124	59
2	178	188	120	57
3	174	184	118	56
4	163	173	110	53
5	145	153	98	47
6	143	151	97	46
7	141	149	95	45
8	128	136	87	41
9	126	134	86	41
10	124	132	84	40
11	108	114	73	35
12	101	107	68	32
13	99	105	67	32
14	73	78	50	24
15	73	78	50	24
16	51	54	35	17
17	29	31	20	9
18	29	31	20	9
19	16	17	11	5
20	9	10	6	3
21	5	6	4	2
22	2	2	1	1
23	2	2	1	1
24	2	2	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	5	377	4	183	No	No	No	Yes	No	No	No	No	No	No
2	5	366	4	177	No	No	No	Yes	No	No	No	No	No	No
3	5	358	4	174	No	No	No	Yes	No	No	No	No	No	No
4	5	336	4	163	No	No	No	No	No	No	No	No	No	No
5	5	298	4	145	No	No	No	No	No	No	No	No	No	No
6	5	294	4	143	No	No	No	No	No	No	No	No	No	No
7	5	290	4	140	No	No	No	No	No	No	No	No	No	No
8	5	264	4	128	No	No	No	No	No	No	No	No	No	No
9	5	260	4	127	No	No	No	No	No	No	No	No	No	No
10	5	256	4	124	No	No	No	No	No	No	No	No	No	No
11	5	222	4	108	No	No	No	No	No	No	No	No	No	No
12	5	208	4	100	No	No	No	No	No	No	No	No	No	No
13	5	204	4	99	No	No	No	No	No	No	No	No	No	No
14	5	151	4	74	No	No	No	No	No	No	No	No	No	No
15	5	151	4	74	No	No	No	No	No	No	No	No	No	No
16	5	105	4	52	No	No	No	No	No	No	No	No	No	No
17	5	60	4	29	No	No	No	No	No	No	No	No	No	No
18	5	60	4	29	No	No	No	No	No	No	No	No	No	No
19	5	33	4	16	No	No	No	No	No	No	No	No	No	No
20	5	19	4	9	No	No	No	No	No	No	No	No	No	No
21	5	11	4	6	No	No	No	No	No	No	No	No	No	No
22	5	4	4	2	No	No	No	No	No	No	No	No	No	No
23	5	4	4	2	No	No	No	No	No	No	No	No	No	No
24	5	4	4	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.4	10.4
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:23	0:10
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	124	59
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	560	560
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Intersection Level Of Service Report
Intersection 5: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 21.5
 Level Of Service: C
 Volume to Capacity (v/c): 0.048

Intersection Setup

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	120.0	100.0	100.0	72.00	100.0	100.0	120.0	100.0	100.0	340.0	100.0	85.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Base Volume Input [veh/h]	10	9	33	66	18	103	119	95	35	89	59	77
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	2	0	0	0	2	0	0	6	6
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	9	33	68	18	103	119	97	35	89	65	83
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	3	2	9	18	5	28	32	26	10	24	18	23
Total Analysis Volume [veh/h]	11	10	36	74	20	112	129	105	38	97	71	90
Pedestrian Volume [ped/h]	5			5			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	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.04	0.04	0.25	0.07	0.12	0.09	0.00	0.00	0.07	0.00	0.00
d_M, Delay for Movement [s/veh]	21.54	18.50	9.51	21.49	17.94	9.86	7.93	0.00	0.00	7.81	0.00	0.00
Movement LOS	C	C	A	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.15	0.25	0.25	0.98	0.66	0.66	0.31	0.00	0.00	0.23	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.77	6.18	6.18	24.61	16.60	16.60	7.85	0.00	0.00	5.66	0.00	0.00
d_A, Approach Delay [s/veh]	13.41			14.82			3.76			2.94		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	7.06											
Intersection LOS	C											

Signal Warrants Report For Intersection 5: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	237	251	189	52
2	230	243	183	50
3	225	238	180	49
4	211	223	168	46
5	187	198	149	41
6	185	196	147	41
7	182	193	146	40
8	166	176	132	36
9	164	173	130	36
10	161	171	129	35
11	140	148	112	31
12	130	138	104	29
13	128	136	102	28
14	95	100	76	21
15	95	100	76	21
16	66	70	53	15
17	38	40	30	8
18	38	40	30	8
19	21	23	17	5
20	12	13	9	3
21	7	8	6	2
22	2	3	2	1
23	2	3	2	1
24	2	3	2	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	5	488	4	241	No	Yes	Yes	Yes	No	No	No	No	No	No
2	5	473	4	233	No	No	Yes	Yes	No	No	No	No	No	No
3	5	463	4	229	No	No	Yes	Yes	No	No	No	No	No	No
4	5	434	4	214	No	No	Yes	Yes	No	No	No	No	No	No
5	5	385	4	190	No	No	No	Yes	No	No	No	No	No	No
6	5	381	4	188	No	No	No	Yes	No	No	No	No	No	No
7	5	375	4	186	No	No	No	Yes	No	No	No	No	No	No
8	5	342	4	168	No	No	No	Yes	No	No	No	No	No	No
9	5	337	4	166	No	No	No	Yes	No	No	No	No	No	No
10	5	332	4	164	No	No	No	No	No	No	No	No	No	No
11	5	288	4	143	No	No	No	No	No	No	No	No	No	No
12	5	268	4	133	No	No	No	No	No	No	No	No	No	No
13	5	264	4	130	No	No	No	No	No	No	No	No	No	No
14	5	195	4	97	No	No	No	No	No	No	No	No	No	No
15	5	195	4	97	No	No	No	No	No	No	No	No	No	No
16	5	136	4	68	No	No	No	No	No	No	No	No	No	No
17	5	78	4	38	No	No	No	No	No	No	No	No	No	No
18	5	78	4	38	No	No	No	No	No	No	No	No	No	No
19	5	44	4	22	No	No	No	No	No	No	No	No	No	No
20	5	25	4	12	No	No	No	No	No	No	No	No	No	No
21	5	15	4	8	No	No	No	No	No	No	No	No	No	No
22	5	5	4	3	No	No	No	No	No	No	No	No	No	No
23	5	5	4	3	No	No	No	No	No	No	No	No	No	No
24	5	5	4	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	1	4	9	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	14.8	13.4
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:46	0:11
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	189	52
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	729	729
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Intersection Level Of Service Report
Intersection 5: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 15.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.096

Intersection Setup

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	120.0	100.0	100.0	72.00	100.0	100.0	120.0	100.0	100.0	340.0	100.0	85.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Base Volume Input [veh/h]	7	10	77	28	3	54	78	106	2	18	120	65
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	7	0	0	0	7	0	0	4	4
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	10	77	35	3	54	78	113	2	18	124	69
Peak Hour Factor	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	3	20	9	1	14	21	30	1	5	33	18
Total Analysis Volume [veh/h]	7	11	82	37	3	57	83	120	2	19	132	73
Pedestrian Volume [ped/h]	5			5			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	0.03	0.09	0.10	0.01	0.06	0.06	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	14.37	14.61	9.62	15.32	13.50	9.39	7.94	0.00	0.00	7.60	0.00	0.00
Movement LOS	B	B	A	C	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.40	0.40	0.32	0.23	0.23	0.20	0.00	0.00	0.04	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.37	10.05	10.05	7.90	5.73	5.73	5.07	0.00	0.00	1.03	0.00	0.00
d_A, Approach Delay [s/veh]	10.50			11.78			3.21			0.64		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	4.79											
Intersection LOS	C											

Signal Warrants Report For Intersection 5: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	211	193	92	94
2	205	187	89	91
3	200	183	87	89
4	188	172	82	84
5	167	152	73	74
6	165	151	72	73
7	162	149	71	72
8	148	135	64	66
9	146	133	63	65
10	143	131	63	64
11	124	114	54	55
12	116	106	51	52
13	114	104	50	51
14	84	77	37	38
15	84	77	37	38
16	59	54	26	26
17	34	31	15	15
18	34	31	15	15
19	19	17	8	8
20	11	10	5	5
21	6	6	3	3
22	2	2	1	1
23	2	2	1	1
24	2	2	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	5	404	4	186	No	No	No	No	No	No	No	No	No	No
2	5	392	4	180	No	No	No	No	No	No	No	No	No	No
3	5	383	4	176	No	No	No	No	No	No	No	No	No	No
4	5	360	4	166	No	No	No	No	No	No	No	No	No	No
5	5	319	4	147	No	No	No	No	No	No	No	No	No	No
6	5	316	4	145	No	No	No	No	No	No	No	No	No	No
7	5	311	4	143	No	No	No	No	No	No	No	No	No	No
8	5	283	4	130	No	No	No	No	No	No	No	No	No	No
9	5	279	4	128	No	No	No	No	No	No	No	No	No	No
10	5	274	4	127	No	No	No	No	No	No	No	No	No	No
11	5	238	4	109	No	No	No	No	No	No	No	No	No	No
12	5	222	4	103	No	No	No	No	No	No	No	No	No	No
13	5	218	4	101	No	No	No	No	No	No	No	No	No	No
14	5	161	4	75	No	No	No	No	No	No	No	No	No	No
15	5	161	4	75	No	No	No	No	No	No	No	No	No	No
16	5	113	4	52	No	No	No	No	No	No	No	No	No	No
17	5	65	4	30	No	No	No	No	No	No	No	No	No	No
18	5	65	4	30	No	No	No	No	No	No	No	No	No	No
19	5	36	4	16	No	No	No	No	No	No	No	No	No	No
20	5	21	4	10	No	No	No	No	No	No	No	No	No	No
21	5	12	4	6	No	No	No	No	No	No	No	No	No	No
22	5	4	4	2	No	No	No	No	No	No	No	No	No	No
23	5	4	4	2	No	No	No	No	No	No	No	No	No	No
24	5	4	4	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.8	10.5
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:18	0:16
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	92	94
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	590	590
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Intersection Level Of Service Report

Intersection 5: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 23.7
 Level Of Service: C
 Volume to Capacity (v/c): 0.284

Intersection Setup

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	120.0	100.0	100.0	72.00	100.0	100.0	120.0	100.0	100.0	340.0	100.0	85.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Base Volume Input [veh/h]	10	9	33	66	18	103	119	95	35	89	59	77
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	2	0	0	0	2	0	0	6	6
Site-Generated Trips [veh/h]	0	3	0	2	1	3	17	0	0	0	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	12	33	70	19	106	136	97	35	89	65	94
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	3	3	9	19	5	29	37	26	10	24	18	26
Total Analysis Volume [veh/h]	11	13	36	76	21	115	148	105	38	97	71	102
Pedestrian Volume [ped/h]	5			5			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	0.05	0.05	0.04	0.28	0.07	0.12	0.11	0.00	0.00	0.07	0.00	0.00
d_M, Delay for Movement [s/veh]	23.27	19.83	9.69	23.69	18.89	9.98	8.01	0.00	0.00	7.81	0.00	0.00
Movement LOS	C	C	A	C	C	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.17	0.30	0.30	1.14	0.71	0.71	0.37	0.00	0.00	0.23	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.16	7.50	7.50	28.38	17.85	17.85	9.25	0.00	0.00	5.66	0.00	0.00
d_A, Approach Delay [s/veh]	14.38			15.78			4.07			2.80		
Approach LOS	B			C			A			A		
d_I, Intersection Delay [s/veh]	7.38											
Intersection LOS	C											

Signal Warrants Report For Intersection 5: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	248	268	195	55
2	241	260	189	53
3	236	255	185	52
4	221	239	174	49
5	196	212	154	43
6	193	209	152	43
7	191	206	150	42
8	174	188	137	39
9	171	185	135	38
10	169	182	133	37
11	146	158	115	32
12	136	147	107	30
13	134	145	105	30
14	99	107	78	22
15	99	107	78	22
16	69	75	55	15
17	40	43	31	9
18	40	43	31	9
19	22	24	18	5
20	12	13	10	3
21	7	8	6	2
22	2	3	2	1
23	2	3	2	1
24	2	3	2	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	5	516	4	250	No	Yes	Yes	Yes	No	No	No	Yes	No	No
2	5	501	4	242	No	Yes	Yes	Yes	No	No	No	No	No	No
3	5	491	4	237	No	Yes	Yes	Yes	No	No	No	No	No	No
4	5	460	4	223	No	No	Yes	Yes	No	No	No	No	No	No
5	5	408	4	197	No	No	No	Yes	No	No	No	No	No	No
6	5	402	4	195	No	No	No	Yes	No	No	No	No	No	No
7	5	397	4	192	No	No	No	Yes	No	No	No	No	No	No
8	5	362	4	176	No	No	No	Yes	No	No	No	No	No	No
9	5	356	4	173	No	No	No	Yes	No	No	No	No	No	No
10	5	351	4	170	No	No	No	Yes	No	No	No	No	No	No
11	5	304	4	147	No	No	No	No	No	No	No	No	No	No
12	5	283	4	137	No	No	No	No	No	No	No	No	No	No
13	5	279	4	135	No	No	No	No	No	No	No	No	No	No
14	5	206	4	100	No	No	No	No	No	No	No	No	No	No
15	5	206	4	100	No	No	No	No	No	No	No	No	No	No
16	5	144	4	70	No	No	No	No	No	No	No	No	No	No
17	5	83	4	40	No	No	No	No	No	No	No	No	No	No
18	5	83	4	40	No	No	No	No	No	No	No	No	No	No
19	5	46	4	23	No	No	No	No	No	No	No	No	No	No
20	5	25	4	13	No	No	No	No	No	No	No	No	No	No
21	5	15	4	8	No	No	No	No	No	No	No	No	No	No
22	5	5	4	3	No	No	No	No	No	No	No	No	No	No
23	5	5	4	3	No	No	No	No	No	No	No	No	No	No
24	5	5	4	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	3	4	10	0	0	0	1	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	15.8	14.4
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	0:51	0:13
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	195	55
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	766	766
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

Intersection Level Of Service Report
Intersection 5: New Intersection

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 15.9
 Level Of Service: C
 Volume to Capacity (v/c): 0.125

Intersection Setup

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	120.0	100.0	100.0	72.00	100.0	100.0	120.0	100.0	100.0	340.0	100.0	85.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	Ashby			Ashby			Pine Grove			Pine Grove		
Base Volume Input [veh/h]	7	10	77	28	3	54	78	106	2	18	120	65
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	7	0	0	0	7	0	0	4	4
Site-Generated Trips [veh/h]	0	1	0	9	3	14	6	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	11	77	44	6	68	84	113	2	18	124	73
Peak Hour Factor	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	2	3	20	12	2	18	22	30	1	5	33	19
Total Analysis Volume [veh/h]	7	12	82	47	6	72	89	120	2	19	132	78
Pedestrian Volume [ped/h]	5			5			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	0.03	0.09	0.13	0.01	0.08	0.07	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	15.00	14.89	9.65	15.94	13.81	9.52	7.97	0.00	0.00	7.60	0.00	0.00
Movement LOS	C	B	A	C	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.41	0.41	0.42	0.31	0.31	0.22	0.00	0.00	0.04	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.46	10.37	10.37	10.61	7.86	7.86	5.49	0.00	0.00	1.03	0.00	0.00
d_A, Approach Delay [s/veh]	10.65			12.14			3.36			0.63		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	5.17											
Intersection LOS	C											

Signal Warrants Report For Intersection 5: New Intersection

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	N	S
1	215	199	118	95
2	209	193	114	92
3	204	189	112	90
4	191	177	105	85
5	170	157	93	75
6	168	155	92	74
7	166	153	91	73
8	151	139	83	67
9	148	137	81	66
10	146	135	80	65
11	127	117	70	56
12	118	109	65	52
13	116	107	64	51
14	86	80	47	38
15	86	80	47	38
16	60	56	33	27
17	34	32	19	15
18	34	32	19	15
19	19	18	11	9
20	11	10	6	5
21	6	6	4	3
22	2	2	1	1
23	2	2	1	1
24	2	2	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	5	414	4	213	No	No	No	Yes	No	No	No	No	No	No
2	5	402	4	206	No	No	No	Yes	No	No	No	No	No	No
3	5	393	4	202	No	No	No	Yes	No	No	No	No	No	No
4	5	368	4	190	No	No	No	No	No	No	No	No	No	No
5	5	327	4	168	No	No	No	No	No	No	No	No	No	No
6	5	323	4	166	No	No	No	No	No	No	No	No	No	No
7	5	319	4	164	No	No	No	No	No	No	No	No	No	No
8	5	290	4	150	No	No	No	No	No	No	No	No	No	No
9	5	285	4	147	No	No	No	No	No	No	No	No	No	No
10	5	281	4	145	No	No	No	No	No	No	No	No	No	No
11	5	244	4	126	No	No	No	No	No	No	No	No	No	No
12	5	227	4	117	No	No	No	No	No	No	No	No	No	No
13	5	223	4	115	No	No	No	No	No	No	No	No	No	No
14	5	166	4	85	No	No	No	No	No	No	No	No	No	No
15	5	166	4	85	No	No	No	No	No	No	No	No	No	No
16	5	116	4	60	No	No	No	No	No	No	No	No	No	No
17	5	66	4	34	No	No	No	No	No	No	No	No	No	No
18	5	66	4	34	No	No	No	No	No	No	No	No	No	No
19	5	37	4	20	No	No	No	No	No	No	No	No	No	No
20	5	21	4	11	No	No	No	No	No	No	No	No	No	No
21	5	12	4	7	No	No	No	No	No	No	No	No	No	No
22	5	4	4	2	No	No	No	No	No	No	No	No	No	No
23	5	4	4	2	No	No	No	No	No	No	No	No	No	No
24	5	4	4	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	12.1	10.6
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:23	0:16
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	118	95
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	627	627
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	No	

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