Transportation Impact Study for the Valley Ranch 4 Commercial Development

Prepared for the City of Williams

Submitted by
W-Trans

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Executive Summary

The proposed Valley Ranch 4 Commercial Development is envisioned to include up to 169,030 square feet of commercial floor area, consisting of 68,570 square feet of general retail uses, 13,272 square feet of automobile-oriented specialty retail uses, 34,284 square feet of general office floor area, and a hotel of 52,904 square feet. At buildout, the proposed project has the potential to result in 11,142 new trips on local streets per day, including 1,052 new trips during the a.m. peak hour and 724 new trips during the p.m. peak hour.

Analysis indicates that the study intersections of E Street with the I-5 North Ramps, I-5 South Ramps, and Vann Street operate acceptably per the applicable City standards under Existing and Baseline Conditions but would deteriorate to LOS F operation during both peak hours with the addition of project traffic, translating to an adverse effect for the project. However, up to 34 percent of the proposed development potential could be operational before improvements are needed assuming that the Valley Ranch 3 Residential Subdivision is approved. Therefore, to offset the adverse effects, the applicant should fund the following improvements based on the phasing indicated.

- Install all-way stop controls, a traffic signal, or modern roundabout at the I-5 South Ramps prior to reaching occupation of 34 percent of the total proposed development.
- Install a traffic signal or modern roundabout at E Street/Vann Street prior to reaching 56 percent occupation of the total proposed development.
- Install all-way stop controls, a traffic signal, or modern roundabout at the I-5 North Ramps prior to reaching occupation of 60 percent of the total proposed development.

As detailed in *City of Williams General Plan Update – Final Environmental Impact Report* (EIR), all three existing study intersections would need to be signalized to support buildout of the City's General Plan. With the planned installation of traffic signals and other geometric improvements, all study intersections would operate acceptably under the anticipated future volumes, which includes project traffic. To offset the cumulative effects of project traffic and help fund the planned circulation improvements identified in the General Plan, the applicant should pay the required development impact fees to the City, though a credit may be appropriate depending on the improvements made as part of the project.

City staff has expressed interest in modern roundabouts as alternatives to the planned future installation of traffic signals at the study intersections to support buildout of the General Plan; therefore, it is recommended that Intersection Control Evaluations (ICEs) be performed for the ramp terminals and a feasibility study be prepared for E Street/Vann Street to explore the suitability of roundabouts at these locations.

Since the City of Williams has not yet established thresholds of significance related to VMT nor is there a regional travel demand model that contains VMT information, the project-related VMT impacts were assessed qualitatively based on guidance provided by the California Governor's Office of Planning and Research (OPR) in the publication *Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory*, 2018. Given that the proposed project site is located within an acceptable walking and biking distance of Downtown and other points of interest, is primarily anticipated to generate pass-by trips from I-5 and would provide shopping and employment opportunities closer to the local housing supply for which residents would otherwise have to travel to other Cities, the development would reasonably be expected to have a less-than-significant transportation impact on VMT. In an effort to minimize the potential for the project to have a VMT impact, it is recommended that the employment TDM measures identified in this report such as carpool incentives, active transportation incentives, pedestrian and bicycle connections, and EV charging stations be incorporated into the project.

Pedestrian facilities would be adequate upon completion of sidewalks along the project frontage and on the project streets to be constructed as part of the project. Project patrons would be able to walk to surrounding points of interest and the nearby transit stop south of E Street/Marguerite Street. It is recommended that the Vann

Street/Vada Court intersection include a crosswalk with ADA-compliant curb ramps on the Vann Court leg; all new curb ramps should comply with ADA standards.

To facilitate access to the site for bicyclists and connect to the planned future Class II bike lanes on E Street, it is recommended that the design for the new section of Vann Street include Class II bike lanes. On-site bicycle parking should be provided for each development at five percent of the total required vehicle parking spaces.

The new Vann Street/Vann Court intersection should be stop-controlled on the Vann Court approach. To result in adequate sight lines at the intersections of Vann Street with Vada Court and Vann Court, it is recommended that any new signage to be located near the intersections be placed outside of the vision triangle of a driver waiting on the minor street.

Introduction

This report presents an analysis of the potential transportation impacts and traffic effects that would be associated with the proposed Valley Ranch 4 Commercial Development east of I-5 and north of E Street in the City of Williams. The traffic study was completed in accordance with the criteria established by the City of Williams, reflects a scope of work approved by City staff, and is consistent with standard traffic engineering techniques.

Prelude

The purpose of a traffic impact study is to provide City staff and policy makers with data they can use to make an informed decision regarding the potential transportation impacts and adverse effects of a proposed project, and any associated improvements that would be required to mitigate these impacts to a level of insignificance under CEQA or reduce an adverse effect to an acceptable level under the City's General Plan or other policies. Impacts relative to access for pedestrians, bicyclists, and to transit are addressed in the context of the CEQA criteria. Consistent with SB 743, the project's transportation impacts were analyzed using VMT. While no longer a part of the CEQA review process, vehicular traffic service levels at key intersections were evaluated for consistency with General Plan policies by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on anticipated travel patterns specific to the proposed project, then analyzing the effect the new traffic would be expected to have on the operation of the study intersections.

Project Profile

The proposed project includes development of 12 commercial lots on approximately 19 vacant acres located east of I-5 and north of E Street in the City of Williams. The project would be accessed from an extension of Vann Street to the northwest from its existing terminus at Vada Court. As envisioned, the project would result in up to 169,030 square feet of commercial floor area, consisting of 68,570 square feet of general retail uses, 13,272 square feet of automobile-oriented specialty retail uses such as fast-food restaurants and gas stations, 34,284 square feet of general office floor area, and a hotel of 52,904 square feet. The study area and location of the project site are shown in Figure 1.

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Traffic Impact Study for the Valley Ranch 4 Commercial Development

Figure 1 – Study Area and Existing Lane Configurations

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Transportation Setting

Operational Analysis

Study Area and Periods

The study area for the operational analysis consists of the following intersections selected with input from City staff:

1. E Street/I-5 South Ramps
2. E Street/I-5 North Ramps
3. E Street/Vann Street

Operating conditions during the weekday a.m. and p.m. peak periods were evaluated to capture the highest potential volumes for the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

Study Intersections

The orientation of the roadways in the study area are skewed from true north-south and east-west so for the purposes of this analysis E Street was considered to run east-west and the cross streets north-south.

E Street/I-5 South Ramps is stop-controlled on the southbound off-ramp approach, which is flared and provides additional space for vehicles attempting to make a right turn onto E Street to queue aside left-turning traffic. The south leg is an on-ramp to I-5 South. A crosswalk is marked on the south leg of the intersection.

E Street/I-5 North Ramps is stop-controlled on the northbound off-ramp approach, which is flared and provides additional space for vehicles attempting to make a right turn onto E Street to stack beside traffic turning left. The north leg is an on-ramp to I-5 North.

E Street/Vann Street is an all-way stop-controlled intersection with solar-powered blinking STOP signs on the E Street approaches. Ladder-style crosswalks are striped on all four legs and curb ramps are present on all four street corners.

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

Study Roadway

E Street runs mostly east-west between SR-20 on the west and Husted Road on the east. The section between the I-5 North Ramps and Vann Street has a posted speed limit of 30 miles per hour (mph) and consists of a single travel lane in each direction with a westbound merge lane from Vann Street to the I-5 North Ramps. Based on traffic data collected on April 13, 2021, the section of E Street between Marguerite Street and Husted Road has an average daily traffic (ADT) volume of 2,260 vehicles.

Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol (CHP) as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is January 1, 2016 through December 31, 2020.

As presented in Table 1, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2016 Collision Data on California State Highways*, California Department of Transportation (Caltrans). These average rates statewide are for intersections in the same environment (urban, suburban, or rural), with the same number of approaches (three or four), and the same controls (all-way stop, one- or two-way stop, or traffic signal). Given that no collisions were reported at E Street/Vann Street and the collision rate for E Street/I-5 South Ramps is less than the statewide average for similar facilities, these intersections appear to be operating acceptably with regards to safety. The intersection of E Street/I-5 North Ramps had a calculated collision rate above the statewide average. The collision rate calculations are provided in Appendix A.

Table 1 – Collision Rates for the Study Intersections

Study Intersection	Number of Collisions (2016-2020)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
1. E Street/I-5 South Ramps	1	0.06	0.08
2. E Street/I-5 North Ramps	2	0.13	0.08
3. E Street/Vann Street	0	0.00	0.13

Note: c/mve = collisions per million vehicles entering

Because it had an above-average collision rate, the individual crashes that occurred at the intersection of E Street/I-5 North Ramps were evaluated further. The two crashes that occurred during the study period included a sideswipe and a rear end. With no clear pattern and a rate that is only nominally above the average, the intersection appears to be operating within acceptable parameters and no remedial actions are suggested.

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. A connected sidewalk network is provided on both sides of E Street between Marguerite Street and Vann Street. To the west of Vann Street, there is a sidewalk on the south side of E Street that connects to the Downtown area. Sidewalks are also provided on both sides of Vann Street. Lighting is provided by overhead streetlights.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2017, classifies bikeways into four categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.

- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

There are no existing bicycle facilities within the study area; however, there are plans to provide Class II bicycle lanes on E Street between 7th Street and Husted Road as well as on the section of Husted Road within City Limits in the future, as identified in the City's General Plan.

Transit Facilities

Transit service in the City of Williams and throughout Colusa County is provided by the Colusa County Transit Agency (CCTA). CCTA is a dial-a-ride system with fixed time routes to eight cities and communities within Colusa County: Colusa, Williams, Arbuckle, Maxwell, Princeton, Grimes, Sites, and Stonyford. Six buses operate on multiple routes from Monday through Sunday. Reservations are required to use the service. Out-of-county medical transportation is also provided on an on-call basis. The nearest bus stop is on Marguerite Street just south of E Street, which is within walking distance of the project site. The transit stop is equipped with a bench and overhead shelter.

Capacity Analysis

Intersection Level of Service Methodologies

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

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2018. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The Levels of Service for the intersections with side street stop controls, or those which are unsignalized and have one approach stop controlled, were analyzed using the "Two-Way Stop-Controlled" intersection capacity method from the HCM. This methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The study intersection of E Street/Vann Street has stop signs on all approaches so was analyzed using the "All-Way Stop-Controlled" intersection methodology from the HCM. This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole and is then related to a Level of Service.

All study intersections are planned to be controlled by traffic signals in the future, as identified in the City's General Plan, so were evaluated using the signalized methodology from the HCM under Future Conditions. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether the signals are coordinated or not, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, delays were calculated using optimized signal timing.

The ranges of delay associated with the various levels of service are indicated in Table 2.

Table 2 – Intersection Level of Service Criteria			
LOS	**Two-Way Stop-Controlled**	**All-Way Stop-Controlled**	**Signalized**
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach and wait for vehicle to clear from one or more approaches prior to entering the intersection.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 25 to 35 seconds. Queues of more than two vehicles are encountered on one or more approaches.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop, and drivers consider the delay excessive.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 50 seconds. Drivers enter long queues on all approaches.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual*, 6th Edition, Transportation Research Board, 2018

Traffic Operation Standards

City of Williams

As stated in Policy 8.p of the *City of Williams 2010 General Plan*, the City strives to maintain LOS D or better operation for all roadways and intersections, except within the Downtown area where LOS E is considered acceptable. Exceptions to the LOS standards may be considered by the City Council where a lower LOS would result in clear public benefit. Such circumstances include, but are not limited to, if improvements necessary to achieve the LOS standard result in an impact to a unique historic resource or a highly sensitive environmental area; require infeasible right-of-way acquisition; some other unusual physical constraint exists; or if there are overriding economic or social circumstances.

As clarified in the *City of Williams General Plan Update – Final Environmental Impact Report* (EIR), the City's LOS standard is applied to the overall operation of all-way stop-controlled and signalized intersections and to the worst-case movement on the stop-controlled approach(es) at two-way stop-controlled intersections. A project

would have an adverse effect on the surrounding transportation system if it would cause any study intersection to exceed the acceptable threshold for the facility.

Caltrans

Caltrans does not have a standard of significance relative to operation as this is no longer a CEQA issue. The new *Vehicle Miles Traveled-Focused Transportation Impact Study Guide* (TISG), published in May 2020, replaced the *Guide for the Preparation of Traffic Impact Studies*, 2002. As indicated in the TISG, the Department is transitioning away from requesting LOS or other vehicle operations analyses of land use projects and will instead focus on Vehicle Miles Traveled (VMT). The City's standard of LOS D for the worst-case movement was therefore applied to the intersections of E Street with the I-5 North and South Ramps since Caltrans no longer has a standard of significance for traffic operations.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the weekday a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes. Volume data was collected in April 2021 during clear weather. It is noted that although the COVID-19 public health pandemic was ongoing in the state of California, there were no stay-at-home orders active in Colusa County when the counts were collected, and City staff indicated that they believed that traffic volumes in the study area were at or near pre-pandemic levels. Peak hour factors (PHFs) were calculated based on the counts obtained and used in the analysis.

Under Existing Conditions, all three study intersections operate acceptably based on the City standard applied. The existing traffic volumes are shown in Figure 2. A summary of the intersection Level of Service calculations is contained in Table 3 and copies of the Level of Service calculations for all scenarios are provided in Appendix B.

Table 3 – Existing Peak Hour Intersection Levels of Service

Study Intersection	**AM Peak**		**PM Peak**	
Worst-Case Movement for Approach	**Delay**	**LOS**	**Delay**	**LOS**
1. E Street/I-5 South Ramps	1.7	A	2.2	A
Southbound (I-5 South off-ramp) Left Turn	*15.4*	*C*	*19.4*	*C*
2. E Street/I-5 North Ramps	3.1	A	3.6	A
Northbound (I-5 North off-ramp) Left Turn	*17.2*	*C*	*21.3*	*C*
3. E Street/Vann Street	9.9	A	11.6	B

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

Baseline Conditions

Baseline operating conditions were assessed to determine conditions that could be expected in the next two to five years upon completion of pending projects in the study area and with their trips added to the Existing volumes. As directed by staff, traffic from the pending Valley Ranch 3 Residential Subdivision was included in the evaluation of Baseline Conditions. This project includes development of 103 market-rate single-family residences that would be accessed from an extension of Marguerite Street to the southeast from its current terminus at Alta Lane and a new connection to E Street approximately 350 feet west of Husted Road. As documented in the *Traffic Impact Study for the Valley Ranch 3 Residential Subdivision*, the project is expected to generate an average of 963

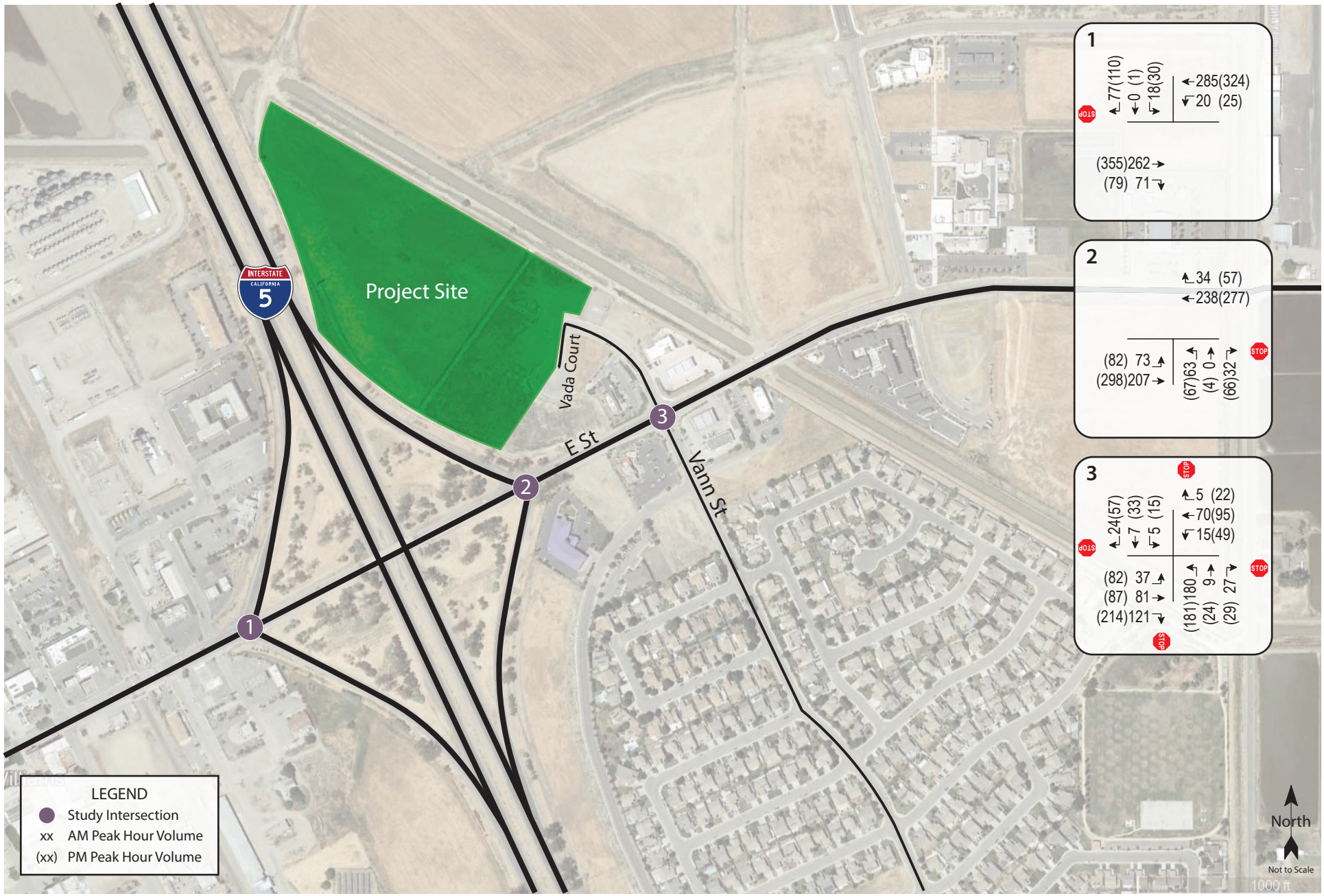

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Figure 2 – Existing Traffic Volumes

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trips per day, including 76 trips during the weekday a.m. peak hour and 102 trips during the weekday p.m. peak hour.

Upon adding trips from the Valley Ranch 3 residential project to Existing volumes, the study intersections are expected to continue operating at acceptable service levels during both peak hours. These results are summarized in Table 4 and Baseline volumes are shown in Figure 3.

Table 4 – Baseline Peak Hour Intersection Levels of Service

Study Intersection ***Worst-case Movement for Approach***	AM Peak		PM Peak	
	Delay	**LOS**	**Delay**	**LOS**
1. E Street/I-5 South Ramps	2.0	A	2.5	A
Southbound (I-5 South off-ramp) Left Turn	*16.8*	*C*	*21.0*	*C*
2. E Street/I-5 North Ramps	3.1	A	3.8	A
Northbound (I-5 North off-ramp) Left Turn	*18.4*	*C*	*22.8*	*C*
3. E Street/Vann Street	10.3	B	12.1	B

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

Future Conditions (Without Project)

Future a.m. and p.m. peak hour volume projections were taken from the General Plan Buildout analysis contained in the *City of Williams General Plan Update – Final Environmental Impact Report* (EIR); this scenario represents cumulative traffic conditions that would be expected upon buildout of the land uses identified in the General Plan. Because the proposed uses are consistent with the General Plan zoning for the project site, to avoid double-counting project volumes, trips from the proposed uses were subtracted from the anticipated buildout volumes to determine volumes and resulting operating conditions that would be expected without development of the proposed project. As identified in the General Plan EIR analysis, the following improvements would be needed to support the anticipated buildout volumes:

E Street/I-5 South Ramps

- Signalize the intersection
- Widen E Street to provide two lanes in each direction plus a westbound left-turn lane

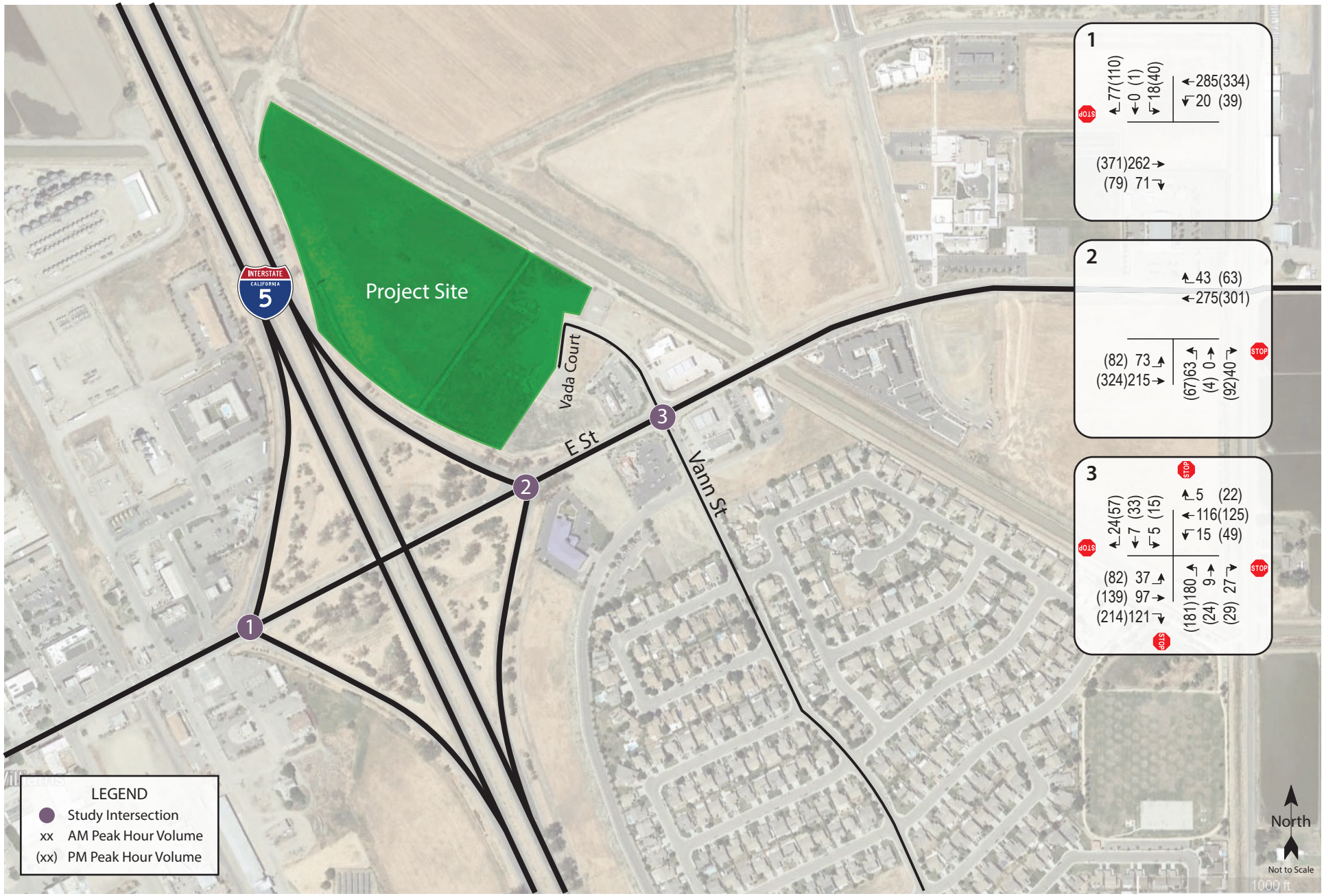
E Street/I-5 North Ramps

- Signalize the intersection
- Widen E Street to provide two lanes in each direction pus an eastbound left-turn lane

E Street/Vann Street

- Signalize the intersection
- Widen southbound Vann Street to provide one right-turn lane and one shared through/left-turn lane
- Widen E Street to provide two lanes in each direction plus left-turn lanes

With these planned improvements, all three study intersections would be expected to operate acceptably at LOS A during both peak hours. Future (Without Project) volumes are shown in Figure 4 and operating conditions with the planned intersection improvements are summarized in Table 5.



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Traffic Impact Study for the Valley Ranch 4 Commercial Development

Figure 3 – Baseline Traffic Volumes

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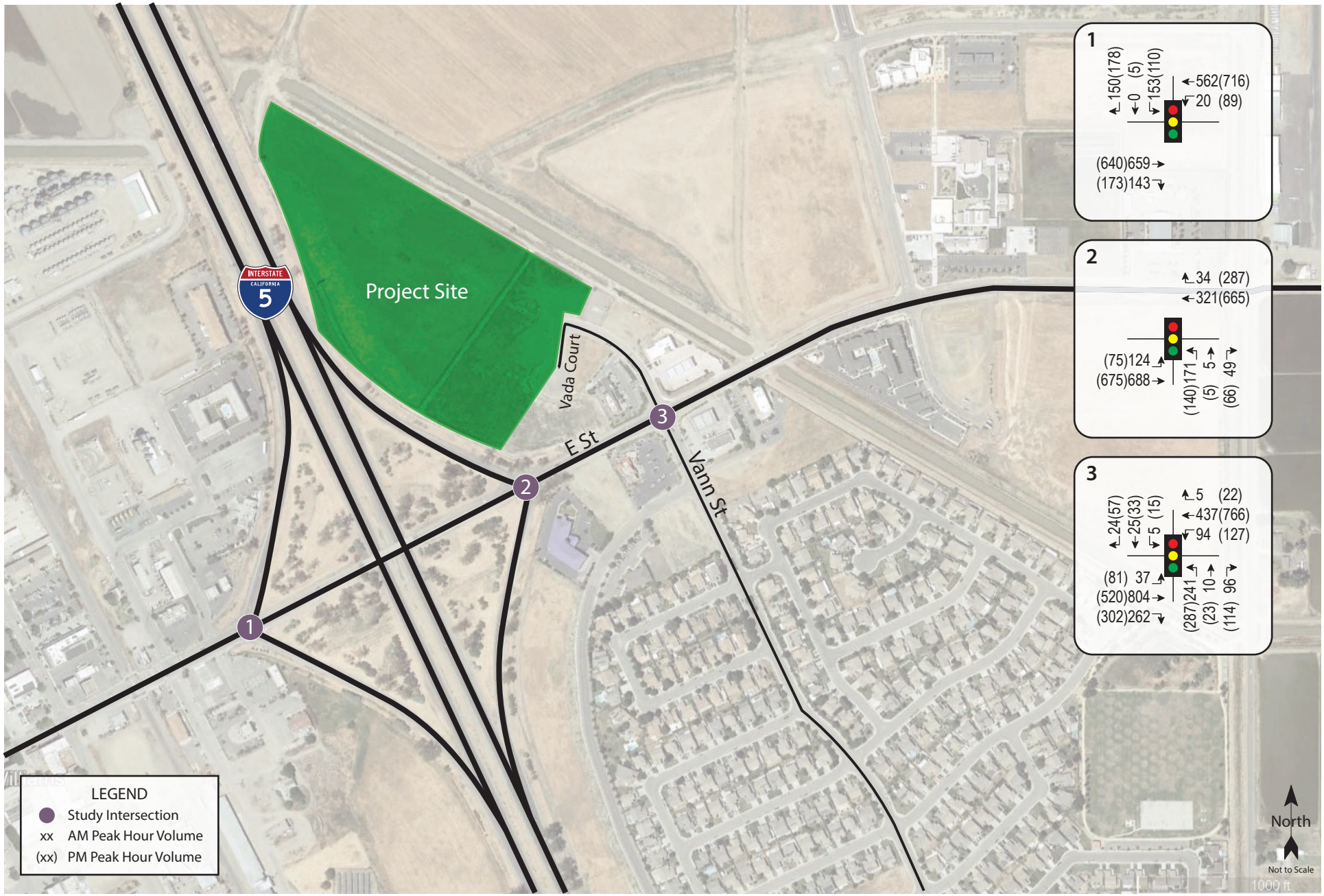

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Traffic Impact Study for the Valley Ranch 4 Commercial Development

Figure 4 – Future (Without Project) Traffic Volumes

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Table 5 – Future (Without Project) Peak Hour Intersection Levels of Service				
Study Intersection	**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**
1. E Street/I-5 South Ramps	9.9	A	9.7	A
2. E Street/I-5 North Ramps	8.2	A	7.6	A
3. E Street/Vann Street	13.1	B	13.7	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

Roundabout Consideration

It should be noted that while the City's General Plan has identified plans for traffic signals to be installed at the intersections of E Street with the I-5 North and South Ramps, the General Plan was completed prior to the implementation of Caltrans' Traffic Operations Policy Directive 13-02, Intersection Control Evaluation (ICE), in 2013. This policy mandates that before controls can be changed for an intersection located on a State facility, an ICE must be performed to explore and evaluate various controls types, such as modern roundabouts, in additional to traffic signals. Therefore, before traffic signals could be installed at the ramp terminals, an ICE would need to be prepared.

City staff has also indicated interest in a modern roundabout at the E Street/Vann Street intersection rather than a traffic signal. Single-lane modern roundabouts outperform traffic signals in terms of the average delay per vehicle when installed at locations with a daily volume entering of up to about 20,000 vehicles and also provide the added benefits of reducing vehicle speeds and greenhouse gas emissions and improving safety. Drawbacks to roundabouts include being generally much more expensive to construct than a traffic signal and occupying more physical space, typically requiring some amount of right-of-way acquisition in urban settings. However, the cost differential between roundabouts and traffic signals begins to narrow once construction is finished since traffic signals cost more money to maintain annually when considering the costs of materials, electricity, and labor for maintenance technicians.

There are no existing traffic signals in the City of Williams so there are no signal technicians on staff or budget for signal maintenance; therefore, staff would prefer to implement roundabouts wherever feasible. Based on a review of the cumulative volumes anticipated at each of the intersections slated for traffic signals, it is likely that roundabouts would also be able to provide acceptable traffic operations, though an ICE would need to be prepared for the I-5 Ramp intersections and a feasibility study should be prepared for E Street/Vann Street. To be consistent with the City's General Plan and the development impact fee program, traffic signals were assumed to be the future control types at the study intersections for the purposes of this analysis, though it is recommended that modern roundabouts also be considered before initiating the design of traffic signals.

Project Description

The proposed project includes development of twelve commercial lots on approximately 19 vacant acres located east of I-5 and north of E Street in the City of Williams. The project would be accessed from an extension of Vann Street to the northwest from its existing terminus at Vada Court. At the time of this analysis, there were no specific development proposals available for any of the lots, so the following land use assumptions were developed and provided by City staff based on the size, shape, and constraints of each lot. As envisioned, the project would be expected to result in up to 169,030 square feet of commercial floor area, consisting of the following:

- 68,570 square feet of general retail uses;
- 13,272 square feet of automobile-oriented specialty retail uses such as fast-food restaurants, coffee shops, and gas stations;

- 34,284 square feet of general office floor area; and
- A hotel of 52,904 square feet.

The tentative subdivision map is shown in Figure 5 and a spreadsheet received from staff that summarizes the land use assumption calculations is included in Appendix C.

Trip Generation

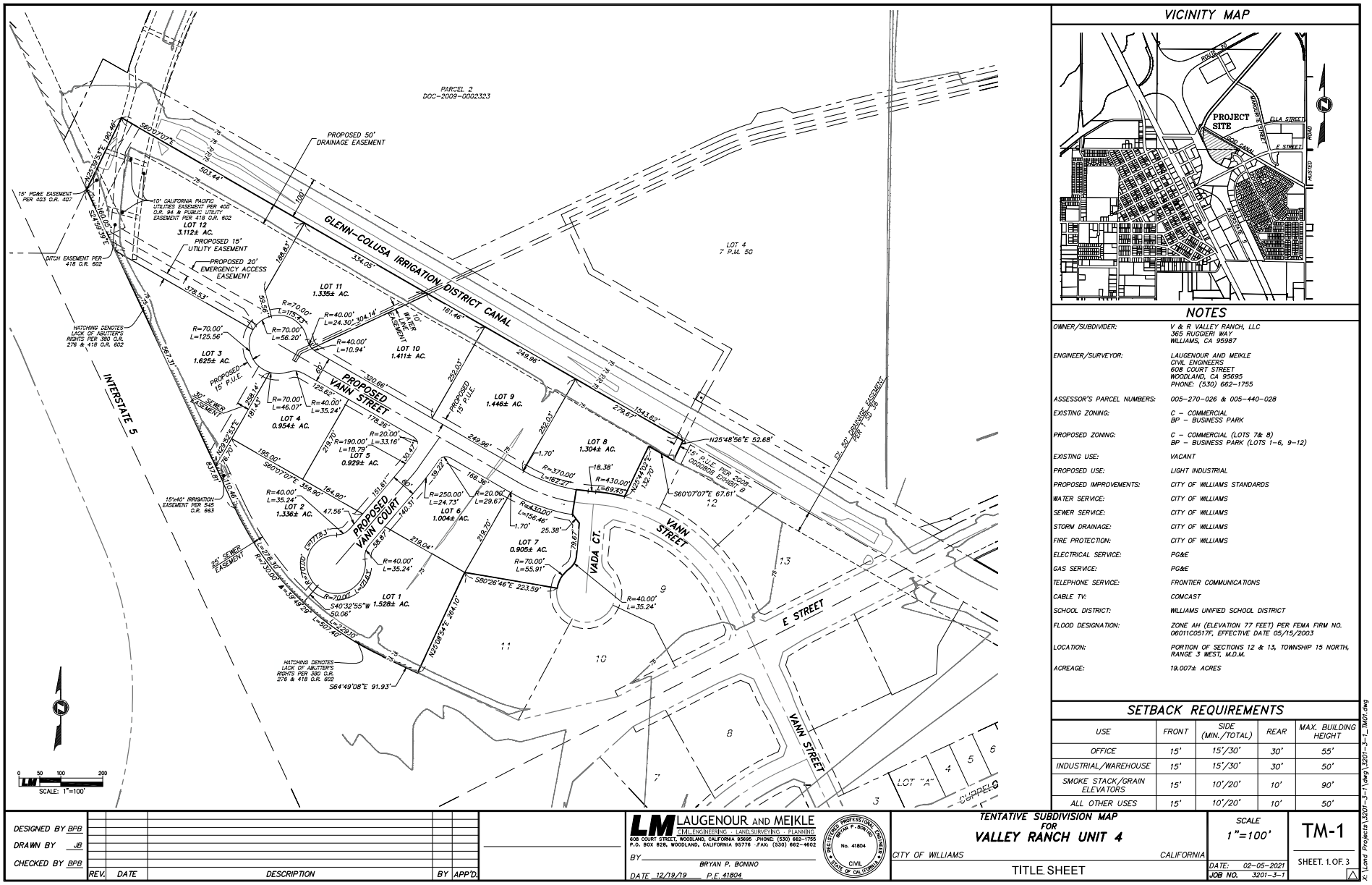
The anticipated trip generation potential for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10th Edition, 2017 for "Hotel" (Land Use #310), "General Office Building" (Land Use #710), "Shopping Center" (Land Use #820), "Fast-Food Restaurant with Drive-Through Window" (Land Use #934), "Coffee/Donut Shop with Drive-Through Window" (Land Use #937), and "Super Convenience Mart/Gas Station" (Land Use #960). Since the exact retail uses have not yet been determined, rates for the Shopping Center land use were applied to the general retail floor area since this land use is generally representative of a variety of retail uses. To estimate the trip generation potential for the automobile-oriented retail uses, rates published for the Fast-Food Restaurant with Drive-Through Window, Coffee/Donut Shop with Drive-Through Window, and Super Convenience Mart/Gas Station land uses were averaged and then applied to the floor area for this component of the development. As the *Trip Generation Manual* only provides rates for the Hotel land use in terms of the number of rooms as the independent variable, data for three existing hotels in the City that would likely have similar trip generating characteristics to the project hotel was obtained from City staff and used to calculate an average ratio of floor area per hotel room. A conversion factor of 370 square feet per guest room was calculated using the total floor area and number of guest rooms provided for the Ramada by Wyndham, Motel 6, and Econo Lodge, which translates to an estimate of 143 rooms for the project hotel based on a total size of 52,904 square feet.

Internal Capture Trips

The *Trip Generation Manual* also includes data and methodologies that can be applied to determine the proportion of internal trips that may occur within a development area that includes a variety of land uses, such as the proposed project. Internal trips occur at mixed-use developments, and in this case, would consist of hotel guests and office employees patronizing the retail and restaurant facilities and well as retail customers visiting more than one establishment in single round trip to the site, such as a customer visiting both a gas station and fast-food restaurant or coffee shop. If these facilities were located on separate sites, these trips would occur on the streets between the facilities; however, since the entire commercial development would be accessed from Vann Street these trips would occur without affecting operation of the study intersections on E Street and would therefore be considered internal. Using the National Cooperative Highway Research Program (NCHRP) Report 684 internal capture trip generation tool, which is consistent with ITE methodologies, it is estimated that approximately five percent of the total trips would be internal during the a.m. peak hour and 29 percent would be internal during the p.m. peak hour. ITE does not provide daily internal capture data so an average of the a.m. and p.m. peak hours was applied for informational purposes only.

Diverted Trips

A substantial portion of the trips associated with the retail uses would be drawn from existing traffic on I-5. These vehicle trips, known as either pass-by or diverted trips, are not considered new trips since they consist of drivers who are already traveling on the adjacent or nearby streets and choose to make an interim stop. In the case of the proposed commercial development, there would be no pass-by trip potential since Vann Street would terminate at the project site; however, many trips would be diverted from traffic already traveling on I-5. Data published in the *Trip Generation Handbook*, 3rd Edition, 2017, indicates pass-by and diverted trip percentages for numerous retail uses such as fast-food restaurants, shopping centers, and gas stations. Based on a review of data contained in the Handbook, it is estimated that approximately 34 and 65 percent of the general retail trips and



Source: Laugenour and Meikle 07/7

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Traffic Impact Study for the Valley Ranch 4 Commercial Development

Figure 5 – Tentative Subdivision Map

automobile-oriented retail trips would be diverted from I-5, respectively. While these trips are not primary trips, they would be considered "new" trips at the study intersections so although they were quantified no deductions were given for diverted trips in the operational analysis.

Total Project Trip Generation

The expected trip generation potential for the proposed development is shown in Table 6 with deductions taken for internal capture and diverted trips. At buildout, the project has the potential to generate an average of 13,422 trips per day, including 1,108 trips during the weekday a.m. peak hour and 1,018 trips during the weekday p.m. peak hour, though only 5,340 of these daily trips would be primary, including 452 primary trips during the a.m. peak hour and 364 primary trips during the p.m. peak hour. After accounting for internal capture and diverted trips, the development has the potential to result in 11,142 new trips on local streets per day including 1,052 new trips during the a.m. peak hour and 724 new trips during the p.m. peak hour.

Table 6 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Hotel	143 rms	8.36	1,195	0.47	67	40	27	0.60	86	44	42
Internal Capture		*-17%*	*-204*	*-5%*	*-4*	*-2*	*-2*	*-29%*	*-24*	*-12*	*-12*
Primary Hotel Trips			991		63	38	25		62	32	30
General Office Bldg	34.3 ksf	9.74	334	1.16	40	34	6	1.15	39	6	33
Internal Capture		*-17%*	*-56*	*-5%*	*-2*	*-1*	*-1*	*-29%*	*-12*	*-6*	*-6*
Primary Office Trips			278		38	33	5		27	0	27
Shopping Center	65.6 ksf	37.75	2,475	0.94	62	38	24	3.81	250	120	130
Internal Capture		*-17%*	*-420*	*-5%*	*-4*	*-2*	*-2*	*-29%*	*-72*	*-36*	*-36*
Sub-Total			2,055		58	36	22		178	84	94
Diverted		*-35%*	*-720*	*-35%*	*-20*	*-10*	*-10*	*-35%*	*-62*	*-31*	*-31*
Primary General Retail Trips			1,335		38	26	12		116	53	63
*Auto-Oriented Retail	13.3 ksf	709.64	9,418	70.77	939	479	460	48.44	643	328	315
Internal Capture		*-17%*	*-1,600*	*-5%*	*-46*	*-23*	*-23*	*-29%*	*-186*	*-93*	*-93*
Sub-Total			7,818		893	456	437		457	235	222
Diverted		*-65%*	*-5,082*	*-65%*	*-580*	*-290*	*-290*	*-65%*	*-298*	*-149*	*-149*
Primary Auto Retail Trips			2,736		313	166	147		159	86	73
Total Project Trips			13,422		1,108	591	517		1,018	498	520
Total New Trips on Local Streets			**11,142**		**1,052**	**563**	**489**		**724**	**351**	**373**
Total Primary Trips			5,340		452	263	189		364	171	193

Note: rms = rooms; ksf= 1,000 square feet; *Average of rates for Fast-food Restaurant with Drive-Through Window, Coffee/Donut Shop with Drive-Through Window, and Super Convenience Mart with Gas Station

Trip Distribution

The pattern used to allocate project trips to the surrounding street network was determined based on familiarity with travel patterns in the area and likely origins and destinations for patrons of the project. It is anticipated that the majority of project trips would be diverted from I-5 so a balanced percentage of trips from both the north and south on I-5 was used to reflect the nature in which many patrons will divert their trip from I-5 and then continue on in the same direction after visiting the project site. The applied trip distribution assumptions are shown in Table 7 and on Figure 6.

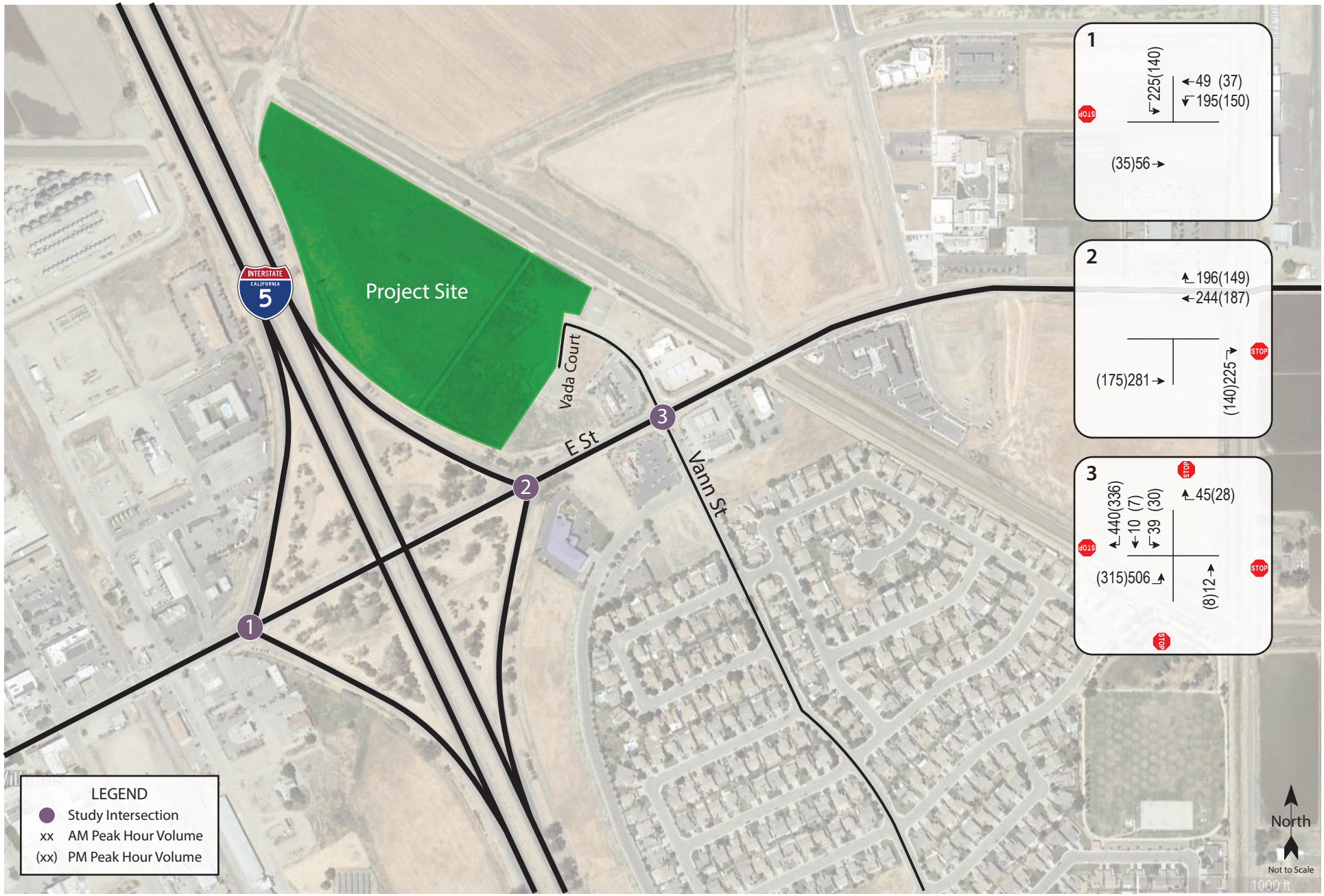
Table 7 – Trip Distribution Assumptions

Route	Percent
To/from I-5 North of E St	40
To/from I-5 South of E St	40
To/from E St West of I-5	10
To/from E St East of Vann St	8
To/from Vann St South of E St	2
TOTAL	**100%**

Intersection Operation

Existing plus Project Conditions

Upon the addition of project-related traffic to the Existing volumes, all three study intersections would experience increased delays and deteriorate to LOS F operation during both peak hours, which would be considered adverse effects under the City's General Plan. Acceptable traffic operations could be achieved at both of the I-5 Ramp intersections with installation of all-way stop controls (AWSC) as an interim measure until the planned improvements identified in the General Plan can be installed; however, installation of a traffic signal would be needed with the project to provide acceptable traffic operations at E Street/Vann Street. These results are summarized in Table 8 and Project traffic volumes are shown in Figure 6.



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Traffic Impact Study for the Valley Ranch 4 Commercial Development

Figure 6 – Project Traffic Volumes

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Table 8 – Existing and Existing plus Project Peak Hour Intersection Levels of Service								
Study Intersection	**Existing Conditions**				**Existing plus Project**			
Worst-case Movement for Approach	**AM Peak**		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1. E Street/I-5 South Ramps	1.7	A	2.2	A	**	**F**	**	**F**
Southbound (I-5 off-ramp) Left Turn	*15.4*	*C*	*19.4*	*C*	**	***F***	**	***F***
With All Way Stop Control (AWSC)					12.6	B	12.5	C
2. E Street/I-5 North Ramps	3.1	A	3.6	A	*7.5*	A	7.3	A
Northbound (I-5 off-ramp) Left Turn	*17.2*	*C*	*21.3*	*C*	***55.4***	***F***	***53.8***	***F***
With All Way Stop Control (AWSC)					15.7	C	13.8	B
3. E Street/Vann Street	9.9	A	11.6	B	**	**F**	**64.5**	**F**
With Traffic Signal					33.8	C	18.3	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for worst-case movements on minor approaches to two-way stop-controlled intersections are indicated in *italics;* ** = delay greater than 120 seconds; **Bold** text = deficient operation; Shaded cells = conditions with recommended improvements

To completely offset the adverse effects at the study intersections, AWSC would need to be implemented at the I-5 Ramp terminals as part of the project along with installation of a traffic signal at E Street/Vann Street. City staff estimates that the traffic impact fees for the project would be approximately $1,070,000 so the project's impact fees would be adequate to cover the cost of all of the improvements identified above. However, if traffic signals or roundabouts are installed at all three locations, then the project's impact fees would not be adequate to cover the total cost of these improvements.

Development Phasing

Since the proposed development is composed of various individual commercial projects that would not all be constructed simultaneously, a sensitivity analysis was performed to determine what level of development could be allowed at the project site before the identified improvements are needed at each intersection. This information would allow the City to collect impact fees as portions of the development are constructed and then ultimately implement the necessary improvements once the development thresholds are exceeded. The thresholds in terms of the percentage of the proposed development's total trip generation that could be accommodated and still maintain acceptable traffic operations at the study intersections were identified. These trips were then translated to the corresponding floor area for the various uses that could be allowed, or some combination of which that would result in equal to or less than the number of trips at which each threshold is triggered. As shown in Table 9, up to 40 percent of the proposed development's trip generation could be allowed before improvements are needed at the I-5 South Ramps, up to 65 percent could be allowed before the trigger is met for the Vann Street intersection and up to 70 percent could be allowed prior to needing improvements at the I-5 North Ramps.

Table 9 – Existing plus Project Sensitivity Analysis			
Study Intersection	**Allowable % of Total Project**	**Allowable New PM Trips**	**Potential Allowable Development**
1. E Street/I-5 South Ramps (Interim AWSC, Traffic Signal, or Roundabout)	40%	289	General Retail - 27.4 ksf, Auto Retail – 5.3 ksf, General Office – 13.7 ksf, & Hotel – 21.2 ksf
2. E Street/I-5 North Ramps (Interim AWSC, Traffic Signal, or Roundabout)	70%	506	General Retail – 48.0 ksf, Auto Retail – 9.3 ksf, General Office – 24.0 ksf, & Hotel – 37.0 ksf
3. E Street/Vann Street (Traffic Signal or Roundabout)	65%	470	General Retail – 44.6 ksf, Auto Retail – 8.6 ksf, General Office – 22.3 ksf, & Hotel – 34.4 ksf

Notes: % = Percent, ksf = 1,000 square feet

Finding – Upon the addition of all project-generated trips to Existing volumes, the study intersections are expected to deteriorate to LOS F operation during both peak hours and the project would have an adverse effect on the surrounding roadway network. Both of the I-5 Ramp intersections with E Street could be converted to AWSC as interim improvements prior to the construction of the improvements identified in the General Plan and E Street/Vann Street would need to be signalized for the project's effect on operation of the surrounding roadway network to be considered acceptable. However, up to 40 percent of the proposed trips could be generated before traffic operations would begin to deteriorate to unacceptable levels. The following thresholds correspond to the point at which the improvements would be needed at each intersection.

1. E Street/I-5 South Ramps – 40 percent of Proposed Trips
2. E Street/I-5 North Ramps – 70 percent of Proposed Trips
3. E Street/Vann Street – 65 percent of Proposed Trips

Recommendation – The applicant should fund installation of a traffic signal at E Street/Vann Street before the project exceeds 65 percent of the proposed development's potential trip generation. The City may wish to consider applying a credit toward the required traffic impact fees since the improvement is identified in the City's General Plan and the fee would therefore be expected to fund this improvement. Alternatively, the City could use the impact fees to fund a portion of the construction of a roundabout at this location, though a feasibility study would need to be performed first. Prior to reaching 40 percent and 70 percent of the development's trip generation potential, the project would need to make improvements at E Street/I-5 South Ramps and E Street/I-5 North Ramps, respectively. These improvements could be traffic signals as identified in the General Plan, roundabouts, or interim improvements such as AWSC.

Baseline plus Project Conditions

With project-related traffic added to Baseline volumes, which includes trips associated with the pending Valley Ranch 3 Residential Subdivision, the study intersections are expected to deteriorate to LOS F operation during both peak hours. Acceptable traffic operations could be achieved at both of the I-5 Ramp intersections with installation of AWSC, as recommended for Existing plus Project Conditions. With the planned installation of a traffic signal, E Street/Vann Street would operate acceptably at LOS C during the a.m. peak hour and LOS B during the p.m. peak hour. These results are summarized in Table 10.

Table 10 – Baseline and Baseline plus Project Peak Hour Intersection Levels of Service								
Study Intersection	**Baseline Conditions**				**Baseline plus Project**			
Worse-case Movement for Approach	**AM Peak**		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1. E Street/I-5 South Ramps	2.0	A	2.5	A	**	**F**	**	**F**
Southbound (I-5 off-ramp) Left Turn	*16.8*	*C*	*21.0*	*C*	**	***F***	**	***F***
With All Way Stop Control (AWSC)					12.9	B	12.9	B
2. E Street/I-5 North Ramps	3.1	A	3.8	A	8.9	A	9.0	A
Northbound (I-5 off-ramp) Left Turn	*18.4*	*C*	*22.8*	*C*	***65.9***	***F***	***63.8***	***F***
With All Way Stop Control (AWSC)					16.8	C	14.8	B
3. E Street/Vann Street	10.3	B	12.1	B	**	**F**	**68.0**	**F**
With Traffic Signal					33.5	C	17.5	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for worst-case movements on minor approaches to two-way stop-controlled intersections are indicated in *italics;* ** = delay greater than 120 seconds; **Bold** text = deficient operation; Shaded cells = conditions with recommended improvements

Development Phasing

The sensitivity analysis that was performed for Existing plus Project conditions was updated assuming approval of the Valley Ranch 3 Residential Development. As shown in Table 11, up to 34 percent of the proposed development's trip generation could be accommodated before improvements are needed at the I-5 South Ramps, up to 56 percent could be accommodated at the Vann Street intersection, and up to 60 percent could be accommodated at the I-5 North Ramps.

Table 11 – Baseline plus Project Sensitivity Analysis			
Study Intersection	**Allowable % of Total Project**	**Allowable New PM Trips**	**Potential Allowable Development**
1. E Street/I-5 South Ramps (Interim AWSC, Traffic Signal, or Roundabout)	34%	246	General Retail – 23.3 ksf, Auto Retail – 4.5 ksf, General Office – 11.7 ksf, & Hotel – 18.0 ksf
2. E Street/I-5 North Ramps (Interim AWSC, Traffic Signal, or Roundabout)	60%	434	General Retail – 41.1 ksf, Auto Retail – 8.0 ksf, General Office – 20.6 ksf, & Hotel – 31.7 ksf
3. E Street/Vann Street (Traffic Signal or Roundabout)	56%	405	General Retail – 38.4 ksf, Auto Retail – 7.4 ksf, General Office – 19.2 ksf, & Hotel – 29.6 ksf

Notes: % = Percent, ksf = 1,000 square feet

Finding – The study intersections would experience increased delays and deteriorate to LOS F operation during both peak hours upon the addition of project-generated traffic to Baseline volumes. The same improvements recommended for Existing plus Project Conditions would be adequate to maintain acceptable operation under

Baseline plus Project volumes. The following thresholds correspond to the point at which the improvements would be needed at each intersection.

1. E Street/I-5 South Ramps – 34% of Proposed Trips
2. E Street/I-5 North Ramps – 60% of Proposed Trips
3. E Street/Vann Street – 56% of Proposed Trips

Recommendation – Consistent with Existing plus Project Conditions, the applicant should fund installation of a traffic signal at E Street/Vann Street and AWSC at the I-5 Ramp intersections. Alternatively, the City could use the impact fees to pursue funding for roundabouts.

Future plus Project (Buildout) Conditions

Under volumes anticipated upon buildout of the City's General Plan, which includes project traffic volumes, and with the planned signalization of all three study intersections, acceptable operation is expected. The Future plus Project operating conditions are summarized in Table 12.

Table 12 – Future and Future plus Project Peak Hour Intersection Levels of Service

Study Intersection	Future (Without Project)				Future plus Project (Buildout)			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. E Street/I-5 South Ramps	9.9	A	9.7	A	15.6	B	15.3	B
2. E Street/I-5 North Ramps	8.2	A	7.6	A	13.9	B	10.2	B
3. E Street/Vann Street	13.1	B	13.7	B	10.5	B	14.6	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

Finding – Under the anticipated buildout volumes, and with the planned circulation improvements identified in the General Plan, the study intersections are expected to operate acceptably and the project's long-term effect on operation of the surrounding roadway network would be considered acceptable.

Recommendation – To offset the cumulative effects of project traffic and help fund the planned circulation improvements identified in the General Plan, the applicant should pay the required development impact fees, less the cost to install a traffic signal at the intersection of E Street/Vann Street if constructed as part of the project since this improvement is needed under Existing plus Project Conditions. Before traffic signals can be installed at the I-5 ramp terminals, an ICE needs to be performed, as required by Caltrans, to confirm the appropriate control type. Additionally, a feasibility study should be performed if staff wants to pursue a roundabout at E Street/Vann Street.

Alternative Modes

Pedestrian Facilities

Sidewalks would be provided on the new section of Vann Street as well as Vann Court, which would effectively link the project site to the surrounding pedestrian network. Patrons and employees would be able to walk between the site, the surrounding commercial uses, the Downtown area, and nearby residential neighborhoods. To facilitate access along the project frontage, it is recommended that a marked crosswalk and curb ramps be provided on the Vann Court leg of the new intersection when the extension of Vann Street is constructed similar to the improvements that were completed at the Vada Court intersection as part of the Grocery Outlet project. All new curb ramps should comply with current Americans with Disability Act (ADA) design standards.

Finding – As proposed, access for pedestrians would be adequate.

Recommendation – The Vann Street/Vann Court intersection should include a crosswalk with ADA-compliant curb ramps on the Vann Court leg. All new curb ramps within the development should comply with applicable ADA standards.

Bicycle Facilities

The development is envisioned to include approximately 66,000 square feet of general retail uses and 34,000 square feet of office space so it is reasonable to expect that some patrons and employees would want to ride their bicycle to the site. The proposed width for the new section of Vann Street is 44 feet wide, which is enough to accommodate two 12-foot travel lanes, two six-foot bicycle lanes, and street parking on one side of the street. As a result, it is recommended that the project include provision of Class II bicycle lanes on the existing section of Vann Street north of E Street and the new section of Vann Street to be constructed by the project. This facility would tie into the planned Class II bike lanes on E Street between 7th Street and Husted Road and connect the site to the surrounding bicycle network. It is recommended that bicycle parking be provided in accordance with the California Green Building Standards (CAL Green) at five percent of the required vehicular parking supply.

Finding – With the provision of Class II bike lanes on Vann Street and the future installation of Class II bike lanes on E Street, access for bicyclists would be adequate.

Recommendation – The cross section for the new section of Vann Street should include Class II bike lanes and on-site bicycle parking should be provided for five percent of the total required vehicle parking spaces.

Transit

Existing transit facilities are adequate considering the existing transit stop near the Marguerite Street/E Street intersection is within walking distance of the project site, though the project is not anticipated to generate many transit trips given the limited service available in the City.

Finding – Access to transit is adequate.

Vehicle Miles Traveled

Background and Threshold of Significance

Senate Bill (SB) 743 established a change in the metric to be applied for determining transportation impacts associated with development projects. Rather than the delay-based criteria associated with a Level of Service analysis, the increase in Vehicle Miles Traveled (VMT) as a result of a project is now the basis for determining California Environmental Quality Act (CEQA) impacts with respect to transportation and traffic. As of the date of this analysis, the City of Williams has not yet established thresholds of significance related to VMT nor is there a regional travel demand model that contains VMT information. As a result, the project-related VMT impacts were assessed qualitatively based on guidance provided by the California Governor's Office of Planning and Research (OPR) in the publication *Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory*, 2018.

The Technical Advisory includes suggested VMT significance thresholds for employment and retail uses but does not address hotel or other visitor-based land uses. The Technical Advisory indicates that lead agencies may develop their own thresholds for other land use types. For the purposes of this analysis, hotel VMT was assessed by applying OPR's guidance for retail uses and associated screening methods when considering the VMT associated with guests, while OPR's suggested metrics for employment-based VMT was considered for the project's employees. The selection of a retail-type assessment for the hotel guests was also made in consideration of how other jurisdictions have chosen to assess hotel VMT. Assessing the potential VMT impacts associated with multiple different components of a project is consistent with OPR's suggested approach for mixed-use projects where different project components are assessed separately.

Hotel Guest and Retail VMT

Hotels and other visitor-focused uses require consideration of the project's intended customer base and where those customers would otherwise have stayed or shopped if the project were not constructed. Unless a hotel project also includes construction of a major new attraction or convention component, on its own it is unlikely to draw *new* visitors to the County; it will just redistribute where visitors stay. This shift in travel patterns and VMT is similar to how OPR considers retail uses, in which many types of retail projects may generally be presumed to have a less-than-significant VMT impact since the total amount of shopping that occurs in a given geographic area tends to remain unchanged, and in fact adding new retail uses to the urban fabric often reduces the distances (i.e., the "miles" in VMT) that people need to drive on shopping trips. The City of San Jose was an early adopter of VMT thresholds and has chosen to apply this methodology of treating hotel uses similar to retail, where small- to mid-sized hotels can be expected to shift travel patterns rather than generate new VMT and can generally be presumed to have a less-than-significant transportation-related VMT impact.

The proposed hotel and retail uses are primarily expected to divert visitors away from I-5 who already would have been driving by the site anyway so the total vehicle miles traveled by visitors in the region would be unlikely to change. The retail component would also serve local residents and, considering that there are limited existing shopping opportunities in the City of Williams, the project has the potential to reduce trip lengths associated with retail travel in the region by providing shopping opportunities locally instead of requiring residents to drive substantially longer distances to larger cities such as Yuba City, Woodland, and Sacramento. Given these conditions, and in consideration of OPR guidance and hotel VMT methodologies applied in other jurisdictions with adopted VMT thresholds, the retail and visitor components of the project can reasonably be presumed to result in a less-than-significant VMT impact.

Employee VMT

Under OPR guidance, employment-based uses that have a VMT per capita that is 15 percent or more below the existing countywide VMT per employee would have a less-than-significant transportation impact. The project site is within a walkable distance of surrounding commercial, residential, retail, and school land uses. Further, there is a bus stop near the intersection of E Street/Marguerite Street which is within one-quarter mile of the project and there are plans to construct Class II bike lanes on E Street and Husted Road, which, taken in conjunction with the recommendation to provide Class II bike lanes on the new section of Vann Street would link the project site to the surrounding bicycle network. Given the general rural nature of the land use pattern throughout Colusa County, it is reasonable to expect the project to have a VMT that is below the countywide average per employee based on the proximity of the project site to other land uses and living opportunities, access for bicyclists, and connectivity to public transit. Similar to the retail assessment, the development would provide more opportunities for residents to work in the City rather than travel to other cities for work and in turn has the potential to reduce VMT in the region.

Recommended Employee TDM Measures

To minimize the potential for the project to have an impact on VMT, transportation demand management (TDM) measures can be implemented to further reduce the need for vehicle travel by employees of the proposed project. TDM measures aim to reduce single-occupancy vehicle trips and total VMT through use of alternative modes of transportation and more efficiently planned trips. Due to the site's proximity to much of the City's housing supply and access for alternative modes of transportation there is potential to reduce vehicular trips with implementation of a TDM program. The VMT associated with a development project is influenced by numerous factors, including proximity to other land uses. The publication *Quantifying Greenhouse Gas Mitigation Measures*, California Air Pollution Control Officers Association (CAPCOA), 2010 includes a review of TDM strategies that can be expected to reduce VMT in comparison with typical development practices in the area. The TDM measures described below are potential measures that would be expected to reduce VMT and are consistent with the goals of Caltrans' *Smart Mobility 2010: A Call to Action for the New Decade*. It is recommended that the operators of the hotel, retail, and office uses be encouraged to participate in the TDM program and offer the incentives for the first two years of operation, after which the effectiveness of the program should be reevaluated and modified, if needed, though the intent is that these measures be permanent.

- **Carpool Incentives:** In non-metropolitan areas, carpooling is often the most effective trip reduction measure. Financial incentives can be an effective way to encourage employees to do so. The employer should provide an incentive of $50 per month to employees who agree to carpool to work a minimum of 50 percent of the time.

- **Active Transportation Incentives:** Financial incentives can also be an effective way to encourage employees to use active modes of transportation to reach the site. In addition to those who carpool, the applicant should provide an incentive of $50 per month to employees who agree to walk or bicycle to work a minimum of 50 percent of the time.

- **Bicycle and Pedestrian Connections:** As proposed, the project includes sidewalks, and Class II bike lanes are recommended on Vann Street. These connections would help to make employee travel via walking or bicycling more viable, reducing reliance on travel by private automobile and its associated VMT.

- **Bicycle Trip-End Facilities:** Employees are more likely to ride their bicycle to work if secure and covered bicycle parking as well as showers and changing rooms are provided on-site. In addition to standard bicycle parking stalls, it is recommended that the developer(s) provide bicycle lockers and that the bathroom for the office space have a changing room with a shower that employees could use to freshen up and change from athletic attire to work clothes.

- **Electric Vehicle Charging Stations:** While the provision of dedicated parking for Electric Vehicles (EVs) and charging stations do not result in trip or VMT reductions, they can help reduce the total GHG emissions of a project. It is recommended that EV charging stations be provided consistent with CAL Green guidance.

Finding – The proposed project site is within an acceptable walking and biking distance of Downtown and other points of interest and would reasonably be expected to have a less-than-significant transportation impact on VMT.

Recommendation – Although not required to mitigate an identified impact, the project should incorporate TDM measures identified in this report such as carpool incentives, active transportation incentives, pedestrian and bicycle connections, and EV charging stations to further reduce the potential for an impact in terms of VMT and to contribute to improved air quality for the region.

Access and Circulation

Site Access

The project would be accessed from an extension of Vann Street to the northwest from its existing terminus at Vada Court. The extension of Vann Street has a proposed width of 60 feet and includes one travel lane in each direction. Street parking is permitted on both sides of Vann Street for vehicles that weigh less than four tons, though it is recommended that bike lanes be installed north of E Street and street parking be prohibited on one side of the street to accommodate the bike lanes. The new intersection that would be created by the project of Vann Street/Vann Court should be stop-controlled on the Vann Court approach similar to the Vada Court intersection.

Recommendation – The new Vann Street/Vann Court intersection should be stop-controlled on the Vann Court approach.

Sight Distance

At unsignalized intersections 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. Adequate time should be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed. Sight distances at the intersections that the extension of Vann Street would form with Vada Court and Vann Court were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distance at intersections of public streets is based on corner sight distances, with approach travel speed used as the basis for determining the recommended sight distance. Additionally, the stopping sight distance needed for a following driver to stop if there is a vehicle waiting to turn into a side street or driveway is evaluated based on stopping sight distance criterion and the approach speed on the major street.

For anticipated travel speeds of 25 mph, the minimum corner sight distance needed is 275 feet and the recommended stopping sight distance is 150 feet. Based on a review of field conditions, sight lines extend more than 275 feet in both directions from Vada Court, which is adequate. Additionally, sight lines are adequate for a following driver to notice and react to a preceding motorist stopped or slowing to turn into the side street. Based on the proposed preliminary alignment of the street extension, it is expected that adequate sight distances will be provided if clear sight lines are maintained through the vision triangles. To achieve this, it is recommended that any landscaping adjacent to the curb returns be low-profile, and that any trees along the new street section be installed such that they do not block sight lines from existing or proposed driveways or side streets. Any new signage installed as part of the project should be placed outside of the vision triangles, which are denoted graphically in Plate 1. The Intersection Sight Distance (ISD) length should be a minimum of 275 feet for Vada Court and Vann Court.

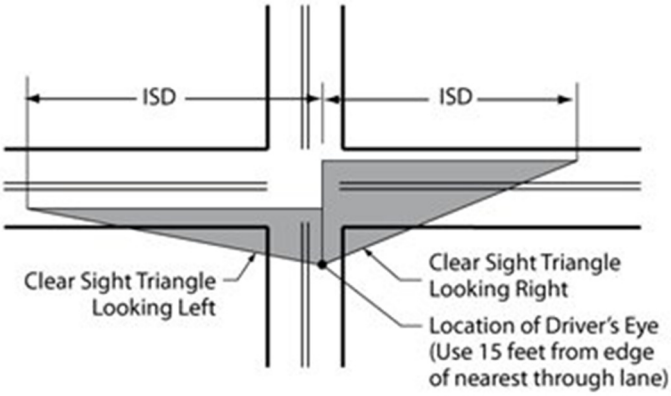

Plate 1 Vision Triangle Graphic

Finding – Sight lines along the new section of Vann Street are anticipated to be adequate to accommodate all turns into and out of the project site.

Recommendation – To provide adequate sight lines at the intersections of Vann Street with Vada Court and Vann Court, any new signage to be located near the intersections should be placed outside of the vision triangle of a driver waiting on the minor street.

Emergency Access

Emergency response vehicles would be able to access the site via the proposed extension of Vann Street. All project streets are anticipated to be designed in accordance with City design standards; therefore, emergency access is expected to function acceptably.

Finding – Emergency access is expected to function acceptably.

Conclusions and Recommendations

Conclusions

- Two of the three study intersections have calculated collision rates that are lower than the statewide average. The remaining study intersection did not have any defined trend of collisions that would indicate a safety concern.

- At buildout, the proposed project would be expected to generate an average of 13,422 trips per day, including 1,108 trips during the weekday a.m. peak hour and 1,018 trips during the weekday p.m. peak hour. After accounting for internal capture and diverted trips, the development has the potential to result in 11,142 new trips on local streets per day including 1,052 new trips during the a.m. peak hour and 724 new trips during the p.m. peak hour, though only 5,340 of these daily trips would be primary, including 452 primary trips during the a.m. peak hour and 364 primary trips during the p.m. peak hour.

- Upon the addition of project-generated trips to Existing and Baseline volumes, the study intersections are expected to deteriorate to LOS F operation during both peak hours and the project would have an adverse effect at each intersection requiring improvements.

- Under the anticipated Buildout (Future) volumes which includes project trips, and with the planned installation of traffic signals as well as the widening of E Street, the study intersections are expected to operate acceptably; therefore, the project's long-term effect on operation of the surrounding roadway network is considered acceptable.

- Access for pedestrians would be adequate with the provision of sidewalks along the extension of Vann Street and the new Vann Court.

- With the provision of Class II bike lanes on Vann Street and the future installation of Class II bike lanes on E Street, access for bicyclists would be adequate.

- The existing transit stop on Marguerite Street south of E Street is within one-quarter mile walking distance of the project site and access for transit riders is therefore considered acceptable, though demand is expected to be minimal.

- The proposed project site is located within an acceptable walking and biking distance of Downtown and other points of interest and would reasonably be expected to have a less-than-significant transportation impact on VMT.

- Sight lines along the new section of Vann Street are anticipated to be adequate to accommodate all turns into and out of the project site.

- Emergency access is expected to function acceptably.

Recommendations

- To offset adverse effects at the study intersections, the project would need to make improvements at the I-5 South Ramps prior to reaching 34 percent of the proposed development's potential trip generation assuming that the Valley Ranch 3 Residential Subdivision is approved. Improvements would be needed at Vann Street prior to reaching 56 percent of the proposed development trip generation levels and improvements would

be needed at the I-5 North Ramps prior to reaching 60 percent of the project's total trip generation. If the residential subdivision is not approved, then these thresholds would increase to 40, 65, and 70 percent, respectively.

- Improvements at the I-5 Ramp terminals to be implemented be the project should be either conversion to all-way stop controls or installation of traffic signals or roundabouts. Improvements at E Street/Vann Street would need to be either a traffic signal or roundabout. If traffic signals are installed, the applicant can potentially be reimbursed through the City's development impact fee program through a credit against the required traffic impact fees since these improvements are already planned and identified in the City's General Plan and should therefore be part of the program to be funded through the impact fee.

- To offset the cumulative effects of project traffic and help fund the planned circulation improvements identified in the General Plan, the applicant should pay the required development impact fees.

- City staff has expressed interest in modern roundabouts as alternatives to the planned future installation of traffic signals at the study intersections to support buildout of the General Plan; therefore, it is recommended that Intersection Control Evaluations (ICEs) be performed for the ramp terminals and a feasibility study be prepared for E Street/Vann Street in order to explore the suitability of roundabouts at these locations.

- The new Vann Street/Vann Court intersection should be stop-controlled on the Vann Court approach.

- The design for the Vann Street/Vann Court intersection should include a crosswalk with ADA-compliant curb ramps on the Vann Court leg. All new curb ramps within the development should comply with ADA standards.

- The cross-section for the new section of Vann Street should include Class II bike lanes and on-site bicycle parking should be provided for five percent of the total required vehicle parking spaces.

- Although not required as mitigation, it is recommended that the project incorporate TDM measures identified in this report such as carpool incentives, active transportation incentives, pedestrian and bicycle connections, and EV charging stations.

- To provide adequate sight lines at the intersections of Vann Street with Vada Court and Vann Court, any new signage to be located near the intersections should be placed outside of the vision triangle of a driver waiting on the minor street.

Study Participants and References

Study Participants

Principal in Charge	Dalene J. Whitlock, PE, PTOE
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Assistant Engineer	Kimberly Tellez
Graphics	Cameron Wong
Editing/Formatting	Cameron Wong, Hannah Yung-Boxdell
Quality Control	Dalene J. Whitlock, PE, PTOE

References

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Appendix A

Collision Rate Calculations

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Intersection Collision Rate Worksheet

Valley Ranch Unit 4 Commercial

Intersection # 1: E Street & I-5 South Ramps
Date of Count: Tuesday, April 13, 2021

Number of Collisions: 1
Number of Injuries: 0
Number of Fatalities: 0
Average Daily Traffic (ADT): 9200
Start Date: January 1, 2016
End Date: December 31, 2020
Number of Years: 5

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

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{1 \times 1{,}000{,}000}{9{,}200 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.06 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection # 2: E Street & I-North Ramps
Date of Count: Tuesday, April 13, 2021

Number of Collisions: 2
Number of Injuries: 1
Number of Fatalities: 0
Average Daily Traffic (ADT): 8500
Start Date: January 1, 2016
End Date: December 31, 2020
Number of Years: 5

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

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{2 \times 1{,}000{,}000}{8{,}500 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.13 c/mve**	**0.0%**	**50.0%**
Statewide Average*	**0.08 c/mve**	**1.0%**	**45.1%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Worksheet

Valley Ranch Unit 4 Commercial

Intersection # 3: E Street & Vann Street
Date of Count: Tuesday, April 13, 2021

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
Average Daily Traffic (ADT): 8900
Start Date: January 1, 2016
End Date: December 31, 2020
Number of Years: 5

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

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{0 \times 1{,}000{,}000}{8{,}900 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.13 c/mve**	**1.1%**	**43.8%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2016 Collision Data on California State Highways, Caltrans

Appendix B

Intersection Level of Service Calculations

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Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Two-way stop	Delay (sec / veh):	15.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.052

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	18	0	77	0	262	71	20	285	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0	0	18	0	77	0	262	71	20	285	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9300	0.9300	0.9300	1.0000	0.9300	0.9300	0.9300	0.9300	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	5	0	21	0	70	19	5	77	0
Total Analysis Volume [veh/h]	0	0	0	19	0	83	0	282	76	22	306	0
Pedestrian Volume [ped/h]	3			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane				Yes								
Storage Area [veh]	0			2			0			0		
Two-Stage Gap Acceptance				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	0.05	0.00	0.11	0.00	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	15.40	15.78	10.41	0.00	0.00	0.00	8.07	0.00	0.00
Movement LOS				C	C	B		A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.38	0.38	0.38	0.00	0.00	0.00	0.06	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	9.53	9.53	9.53	0.00	0.00	0.00	1.41	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			11.34			0.00			0.54		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	1.69											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	17.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.203

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	63	0	32	0	0	0	73	207	0	0	238	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	63	0	32	0	0	0	73	207	0	0	238	34
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	0	9	0	0	0	20	58	0	0	66	9
Total Analysis Volume [veh/h]	70	0	36	0	0	0	81	230	0	0	264	38
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	Yes											
Storage Area [veh]	2			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.00	0.04	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.22	17.26	11.20	0.00	0.00	0.00	8.06	0.00	0.00	0.00	0.00	0.00
Movement LOS	C	C	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	0.76	0.76	0.76	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	18.88	18.88	18.88	0.00	0.00	0.00	5.15	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.17			0.00			2.10			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	3.14											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	All-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.330

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	180	9	27	5	7	24	37	81	121	15	70	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	180	9	27	5	7	24	37	81	121	15	70	5
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	2	7	1	2	7	10	22	33	4	19	1
Total Analysis Volume [veh/h]	196	10	29	5	8	26	40	88	132	16	76	5
Pedestrian Volume [ped/h]	0			0			0			1		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	594	713	638	584	635	725	557	608
Degree of Utilization, x	0.33	0.05	0.06	0.07	0.14	0.18	0.03	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.44	0.17	0.19	0.22	0.48	0.66	0.09	0.46
95th-Percentile Queue Length [ft]	35.91	4.33	4.87	5.50	11.97	16.53	2.22	11.45
Approach Delay [s/veh]	11.11		9.01	9.02			9.50	
Approach LOS	B		A	A			A	
Intersection Delay [s/veh]	9.87							
Intersection LOS	A							

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Two-way stop	Delay (sec / veh):	19.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	30	1	110	0	355	79	25	324	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	0	0	30	1	110	0	355	79	25	324	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.8900	0.8900	0.8900	1.0000	0.8900	0.8900	0.8900	0.8900	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	8	0	31	0	100	22	7	91	0
Total Analysis Volume [veh/h]	0	0	0	34	1	124	0	399	89	28	364	0
Pedestrian Volume [ped/h]	2			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane				Yes								
Storage Area [veh]	0			2			0			0		
Two-Stage Gap Acceptance				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	0.13	0.00	0.18	0.00	0.00	0.00	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	19.38	19.41	11.20	0.00	0.00	0.00	8.45	0.00	0.00
Movement LOS				C	C	B		A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.66	0.66	0.66	0.00	0.00	0.00	0.08	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	16.58	16.58	16.58	0.00	0.00	0.00	2.01	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			13.00			0.00			0.60		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	2.22											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	21.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.274

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	67	4	66	0	0	0	82	298	0	0	277	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	67	4	66	0	0	0	82	298	0	0	277	57
Peak Hour Factor	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	1	18	0	0	0	22	81	0	0	75	15
Total Analysis Volume [veh/h]	73	4	72	0	0	0	89	324	0	0	301	62
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	Yes											
Storage Area [veh]	2			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.27	0.01	0.10	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	21.34	21.15	12.84	0.00	0.00	0.00	8.25	0.00	0.00	0.00	0.00	0.00
Movement LOS	C	C	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	1.19	1.19	1.19	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	29.73	29.73	29.73	0.00	0.00	0.00	6.02	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.23			0.00			1.78			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	3.57											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	All-way stop	Delay (sec / veh):	11.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.378

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	181	24	29	15	33	57	82	87	214	49	95	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	181	24	29	15	33	57	82	87	214	49	95	22
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	6	8	4	9	15	22	23	58	13	26	6
Total Analysis Volume [veh/h]	195	26	31	16	35	61	88	94	230	53	102	24
Pedestrian Volume [ped/h]	0			0			0			1		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	516	589	557	526	567	638	496	543
Degree of Utilization, x	0.38	0.10	0.20	0.17	0.17	0.36	0.11	0.23

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.75	0.32	0.74	0.60	0.59	1.64	0.36	0.89
95th-Percentile Queue Length [ft]	43.72	8.00	18.61	14.93	14.75	40.94	8.92	22.25
Approach Delay [s/veh]	12.87		11.08	11.10			11.17	
Approach LOS	B		B	B			B	
Intersection Delay [s/veh]	11.58							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Two-way stop	Delay (sec / veh):	16.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.072

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	18	0	77	0	262	71	20	285	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	3	0	0	0	5	0	23	14	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	0	0	21	0	77	0	267	71	43	299	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9300	0.9300	0.9300	1.0000	0.9300	0.9300	0.9300	0.9300	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	6	0	21	0	72	19	12	80	0
Total Analysis Volume [veh/h]	0	0	0	23	0	83	0	287	76	46	322	0
Pedestrian Volume [ped/h]	3			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane				Yes								
Storage Area [veh]	0			2			0			0		
Two-Stage Gap Acceptance				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	0.07	0.00	0.12	0.00	0.00	0.00	0.04	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	16.75	17.01	10.52	0.00	0.00	0.00	8.15	0.00	0.00
Movement LOS				C	C	B		A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.39	0.39	0.39	0.00	0.00	0.00	0.12	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	9.75	9.75	9.75	0.00	0.00	0.00	3.02	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			11.87			0.00			1.02		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	1.95											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	18.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.222

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	63	0	32	0	0	0	73	207	0	0	238	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	8	0	0	0	0	8	0	0	37	9
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	63	0	40	0	0	0	73	215	0	0	275	43
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	0	11	0	0	0	20	60	0	0	76	12
Total Analysis Volume [veh/h]	70	0	44	0	0	0	81	239	0	0	306	48
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	Yes											
Storage Area [veh]	2			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.22	0.00	0.06	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	18.44	18.42	11.50	0.00	0.00	0.00	8.20	0.00	0.00	0.00	0.00	0.00
Movement LOS	C	C	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	0.84	0.84	0.84	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	21.10	21.10	21.10	0.00	0.00	0.00	5.40	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.76			0.00			2.08			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	3.12											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	All-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.342

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	180	9	27	5	7	24	37	81	121	15	70	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	16	0	0	46	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	9	27	5	7	24	37	97	121	15	116	5
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	2	7	1	2	7	10	26	33	4	32	1
Total Analysis Volume [veh/h]	196	10	29	5	8	26	40	105	132	16	126	5
Pedestrian Volume [ped/h]	0			0			0			1		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	573	683	612	568	617	701	548	596
Degree of Utilization, x	0.34	0.06	0.06	0.07	0.17	0.19	0.03	0.22

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.51	0.18	0.20	0.23	0.61	0.69	0.09	0.83
95th-Percentile Queue Length [ft]	37.78	4.53	5.09	5.67	15.25	17.23	2.25	20.80
Approach Delay [s/veh]	11.56		9.29	9.36			10.32	
Approach LOS	B		A	A			B	
Intersection Delay [s/veh]	10.30							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Two-way stop	Delay (sec / veh):	21.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.188

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	30	1	110	0	355	79	25	324	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	10	0	0	0	16	0	14	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	40	1	110	0	371	79	39	334	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.8900	0.8900	0.8900	1.0000	0.8900	0.8900	0.8900	0.8900	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	11	0	31	0	104	22	11	94	0
Total Analysis Volume [veh/h]	0	0	0	45	1	124	0	417	89	44	375	0
Pedestrian Volume [ped/h]	2			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane				Yes								
Storage Area [veh]	0			2			0			0		
Two-Stage Gap Acceptance				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	0.19	0.00	0.18	0.00	0.00	0.00	0.04	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	21.01	20.85	11.33	0.00	0.00	0.00	8.56	0.00	0.00
Movement LOS				C	C	B		A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.71	0.71	0.71	0.00	0.00	0.00	0.13	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	17.70	17.70	17.70	0.00	0.00	0.00	3.26	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			13.95			0.00			0.90		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	2.51											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	22.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.300

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	67	4	66	0	0	0	82	298	0	0	277	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	26	0	0	0	0	26	0	0	24	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	67	4	92	0	0	0	82	324	0	0	301	63
Peak Hour Factor	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	1	25	0	0	0	22	88	0	0	82	17
Total Analysis Volume [veh/h]	73	4	100	0	0	0	89	352	0	0	327	68
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	Yes											
Storage Area [veh]	2			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.30	0.02	0.14	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	22.77	22.44	13.16	0.00	0.00	0.00	8.35	0.00	0.00	0.00	0.00	0.00
Movement LOS	C	C	B				A	A			A	A
95th-Percentile Queue Length [veh/ln]	1.35	1.35	1.35	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	33.78	33.78	33.78	0.00	0.00	0.00	6.20	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.33			0.00			1.69			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	3.76											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	All-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.392

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	181	24	29	15	33	57	82	87	214	49	95	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	52	0	0	30	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]	181	24	29	15	33	57	82	139	214	49	125	22
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	6	8	4	9	15	22	37	58	13	34	6
Total Analysis Volume [veh/h]	195	26	31	16	35	61	88	149	230	53	134	24
Pedestrian Volume [ped/h]	0			0			0			1		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	498	565	538	515	555	623	485	529
Degree of Utilization, x	0.39	0.10	0.21	0.17	0.27	0.37	0.11	0.30

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.84	0.33	0.78	0.61	1.08	1.70	0.37	1.25
95th-Percentile Queue Length [ft]	46.12	8.37	19.43	15.29	26.97	42.47	9.14	31.14
Approach Delay [s/veh]	13.45		11.44	11.61			12.05	
Approach LOS	B		B	B			B	
Intersection Delay [s/veh]	12.13							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Signalized	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.454

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	378	0	150	0	715	143	125	611	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	-225	0	0	0	-56	0	-195	-49	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	153	0	150	0	659	143	0	562	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	38	0	38	0	165	36	0	141	0
Total Analysis Volume [veh/h]	0	0	0	153	0	150	0	659	143	0	562	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	2			0			1			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			0			2			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	48	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	3	0	0	10	0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No			No			No	
Maximum Recall					No			No			No	
Pedestrian Recall					No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	C	C	L	C
C, Cycle Length [s]		60	60	60	60	60
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		14	38	38	38	38
g / C, Green / Cycle		0.24	0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate		0.20	0.24	0.25	0.00	0.18
s, saturation flow rate [veh/h]		1513	1683	1582	610	3204
c, Capacity [veh/h]		359	1059	996	400	2017
d1, Uniform Delay [s]		21.86	5.42	5.53	0.00	5.01
k, delay calibration		0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		5.42	1.03	1.21	0.00	0.34
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.84	0.38	0.40	0.00	0.28
d, Delay for Lane Group [s/veh]		27.28	6.45	6.74	0.00	5.35
Lane Group LOS		C	A	A	A	A
Critical Lane Group		Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]		4.02	2.15	2.22	0.00	1.22
50th-Percentile Queue Length [ft/ln]		100.39	53.81	55.56	0.00	30.41
95th-Percentile Queue Length [veh/ln]		7.23	3.87	4.00	0.00	2.19
95th-Percentile Queue Length [ft/ln]		180.69	96.86	100.00	0.00	54.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	27.28	27.28	27.28	0.00	6.56	6.74	0.00	5.35	0.00
Movement LOS				C	C	C		A	A	A	A	
d_A, Approach Delay [s/veh]	0.00			27.28			6.60			5.35		
Approach LOS	A			C			A			A		
d_I, Intersection Delay [s/veh]	9.93											
Intersection LOS	A											
Intersection V/C	0.454											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	305.45	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.543	0.000	0.000	0.000
Crosswalk LOS	A	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1467	267	267
d_b, Bicycle Delay [s]	30.00	2.13	22.53	22.53
I_b,int, Bicycle LOS Score for Intersection	4.132	2.060	2.221	2.023
Bicycle LOS	D	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Signalized	Delay (sec / veh):	8.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.359

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	171	5	274	0	0	0	124	969	0	0	565	186
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	-225	0	0	0	0	-281	0	0	-244	-196
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	171	5	49	0	0	0	124	688	0	0	321	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	1	12	0	0	0	31	172	0	0	80	0
Total Analysis Volume [veh/h]	171	5	49	0	0	0	124	688	0	0	321	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	0	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	0	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	51	0	0	0	0	0	9	0	0	9	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No						No			No	
Maximum Recall		No						No			No	
Pedestrian Recall		No						No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C		L	C	C	C
C, Cycle Length [s]	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11		41	41	41	41
g / C, Green / Cycle	0.18		0.69	0.69	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.14		0.13	0.21	0.10	0.10
s, saturation flow rate [veh/h]	1563		953	3204	1683	1683
c, Capacity [veh/h]	279		699	2205	1158	1158
d1, Uniform Delay [s]	23.69		5.32	3.72	3.23	3.23
k, delay calibration	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.42		0.55	0.37	0.25	0.25
d3, Initial Queue Delay [s]	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81		0.18	0.31	0.14	0.14
d, Delay for Lane Group [s/veh]	29.11		5.87	4.09	3.48	3.48
Lane Group LOS	C		A	A	A	A
Critical Lane Group	Yes		No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.09		0.66	1.22	0.49	0.49
50th-Percentile Queue Length [ft/ln]	77.27		16.48	30.48	12.20	12.20
95th-Percentile Queue Length [veh/ln]	5.56		1.19	2.19	0.88	0.88
95th-Percentile Queue Length [ft/ln]	139.08		29.67	54.86	21.97	21.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.11	29.11	29.11	0.00	0.00	0.00	5.87	4.09	0.00	0.00	3.48	3.48
Movement LOS	C	C	C				A	A			A	A
d_A, Approach Delay [s/veh]	29.11			0.00			4.36			3.48		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	8.25											
Intersection LOS	A											
Intersection V/C	0.359											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1567	0	167	167
d_b, Bicycle Delay [s]	1.41	30.00	25.21	25.21
I_b,int, Bicycle LOS Score for Intersection	1.931	4.132	2.230	1.824
Bicycle LOS	A	D	B	A

Sequence

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

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	Signalized	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.444

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	241	21	96	13	35	84	168	804	262	94	437	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-11	0	-39	-10	-440	-506	0	0	0	0	-45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	241	10	96	0	25	0	0	804	262	94	437	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	3	24	0	6	0	0	201	66	24	109	0
Total Analysis Volume [veh/h]	241	10	96	0	25	0	0	804	262	94	437	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			1		
v_di, Inbound Pedestrian Volume crossing major street [	1			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	26	0	0	26	0	0	34	0	0	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	16	16	16	36	36	36	36	36	36
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.59	0.59	0.59	0.59	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.19	0.07	0.01	0.00	0.00	0.25	0.18	0.15	0.13	0.13
s, saturation flow rate [veh/h]	1247	1450	1683	1431	856	3204	1431	609	1683	1683
c, Capacity [veh/h]	402	397	521	392	551	1900	848	381	998	998
d1, Uniform Delay [s]	22.25	17.07	16.06	0.00	0.00	6.64	6.09	11.59	5.72	5.72
k, delay calibration	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.43	0.36	0.04	0.00	0.00	0.69	0.95	1.54	0.51	0.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.27	0.05	0.00	0.00	0.42	0.31	0.25	0.22	0.22
d, Delay for Lane Group [s/veh]	23.68	17.42	16.10	0.00	0.00	7.33	7.04	13.12	6.22	6.22
Lane Group LOS	C	B	B	A	A	A	A	B	A	A
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	3.22	1.12	0.25	0.00	0.00	2.40	1.55	0.93	1.18	1.18
50th-Percentile Queue Length [ft/ln]	80.41	27.98	6.13	0.00	0.00	59.99	38.69	23.16	29.43	29.43
95th-Percentile Queue Length [veh/ln]	5.79	2.01	0.44	0.00	0.00	4.32	2.79	1.67	2.12	2.12
95th-Percentile Queue Length [ft/ln]	144.75	50.37	11.03	0.00	0.00	107.98	69.65	41.69	52.97	52.97

Movement, Approach, & Intersection Results

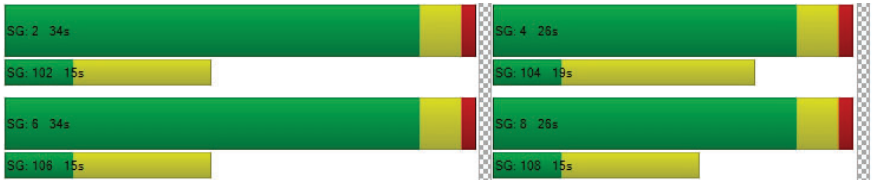
d_M, Delay for Movement [s/veh]	23.68	17.42	17.42	16.10	16.10	0.00	0.00	7.33	7.04	13.12	6.22	6.22
Movement LOS	C	B	B	B	B	A	A	A	A	B	A	A
d_A, Approach Delay [s/veh]	21.77			16.10			7.26			7.44		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	9.98											
Intersection LOS	A											
Intersection V/C	0.444											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	9251.61
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.252	1.930	3.013	2.513
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	733	1000	1000
d_b, Bicycle Delay [s]	12.03	12.03	7.50	7.50
I_b,int, Bicycle LOS Score for Intersection	2.132	1.601	2.439	1.998
Bicycle LOS	B	A	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	250	5	178	0	675	173	239	753	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	-140	0	0	0	-35	0	-150	-37	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	110	5	178	0	640	173	89	716	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	28	1	45	0	160	43	22	179	0
Total Analysis Volume [veh/h]	0	0	0	110	5	178	0	640	173	89	716	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	1			0			1			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			0			1			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	48	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	3	0	0	10	0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No			No			No	
Maximum Recall					No			No			No	
Pedestrian Recall					No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	C	C	L	C
C, Cycle Length [s]		60	60	60	60	60
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		14	38	38	38	38
g / C, Green / Cycle		0.23	0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate		0.20	0.24	0.26	0.15	0.22
s, saturation flow rate [veh/h]		1495	1683	1564	604	3204
c, Capacity [veh/h]		348	1067	992	398	2031
d1, Uniform Delay [s]		22.00	5.31	5.44	10.24	5.19
k, delay calibration		0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		5.49	1.03	1.26	1.30	0.48
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.84	0.38	0.41	0.22	0.35
d, Delay for Lane Group [s/veh]		27.49	6.35	6.70	11.53	5.67
Lane Group LOS		C	A	A	B	A
Critical Lane Group		Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]		3.90	2.15	2.23	0.78	1.62
50th-Percentile Queue Length [ft/ln]		97.52	53.73	55.85	19.49	40.41
95th-Percentile Queue Length [veh/ln]		7.02	3.87	4.02	1.40	2.91
95th-Percentile Queue Length [ft/ln]		175.53	96.71	100.52	35.09	72.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	27.49	27.49	27.49	0.00	6.48	6.70	11.53	5.67	0.00
Movement LOS				C	C	C		A	A	B	A	
d_A, Approach Delay [s/veh]	0.00			27.49			6.52			6.32		
Approach LOS	A			C			A			A		
d_I, Intersection Delay [s/veh]	9.65											
Intersection LOS	A											
Intersection V/C	0.456											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.791	0.000	0.000	0.000
Crosswalk LOS	A	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1467	267	267
d_b, Bicycle Delay [s]	30.00	2.13	22.53	22.53
I_b,int, Bicycle LOS Score for Intersection	4.132	2.043	2.230	2.224
Bicycle LOS	D	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Signalized	Delay (sec / veh):	5.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.403

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	140	5	127	0	0	0	75	850	0	0	852	436
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	-140	0	0	0	0	-175	0	0	-187	-149
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	5	0	0	0	0	75	675	0	0	665	287
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	1	0	0	0	0	19	169	0	0	166	72
Total Analysis Volume [veh/h]	140	5	0	0	0	0	75	675	0	0	665	287
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	0	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	0	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	51	0	0	0	0	0	9	0	0	9	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No						No			No	
Maximum Recall		No						No			No	
Pedestrian Recall		No						No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C		L	C	C	C
C, Cycle Length [s]	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7		45	45	45	45
g / C, Green / Cycle	0.12		0.75	0.75	0.75	0.75
(v / s)_i Volume / Saturation Flow Rate	0.09		0.14	0.21	0.28	0.31
s, saturation flow rate [veh/h]	1605		530	3204	1683	1521
c, Capacity [veh/h]	188		432	2402	1262	1140
d1, Uniform Delay [s]	25.73		5.92	2.38	2.62	2.74
k, delay calibration	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.56		0.87	0.29	0.86	1.13
d3, Initial Queue Delay [s]	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77		0.17	0.28	0.38	0.42
d, Delay for Lane Group [s/veh]	32.29		6.79	2.68	3.48	3.86
Lane Group LOS	C		A	A	A	A
Critical Lane Group	Yes		No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.12		0.47	0.74	1.15	1.24
50th-Percentile Queue Length [ft/ln]	53.09		11.76	18.47	28.68	30.98
95th-Percentile Queue Length [veh/ln]	3.82		0.85	1.33	2.07	2.23
95th-Percentile Queue Length [ft/ln]	95.56		21.17	33.25	51.63	55.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.29	32.29	32.29	0.00	0.00	0.00	6.79	2.68	0.00	0.00	3.59	3.86
Movement LOS	C	C	C				A	A			A	A
d_A, Approach Delay [s/veh]	32.29			0.00			3.09			3.67		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	5.68											
Intersection LOS	A											
Intersection V/C	0.403											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1567	0	167	167
d_b, Bicycle Delay [s]	1.41	30.00	25.21	25.21
I_b,int, Bicycle LOS Score for Intersection	1.799	4.132	2.178	2.345
Bicycle LOS	A	D	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	Signalized	Delay (sec / veh):	11.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.457

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	287	30	114	20	27	250	161	520	302	127	766	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-7	0	-30	-7	-336	-315	0	0	0	0	-28
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	287	23	114	0	20	0	0	520	302	127	766	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	6	29	0	5	0	0	130	76	32	192	0
Total Analysis Volume [veh/h]	287	23	114	0	20	0	0	520	302	127	766	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			1		
v_di, Inbound Pedestrian Volume crossing major street [	1			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	33	0	0	33	0	0	27	0	0	27	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	19	19	33	33	33	33	33	33
g / C, Green / Cycle	0.31	0.31	0.31	0.31	0.55	0.55	0.55	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.23	0.09	0.01	0.00	0.00	0.16	0.21	0.16	0.23	0.23
s, saturation flow rate [veh/h]	1253	1466	1683	1431	631	3204	1431	793	1683	1683
c, Capacity [veh/h]	455	458	586	447	370	1776	793	469	933	933
d1, Uniform Delay [s]	20.89	15.65	14.36	0.00	0.00	7.12	7.56	11.20	7.72	7.72
k, delay calibration	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.45	0.36	0.02	0.00	0.00	0.42	1.39	1.42	1.34	1.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.30	0.03	0.00	0.00	0.29	0.38	0.27	0.41	0.41
d, Delay for Lane Group [s/veh]	22.34	16.01	14.38	0.00	0.00	7.54	8.95	12.62	9.06	9.06
Lane Group LOS	C	B	B	A	A	A	A	B	A	A
Critical Lane Group	Yes	No	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.74	1.38	0.18	0.00	0.00	1.58	2.13	1.19	2.71	2.71
50th-Percentile Queue Length [ft/ln]	93.54	34.43	4.55	0.00	0.00	39.57	53.27	29.84	67.76	67.76
95th-Percentile Queue Length [veh/ln]	6.73	2.48	0.33	0.00	0.00	2.85	3.84	2.15	4.88	4.88
95th-Percentile Queue Length [ft/ln]	168.37	61.97	8.19	0.00	0.00	71.23	95.89	53.72	121.96	121.96

Movement, Approach, & Intersection Results

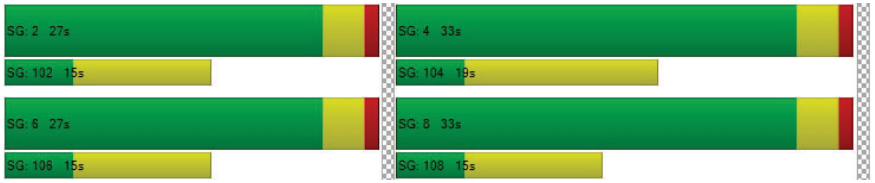
d_M, Delay for Movement [s/veh]	22.34	16.01	16.01	14.38	14.38	0.00	0.00	7.54	8.95	12.62	9.06	9.06
Movement LOS	C	B	B	B	B	A	A	A	A	B	A	A
d_A, Approach Delay [s/veh]	20.30			14.38			8.05			9.56		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	11.14											
Intersection LOS	B											
Intersection V/C	0.457											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	8824.62
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.338	1.933	3.096	2.529
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	967	967	767	767
d_b, Bicycle Delay [s]	8.01	8.01	11.41	11.41
I_b,int, Bicycle LOS Score for Intersection	2.259	1.593	2.238	2.296
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Two-way stop	Delay (sec / veh):	585.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.027

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	18	0	77	0	262	71	20	285	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	225	0	0	0	56	0	195	49	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	0	0	243	0	77	0	318	71	215	334	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9300	0.9300	0.9300	1.0000	0.9300	0.9300	0.9300	0.9300	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	65	0	21	0	85	19	58	90	0
Total Analysis Volume [veh/h]	0	0	0	261	0	83	0	342	76	231	359	0
Pedestrian Volume [ped/h]	3			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane				Yes								
Storage Area [veh]	0			2			0			0		
Two-Stage Gap Acceptance				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	2.03	0.00	0.12	0.00	0.00	0.00	0.20	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	585.86	583.85	563.15	0.00	0.00	0.00	8.98	0.00	0.00
Movement LOS				F	F	F		A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	27.60	27.60	27.60	0.00	0.00	0.00	0.76	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	689.95	689.95	689.95	0.00	0.00	0.00	19.04	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			580.38			0.00			3.52		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	149.20											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	55.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.626

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	63	0	32	0	0	0	73	207	0	0	238	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	225	0	0	0	0	281	0	0	244	196
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	63	0	257	0	0	0	73	488	0	0	482	230
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	0	71	0	0	0	20	136	0	0	134	64
Total Analysis Volume [veh/h]	70	0	286	0	0	0	81	542	0	0	536	256
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	Yes											
Storage Area [veh]	2			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.63	0.00	0.53	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	55.44	55.78	29.92	0.00	0.00	0.00	9.81	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	F	D				A	A			A	A
95th-Percentile Queue Length [veh/ln]	6.11	6.11	6.11	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	152.66	152.66	152.66	0.00	0.00	0.00	8.10	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	34.94			0.00			1.28			0.00		
Approach LOS	D			A			A			A		
d_I, Intersection Delay [s/veh]	7.47											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	All-way stop	Delay (sec / veh):	120.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.399

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	180	9	27	5	7	24	37	81	121	15	70	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	39	10	440	506	0	0	0	0	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	21	27	44	17	464	543	81	121	15	70	50
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	6	7	12	5	126	148	22	33	4	19	14
Total Analysis Volume [veh/h]	196	23	29	48	18	504	590	88	132	16	76	54
Pedestrian Volume [ped/h]	0			0			0			1		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	381	420	570	590	448	490	365	397
Degree of Utilization, x	0.51	0.12	1.20	1.40	0.20	0.27	0.04	0.33

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.83	0.42	21.72	28.74	0.72	1.08	0.14	1.40
95th-Percentile Queue Length [ft]	70.82	10.51	542.90	718.44	18.07	27.03	3.42	35.09
Approach Delay [s/veh]	19.81		133.78	161.50			15.79	
Approach LOS	C		F	F			C	
Intersection Delay [s/veh]	120.79							
Intersection LOS	F							

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	All-way stop	Delay (sec / veh):	12.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.621

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	18	0	77	0	262	71	20	285	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	225	0	0	0	56	0	195	49	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	0	0	243	0	77	0	318	71	215	334	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9300	0.9300	0.9300	1.0000	0.9300	0.9300	0.9300	0.9300	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	65	0	21	0	85	19	58	90	0
Total Analysis Volume [veh/h]	0	0	0	261	0	83	0	342	76	231	359	0
Pedestrian Volume [ped/h]	3			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]		554	647	678	665	733	733
Degree of Utilization, x		0.62	0.32	0.31	0.35	0.24	0.24

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]		4.23	1.40	1.31	1.55	0.96	0.96
95th-Percentile Queue Length [ft]		105.82	34.92	32.73	38.80	24.00	24.00
Approach Delay [s/veh]	0.00	19.55	10.63		9.89		
Approach LOS	A	C	B		A		
Intersection Delay [s/veh]	12.58						
Intersection LOS	B						

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	All-way stop	Delay (sec / veh):	15.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.666

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	63	0	32	0	0	0	73	207	0	0	238	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	225	0	0	0	0	281	0	0	244	196
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	63	0	257	0	0	0	73	488	0	0	482	230
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	0	71	0	0	0	20	136	0	0	134	64
Total Analysis Volume [veh/h]	70	0	286	0	0	0	81	542	0	0	536	256
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	535		613	669	669	632	687
Degree of Utilization, x	0.67		0.13	0.40	0.40	0.63	0.58

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	4.90		0.45	1.96	1.96	4.37	3.71
95th-Percentile Queue Length [ft]	122.49		11.35	49.08	49.08	109.35	92.71
Approach Delay [s/veh]	22.12	0.00	11.40			16.13	
Approach LOS	C	A	B			C	
Intersection Delay [s/veh]	15.67						
Intersection LOS	C						

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	Signalized	Delay (sec / veh):	33.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.873

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	180	9	27	5	7	24	37	81	121	15	70	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	39	10	440	506	0	0	0	0	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	21	27	44	17	464	543	81	121	15	70	50
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	6	7	12	5	126	148	22	33	4	19	14
Total Analysis Volume [veh/h]	196	23	29	48	18	504	590	88	132	16	76	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			1		
v_di, Inbound Pedestrian Volume crossing major street [	1			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	3	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	25	0	0	25	0	0	35	0	0	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	21	21	21	31	31	31	31	31
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.52	0.52	0.52	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.16	0.03	0.06	0.35	0.52	0.05	0.09	0.01	0.08
s, saturation flow rate [veh/h]	1255	1531	1183	1431	1134	1683	1431	1178	1568
c, Capacity [veh/h]	439	538	519	503	615	867	737	655	808
d1, Uniform Delay [s]	19.81	13.08	14.09	19.49	19.03	7.45	7.78	9.08	7.70
k, delay calibration	0.11	0.11	0.11	0.24	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.08	0.11	27.99	27.46	0.23	0.53	0.07	0.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.10	0.13	1.00	0.96	0.10	0.18	0.02	0.16
d, Delay for Lane Group [s/veh]	20.53	13.16	14.19	47.49	46.48	7.69	8.31	9.14	8.13
Lane Group LOS	C	B	B	F	D	A	A	A	A
Critical Lane Group	No	No	No	Yes	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	2.36	0.45	0.62	10.25	12.96	0.56	0.90	0.12	0.86
50th-Percentile Queue Length [ft/ln]	59.07	11.29	15.61	256.29	324.10	13.99	22.42	2.92	21.59
95th-Percentile Queue Length [veh/ln]	4.25	0.81	1.12	15.52	18.87	1.01	1.61	0.21	1.55
95th-Percentile Queue Length [ft/ln]	106.33	20.32	28.11	388.05	471.72	25.17	40.35	5.26	38.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.53	13.16	13.16	14.19	14.19	47.49	46.48	7.69	8.31	9.14	8.13	8.13
Movement LOS	C	B	B	B	B	F	D	A	A	A	A	A
d_A, Approach Delay [s/veh]	18.98			43.63			36.05			8.24		
Approach LOS	B			D			D			A		
d_I, Intersection Delay [s/veh]	33.81											
Intersection LOS	C											
Intersection V/C	0.873											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	9702.33
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.056	3.095	2.817	2.073
Crosswalk LOS	B	C	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	700	1033	1033
d_b, Bicycle Delay [s]	12.68	12.68	7.01	7.01
I_b,int, Bicycle LOS Score for Intersection	1.969	2.500	2.896	1.801
Bicycle LOS	A	B	C	A

Sequence

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

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Two-way stop	Delay (sec / veh):	456.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.660

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	30	1	110	0	355	79	25	324	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	140	0	0	0	35	0	150	37	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	170	1	110	0	390	79	175	361	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.8900	0.8900	0.8900	1.0000	0.8900	0.8900	0.8900	0.8900	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	48	0	31	0	110	22	49	101	0
Total Analysis Volume [veh/h]	0	0	0	191	1	124	0	438	89	197	406	0
Pedestrian Volume [ped/h]	2			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane				Yes								
Storage Area [veh]	0			2			0			0		
Two-Stage Gap Acceptance				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	1.66	0.01	0.19	0.00	0.00	0.00	0.19	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	456.11	453.58	430.40	0.00	0.00	0.00	9.29	0.00	0.00
Movement LOS				F	F	F		A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	23.16	23.16	23.16	0.00	0.00	0.00	0.70	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	579.01	579.01	579.01	0.00	0.00	0.00	17.49	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			446.01			0.00			3.03		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	98.73											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	53.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.596

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	67	4	66	0	0	0	82	298	0	0	277	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	140	0	0	0	0	175	0	0	187	149
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	67	4	206	0	0	0	82	473	0	0	464	206
Peak Hour Factor	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	1	56	0	0	0	22	129	0	0	126	56
Total Analysis Volume [veh/h]	73	4	224	0	0	0	89	514	0	0	504	224
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	Yes											
Storage Area [veh]	2			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.60	0.03	0.40	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	53.77	53.76	30.82	0.00	0.00	0.00	9.58	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	F	D				A	A			A	A
95th-Percentile Queue Length [veh/ln]	5.61	5.61	5.61	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	140.30	140.30	140.30	0.00	0.00	0.00	8.46	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	36.69			0.00			1.41			0.00		
Approach LOS	E			A			A			A		
d_I, Intersection Delay [s/veh]	7.29											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	All-way stop	Delay (sec / veh):	64.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.144

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	181	24	29	15	33	57	82	87	214	49	95	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	30	7	336	315	0	0	0	0	28
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	181	32	29	45	40	393	397	87	214	49	95	50
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	9	8	12	11	106	107	23	58	13	26	13
Total Analysis Volume [veh/h]	195	34	31	48	43	423	427	94	230	53	102	54
Pedestrian Volume [ped/h]	0			0			0			1		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	364	396	514	427	429	468	356	383
Degree of Utilization, x	0.54	0.16	1.14	1.05	0.22	0.49	0.15	0.41

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.03	0.58	18.49	14.07	0.82	2.66	0.52	1.93
95th-Percentile Queue Length [ft]	75.84	14.52	462.35	351.73	20.62	66.59	12.96	48.28
Approach Delay [s/veh]	21.01		115.22	57.94			17.45	
Approach LOS	C		F	F			C	
Intersection Delay [s/veh]	64.50							
Intersection LOS	F							

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	All-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.579

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	30	1	110	0	355	79	25	324	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	140	0	0	0	35	0	150	37	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	170	1	110	0	390	79	175	361	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.8900	0.8900	0.8900	1.0000	0.8900	0.8900	0.8900	0.8900	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	48	0	31	0	110	22	49	101	0
Total Analysis Volume [veh/h]	0	0	0	191	1	124	0	438	89	197	406	0
Pedestrian Volume [ped/h]	2			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]		547	643	671	650	715	715
Degree of Utilization, x		0.58	0.41	0.39	0.30	0.28	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]		3.65	2.00	1.87	1.28	1.17	1.17
95th-Percentile Queue Length [ft]		91.35	49.98	46.78	31.89	29.23	29.23
Approach Delay [s/veh]	0.00	18.24	11.81		10.02		
Approach LOS	A	C	B		B		
Intersection Delay [s/veh]	12.47						
Intersection LOS	B						

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	All-way stop	Delay (sec / veh):	13.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.570

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	67	4	66	0	0	0	82	298	0	0	277	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	140	0	0	0	0	175	0	0	187	149
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	67	4	206	0	0	0	82	473	0	0	464	206
Peak Hour Factor	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	1	56	0	0	0	22	129	0	0	126	56
Total Analysis Volume [veh/h]	73	4	224	0	0	0	89	514	0	0	504	224
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	543		622	681	681	638	691
Degree of Utilization, x	0.56		0.14	0.38	0.38	0.57	0.53

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.37		0.50	1.76	1.76	3.60	3.11
95th-Percentile Queue Length [ft]	84.22		12.42	43.97	43.97	90.10	77.72
Approach Delay [s/veh]	17.61	0.00	10.90			14.57	
Approach LOS	C	A	B			B	
Intersection Delay [s/veh]	13.77						
Intersection LOS	B						

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	Signalized	Delay (sec / veh):	18.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.681

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	181	24	29	15	33	57	82	87	214	49	95	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	30	7	336	315	0	0	0	0	28
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	181	32	29	45	40	393	397	87	214	49	95	50
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	9	8	12	11	106	107	23	58	13	26	13
Total Analysis Volume [veh/h]	195	34	31	48	43	423	427	94	230	53	102	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			1		
v_di, Inbound Pedestrian Volume crossing major street [	1			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	25	0	0	25	0	0	35	0	0	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	19	19	33	33	33	33	33
g / C, Green / Cycle	0.32	0.32	0.32	0.32	0.54	0.54	0.54	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.16	0.04	0.07	0.30	0.39	0.06	0.16	0.05	0.10
s, saturation flow rate [veh/h]	1227	1551	1298	1431	1107	1683	1431	1172	1586
c, Capacity [veh/h]	404	504	513	465	626	912	775	682	860
d1, Uniform Delay [s]	21.08	14.30	14.79	19.45	14.44	6.68	7.51	8.51	6.99
k, delay calibration	0.11	0.11	0.11	0.15	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	0.11	0.16	9.60	5.94	0.23	0.98	0.22	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.13	0.18	0.91	0.68	0.10	0.30	0.08	0.18
d, Delay for Lane Group [s/veh]	21.98	14.41	14.95	29.06	20.38	6.90	8.49	8.74	7.46
Lane Group LOS	C	B	B	C	C	A	A	A	A
Critical Lane Group	No	No	No	Yes	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	2.46	0.60	0.85	6.42	5.48	0.55	1.57	0.38	0.97
50th-Percentile Queue Length [ft/ln]	61.45	15.02	21.31	160.39	136.93	13.81	39.33	9.39	24.28
95th-Percentile Queue Length [veh/ln]	4.42	1.08	1.53	10.57	9.32	0.99	2.83	0.68	1.75
95th-Percentile Queue Length [ft/ln]	110.61	27.03	38.35	264.23	232.88	24.86	70.79	16.90	43.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.98	14.41	14.41	14.95	14.95	29.06	20.38	6.90	8.49	8.74	7.46	7.46
Movement LOS	C	B	B	B	B	C	C	A	A	A	A	A
d_A, Approach Delay [s/veh]	20.09			26.56			15.05			7.78		
Approach LOS	C			C			B			A		
d_I, Intersection Delay [s/veh]	18.34											
Intersection LOS	B											
Intersection V/C	0.681											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	9654.89
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.155	2.807	2.797	2.093
Crosswalk LOS	B	C	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	700	1033	1033
d_b, Bicycle Delay [s]	12.68	12.68	7.01	7.01
I_b,int, Bicycle LOS Score for Intersection	1.989	2.408	2.799	1.904
Bicycle LOS	A	B	C	A

Sequence

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

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Two-way stop	Delay (sec / veh):	746.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.368

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	18	0	77	0	262	71	20	285	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	228	0	0	0	61	0	218	63	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	246	0	77	0	323	71	238	348	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9300	0.9300	0.9300	1.0000	0.9300	0.9300	0.9300	0.9300	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	66	0	21	0	87	19	64	94	0
Total Analysis Volume [veh/h]	0	0	0	265	0	83	0	347	76	256	374	0
Pedestrian Volume [ped/h]	3			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane				Yes								
Storage Area [veh]	0			2			0			0		
Two-Stage Gap Acceptance				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	2.37	0.00	0.12	0.00	0.00	0.00	0.23	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	746.65	743.93	719.84	0.00	0.00	0.00	9.12	0.00	0.00
Movement LOS				F	F	F		A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	30.31	30.31	30.31	0.00	0.00	0.00	0.87	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	757.77	757.77	757.77	0.00	0.00	0.00	21.79	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			740.26			0.00			3.70		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	185.54											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	65.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.687

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	63	0	32	0	0	0	73	207	0	0	238	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	233	0	0	0	0	289	0	0	281	205
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	63	0	265	0	0	0	73	496	0	0	519	239
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	0	74	0	0	0	20	138	0	0	144	66
Total Analysis Volume [veh/h]	70	0	294	0	0	0	81	551	0	0	577	266
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	Yes											
Storage Area [veh]	2			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.69	0.00	0.55	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	65.92	66.17	37.36	0.00	0.00	0.00	10.06	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	F	E				B	A			A	A
95th-Percentile Queue Length [veh/ln]	7.43	7.43	7.43	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	185.72	185.72	185.72	0.00	0.00	0.00	8.50	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	42.85			0.00			1.29			0.00		
Approach LOS	E			A			A			A		
d_I, Intersection Delay [s/veh]	8.92											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	All-way stop	Delay (sec / veh):	128.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.437

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	180	9	27	5	7	24	37	81	121	15	70	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	39	10	440	506	16	0	0	46	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	21	27	44	17	464	543	97	121	15	116	50
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	6	7	12	5	126	148	26	33	4	32	14
Total Analysis Volume [veh/h]	196	23	29	48	18	504	590	105	132	16	126	54
Pedestrian Volume [ped/h]	0			0			0			1		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	371	407	570	590	435	474	363	390
Degree of Utilization, x	0.53	0.13	1.24	1.44	0.24	0.28	0.04	0.46

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.96	0.43	23.08	29.85	0.93	1.13	0.14	2.36
95th-Percentile Queue Length [ft]	74.03	10.87	576.95	746.21	23.34	28.17	3.45	58.89
Approach Delay [s/veh]	20.69		150.42	170.58			19.04	
Approach LOS	C		F	F			C	
Intersection Delay [s/veh]	128.01							
Intersection LOS	F							

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Signalized	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.519

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	18	0	77	0	262	71	20	285	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	228	0	0	0	61	0	218	63	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	246	0	77	0	323	71	238	348	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9300	0.9300	0.9300	1.0000	0.9300	0.9300	0.9300	0.9300	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	66	0	21	0	87	19	64	94	0
Total Analysis Volume [veh/h]	0	0	0	265	0	83	0	347	76	256	374	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	2			0			1			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			0			2			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	19	0	0	41	0	0	41	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	3	0	0	10	0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No			No			No	
Maximum Recall					No			No			No	
Pedestrian Recall					No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	C	C	L	C
C, Cycle Length [s]		60	60	60	60	60
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		15	37	37	37	37
g / C, Green / Cycle		0.25	0.62	0.62	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate		0.22	0.13	0.13	0.30	0.12
s, saturation flow rate [veh/h]		1558	1683	1581	867	3204
c, Capacity [veh/h]		391	1037	974	570	1975
d1, Uniform Delay [s]		21.73	5.06	5.11	9.86	5.01
k, delay calibration		0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		7.10	0.44	0.51	2.55	0.21
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.89	0.20	0.22	0.45	0.19
d, Delay for Lane Group [s/veh]		28.83	5.51	5.62	12.41	5.23
Lane Group LOS		C	A	A	B	A
Critical Lane Group		Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		4.78	1.03	1.05	2.26	0.80
50th-Percentile Queue Length [ft/ln]		119.56	25.75	26.23	56.62	20.00
95th-Percentile Queue Length [veh/ln]		8.37	1.85	1.89	4.08	1.44
95th-Percentile Queue Length [ft/ln]		209.22	46.35	47.21	101.92	36.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	28.83	28.83	28.83	0.00	5.55	5.62	12.41	5.23	0.00
Movement LOS				C	C	C		A	A	B	A	
d_A, Approach Delay [s/veh]	0.00			28.83			5.57			8.15		
Approach LOS	A			C			A			A		
d_I, Intersection Delay [s/veh]	12.50											
Intersection LOS	B											
Intersection V/C	0.519											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.092	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	500	1233	1233
d_b, Bicycle Delay [s]	30.00	16.88	4.41	4.41
I_b,int, Bicycle LOS Score for Intersection	4.132	2.134	1.909	2.079
Bicycle LOS	D	B	A	B

Sequence

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

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Signalized	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.528

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	63	0	32	0	0	0	73	207	0	0	238	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	233	0	0	0	0	289	0	0	281	205
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	0	265	0	0	0	73	496	0	0	519	239
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	0	74	0	0	0	20	138	0	0	144	66
Total Analysis Volume [veh/h]	70	0	294	0	0	0	81	551	0	0	577	266
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	0	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	0	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	19	0	0	0	0	0	41	0	0	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No						No			No	
Maximum Recall		No						No			No	
Pedestrian Recall		No						No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C		L	C	C	C
C, Cycle Length [s]	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15		37	37	37	37
g / C, Green / Cycle	0.25		0.62	0.62	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.25		0.14	0.17	0.25	0.28
s, saturation flow rate [veh/h]	1461		587	3204	1683	1514
c, Capacity [veh/h]	368		371	1971	1035	931
d1, Uniform Delay [s]	22.40		11.41	5.37	5.94	6.16
k, delay calibration	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	19.59		1.35	0.35	1.19	1.59
d3, Initial Queue Delay [s]	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.99		0.22	0.28	0.41	0.45
d, Delay for Lane Group [s/veh]	41.99		12.76	5.73	7.12	7.75
Lane Group LOS	D		B	A	A	A
Critical Lane Group	Yes		No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.33		0.79	1.34	2.32	2.47
50th-Percentile Queue Length [ft/ln]	158.21		19.63	33.59	58.05	61.68
95th-Percentile Queue Length [veh/ln]	10.45		1.41	2.42	4.18	4.44
95th-Percentile Queue Length [ft/ln]	261.35		35.33	60.46	104.48	111.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.99	41.99	41.99	0.00	0.00	0.00	12.76	5.73	0.00	0.00	7.29	7.75
Movement LOS	D	D	D				B	A			A	A
d_A, Approach Delay [s/veh]	41.99			0.00			6.63			7.44		
Approach LOS	D			A			A			A		
d_I, Intersection Delay [s/veh]	14.00											
Intersection LOS	B											
Intersection V/C	0.528											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	0	1233	1233
d_b, Bicycle Delay [s]	16.88	30.00	4.41	4.41
I_b,int, Bicycle LOS Score for Intersection	2.160	4.132	2.081	2.255
Bicycle LOS	B	D	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	Signalized	Delay (sec / veh):	33.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.897

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	180	9	27	5	7	24	37	81	121	15	70	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	39	10	440	506	16	0	0	46	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	21	27	44	17	464	543	97	121	15	116	50
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	6	7	12	5	126	148	26	33	4	32	14
Total Analysis Volume [veh/h]	196	23	29	48	18	504	590	105	132	16	126	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			1		
v_di, Inbound Pedestrian Volume crossing major street [	1			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	25	0	0	25	0	0	35	0	0	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	21	21	21	31	31	31	31	31	31
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.52	0.52	0.52	0.52	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.16	0.03	0.06	0.35	0.54	0.03	0.09	0.01	0.05	0.06
s, saturation flow rate [veh/h]	1255	1531	1184	1431	1084	3204	1431	1160	1683	1519
c, Capacity [veh/h]	439	538	520	503	609	1651	737	659	867	783
d1, Uniform Delay [s]	19.81	13.08	14.09	19.49	18.83	7.30	7.78	8.73	7.47	7.50
k, delay calibration	0.11	0.11	0.11	0.24	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.08	0.11	27.99	29.70	0.07	0.53	0.07	0.25	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.10	0.13	1.00	0.97	0.06	0.18	0.02	0.11	0.11
d, Delay for Lane Group [s/veh]	20.52	13.16	14.19	47.49	48.53	7.37	8.31	8.80	7.71	7.79
Lane Group LOS	C	B	B	F	D	A	A	A	A	A
Critical Lane Group	No	No	No	Yes	Yes	No	No	No	No	No
50th-Percentile Queue Length [veh/ln]	2.36	0.45	0.62	10.25	13.30	0.31	0.90	0.11	0.58	0.57
50th-Percentile Queue Length [ft/ln]	59.07	11.29	15.61	256.29	332.42	7.77	22.42	2.85	14.62	14.28
95th-Percentile Queue Length [veh/ln]	4.25	0.81	1.12	15.52	19.28	0.56	1.61	0.21	1.05	1.03
95th-Percentile Queue Length [ft/ln]	106.33	20.32	28.11	388.05	481.92	13.99	40.35	5.13	26.31	25.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.52	13.16	13.16	14.19	14.19	47.49	48.53	7.37	8.31	8.80	7.73	7.79
Movement LOS	C	B	B	B	B	F	D	A	A	A	A	A
d_A, Approach Delay [s/veh]	18.98			43.63			36.89			7.84		
Approach LOS	B			D			D			A		
d_I, Intersection Delay [s/veh]	33.47											
Intersection LOS	C											
Intersection V/C	0.897											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	9702.33
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.056	3.095	2.936	2.410
Crosswalk LOS	B	C	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	700	1033	1033
d_b, Bicycle Delay [s]	12.68	12.68	7.01	7.01
I_b,int, Bicycle LOS Score for Intersection	1.969	2.500	2.242	1.721
Bicycle LOS	A	B	B	A

Sequence

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

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Two-way stop	Delay (sec / veh):	604.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.971

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	30	1	110	0	355	79	25	324	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	150	0	0	0	51	0	164	47	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	180	1	110	0	406	79	189	371	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.8900	0.8900	0.8900	1.0000	0.8900	0.8900	0.8900	0.8900	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	51	0	31	0	114	22	53	104	0
Total Analysis Volume [veh/h]	0	0	0	202	1	124	0	456	89	212	417	0
Pedestrian Volume [ped/h]	2			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane				Yes								
Storage Area [veh]	0			2			0			0		
Two-Stage Gap Acceptance				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	1.97	0.01	0.20	0.00	0.00	0.00	0.21	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	604.04	600.82	574.57	0.00	0.00	0.00	9.45	0.00	0.00
Movement LOS				F	F	F		A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	26.58	26.58	26.58	0.00	0.00	0.00	0.78	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	664.53	664.53	664.53	0.00	0.00	0.00	19.52	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			592.86			0.00			3.19		
Approach LOS	A			F			A			A		
d_I, Intersection Delay [s/veh]	130.49											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Two-way stop	Delay (sec / veh):	63.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	67	4	66	0	0	0	82	298	0	0	277	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	166	0	0	0	0	201	0	0	211	155
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	67	4	232	0	0	0	82	499	0	0	488	212
Peak Hour Factor	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	1	63	0	0	0	22	136	0	0	133	58
Total Analysis Volume [veh/h]	73	4	252	0	0	0	89	542	0	0	530	230
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop			Stop			Free			Free		
Flared Lane	Yes											
Storage Area [veh]	2			0			0			0		
Two-Stage Gap Acceptance	No											
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.65	0.04	0.47	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	63.81	63.58	38.20	0.00	0.00	0.00	9.72	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	F	E				A	A			A	A
95th-Percentile Queue Length [veh/ln]	7.04	7.04	7.04	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	176.10	176.10	176.10	0.00	0.00	0.00	8.72	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	44.19			0.00			1.37			0.00		
Approach LOS	E			A			A			A		
d_I, Intersection Delay [s/veh]	8.96											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	All-way stop	Delay (sec / veh):	68.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.176

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	181	24	29	15	33	57	82	87	214	49	95	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	30	7	336	315	52	0	0	30	28
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	181	32	29	45	40	393	397	139	214	49	125	50
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	9	8	12	11	106	107	37	58	13	34	13
Total Analysis Volume [veh/h]	195	34	31	48	43	423	427	149	230	53	134	54
Pedestrian Volume [ped/h]	0			0			0			1		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	355	385	514	427	421	458	351	376
Degree of Utilization, x	0.55	0.17	1.18	1.07	0.35	0.50	0.15	0.50

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.17	0.60	19.50	14.60	1.57	2.76	0.53	2.69
95th-Percentile Queue Length [ft]	79.20	15.01	487.45	365.00	39.29	69.07	13.16	67.36
Approach Delay [s/veh]	21.95		127.79	59.15			20.02	
Approach LOS	C		F	F			C	
Intersection Delay [s/veh]	68.03							
Intersection LOS	F							

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Signalized	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.487

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	30	1	110	0	355	79	25	324	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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	150	0	0	0	51	0	164	47	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	180	1	110	0	406	79	189	371	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.8900	0.8900	0.8900	1.0000	0.8900	0.8900	0.8900	0.8900	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	51	0	31	0	114	22	53	104	0
Total Analysis Volume [veh/h]	0	0	0	202	1	124	0	456	89	212	417	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	1			0			1			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			0			1			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	19	0	0	41	0	0	41	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	3	0	0	10	0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No			No			No	
Maximum Recall					No			No			No	
Pedestrian Recall					No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	C	C	L	C
C, Cycle Length [s]		60	60	60	60	60
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		14	38	38	38	38
g / C, Green / Cycle		0.24	0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate		0.21	0.16	0.17	0.27	0.13
s, saturation flow rate [veh/h]		1533	1683	1590	775	3204
c, Capacity [veh/h]		370	1052	994	514	2004
d1, Uniform Delay [s]		21.98	5.04	5.09	9.98	4.85
k, delay calibration		0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		6.98	0.60	0.68	2.43	0.24
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.88	0.26	0.27	0.41	0.21
d, Delay for Lane Group [s/veh]		28.95	5.63	5.78	12.42	5.09
Lane Group LOS		C	A	A	B	A
Critical Lane Group		Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		4.50	1.34	1.36	1.89	0.87
50th-Percentile Queue Length [ft/ln]		112.57	33.44	34.12	47.33	21.72
95th-Percentile Queue Length [veh/ln]		7.98	2.41	2.46	3.41	1.56
95th-Percentile Queue Length [ft/ln]		199.57	60.19	61.41	85.19	39.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	28.95	28.95	28.95	0.00	5.69	5.78	12.42	5.09	0.00
Movement LOS				C	C	C		A	A	B	A	
d_A, Approach Delay [s/veh]	0.00			28.95			5.70			7.56		
Approach LOS	A			C			A			A		
d_I, Intersection Delay [s/veh]	11.55											
Intersection LOS	B											
Intersection V/C	0.487											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.000	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	500	1233	1233
d_b, Bicycle Delay [s]	30.00	16.88	4.41	4.41
I_b,int, Bicycle LOS Score for Intersection	4.132	2.099	2.009	2.079
Bicycle LOS	D	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Signalized	Delay (sec / veh):	11.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.474

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	67	4	66	0	0	0	82	298	0	0	277	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	166	0	0	0	0	201	0	0	211	155
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	67	4	232	0	0	0	82	499	0	0	488	212
Peak Hour Factor	0.9200	0.9200	0.9200	1.0000	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	1	63	0	0	0	22	136	0	0	133	58
Total Analysis Volume [veh/h]	73	4	252	0	0	0	89	542	0	0	530	230
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	0	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	0	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	19	0	0	0	0	0	41	0	0	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No						No			No	
Maximum Recall		No						No			No	
Pedestrian Recall		No						No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C		L	C	C	C
C, Cycle Length [s]	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15		37	37	37	37
g / C, Green / Cycle	0.25		0.62	0.62	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.22		0.14	0.17	0.23	0.25
s, saturation flow rate [veh/h]	1468		635	3204	1683	1521
c, Capacity [veh/h]	369		404	1973	1036	936
d1, Uniform Delay [s]	21.73		10.66	5.34	5.73	5.92
k, delay calibration	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.56		1.25	0.35	1.00	1.31
d3, Initial Queue Delay [s]	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89		0.22	0.27	0.37	0.41
d, Delay for Lane Group [s/veh]	29.29		11.91	5.69	6.73	7.22
Lane Group LOS	C		B	A	A	A
Critical Lane Group	Yes		No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.57		0.82	1.31	2.01	2.12
50th-Percentile Queue Length [ft/ln]	114.19		20.44	32.83	50.29	52.95
95th-Percentile Queue Length [veh/ln]	8.07		1.47	2.36	3.62	3.81
95th-Percentile Queue Length [ft/ln]	201.81		36.80	59.10	90.51	95.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.29	29.29	29.29	0.00	0.00	0.00	11.91	5.69	0.00	0.00	6.87	7.22
Movement LOS	C	C	C				B	A			A	A
d_A, Approach Delay [s/veh]	29.29			0.00			6.56			6.98		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	11.09											
Intersection LOS	B											
Intersection V/C	0.474											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	0	1233	1233
d_b, Bicycle Delay [s]	16.88	30.00	4.41	4.41
I_b,int, Bicycle LOS Score for Intersection	2.102	4.132	2.080	2.187
Bicycle LOS	B	D	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	Signalized	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.693

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	181	24	29	15	33	57	82	87	214	49	95	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	30	7	336	315	52	0	0	30	28
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	181	32	29	45	40	393	397	139	214	49	125	50
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	9	8	12	11	106	107	37	58	13	34	13
Total Analysis Volume [veh/h]	195	34	31	48	43	423	427	149	230	53	134	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			1		
v_di, Inbound Pedestrian Volume crossing major street [	1			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	25	0	0	25	0	0	35	0	0	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	19	19	33	33	33	33	33	33
g / C, Green / Cycle	0.32	0.32	0.32	0.32	0.54	0.54	0.54	0.54	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.16	0.04	0.07	0.30	0.40	0.05	0.16	0.05	0.06	0.06
s, saturation flow rate [veh/h]	1227	1552	1298	1431	1076	3204	1431	1114	1683	1525
c, Capacity [veh/h]	404	504	513	465	634	1737	775	660	912	827
d1, Uniform Delay [s]	21.08	14.30	14.79	19.45	13.60	6.61	7.51	8.38	6.69	6.71
k, delay calibration	0.11	0.11	0.11	0.15	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	0.11	0.16	9.60	5.65	0.10	0.98	0.24	0.23	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.13	0.18	0.91	0.67	0.09	0.30	0.08	0.11	0.11
d, Delay for Lane Group [s/veh]	21.98	14.41	14.95	29.06	19.25	6.71	8.49	8.61	6.92	6.98
Lane Group LOS	C	B	B	C	B	A	A	A	A	A
Critical Lane Group	No	No	No	Yes	Yes	No	No	No	No	No
50th-Percentile Queue Length [veh/ln]	2.46	0.60	0.85	6.42	5.28	0.41	1.57	0.37	0.57	0.55
50th-Percentile Queue Length [ft/ln]	61.45	15.02	21.31	160.39	131.90	10.30	39.33	9.34	14.14	13.72
95th-Percentile Queue Length [veh/ln]	4.42	1.08	1.53	10.57	9.04	0.74	2.83	0.67	1.02	0.99
95th-Percentile Queue Length [ft/ln]	110.61	27.03	38.35	264.23	226.08	18.54	70.79	16.80	25.44	24.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.98	14.41	14.41	14.95	14.95	29.06	19.25	6.71	8.49	8.61	6.94	6.98
Movement LOS	C	B	B	B	B	C	B	A	A	A	A	A
d_A, Approach Delay [s/veh]	20.09			26.56			13.86			7.32		
Approach LOS	C			C			B			A		
d_I, Intersection Delay [s/veh]	17.47											
Intersection LOS	B											
Intersection V/C	0.693											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	9654.89
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.155	2.807	2.922	2.425
Crosswalk LOS	B	C	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	700	1033	1033
d_b, Bicycle Delay [s]	12.68	12.68	7.01	7.01
I_b,int, Bicycle LOS Score for Intersection	1.989	2.408	2.225	1.758
Bicycle LOS	A	B	B	A

Sequence

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

Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Signalized	Delay (sec / veh):	15.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.611

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	378	0	150	0	715	143	125	611	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	378	0	150	0	715	143	125	611	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	95	0	38	0	179	36	31	153	0
Total Analysis Volume [veh/h]	0	0	0	378	0	150	0	715	143	125	611	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	2			0			1			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			0			2			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	48	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	3	0	0	10	0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No			No			No	
Maximum Recall					No			No			No	
Pedestrian Recall					No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	C	C	L	C
C, Cycle Length [s]		60	60	60	60	60
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		23	29	29	29	29
g / C, Green / Cycle		0.38	0.49	0.49	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate		0.34	0.25	0.27	0.22	0.19
s, saturation flow rate [veh/h]		1550	1683	1588	579	3204
c, Capacity [veh/h]		587	821	775	273	1564
d1, Uniform Delay [s]		17.59	10.57	10.80	20.71	9.73
k, delay calibration		0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		5.29	2.37	2.84	5.43	0.74
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.90	0.52	0.55	0.46	0.39
d, Delay for Lane Group [s/veh]		22.88	12.94	13.64	26.14	10.47
Lane Group LOS		C	B	B	C	B
Critical Lane Group		Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]		6.31	3.92	4.07	1.91	2.29
50th-Percentile Queue Length [ft/ln]		157.86	98.10	101.64	47.67	57.31
95th-Percentile Queue Length [veh/ln]		10.44	7.06	7.32	3.43	4.13
95th-Percentile Queue Length [ft/ln]		260.89	176.57	182.95	85.81	103.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	22.88	22.88	22.88	0.00	13.22	13.64	26.14	10.47	0.00
Movement LOS				C	C	C		B	B	C	B	
d_A, Approach Delay [s/veh]	0.00			22.88			13.29			13.13		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	15.62											
Intersection LOS	B											
Intersection V/C	0.611											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.843	0.000	0.000	0.000
Crosswalk LOS	A	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1467	267	267
d_b, Bicycle Delay [s]	30.00	2.13	22.53	22.53
I_b,int, Bicycle LOS Score for Intersection	4.132	2.431	2.267	2.167
Bicycle LOS	D	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Signalized	Delay (sec / veh):	13.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.604

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	171	5	274	0	0	0	124	969	0	0	565	186
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	171	5	274	0	0	0	124	969	0	0	565	186
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	1	69	0	0	0	31	242	0	0	141	47
Total Analysis Volume [veh/h]	171	5	274	0	0	0	124	969	0	0	565	186
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	0	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	0	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	51	0	0	0	0	0	9	0	0	9	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No						No			No	
Maximum Recall		No						No			No	
Pedestrian Recall		No						No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C		L	C	C	C
C, Cycle Length [s]	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20		32	32	32	32
g / C, Green / Cycle	0.34		0.53	0.53	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.30		0.19	0.30	0.22	0.24
s, saturation flow rate [veh/h]	1494		640	3204	1683	1548
c, Capacity [veh/h]	508		337	1689	887	816
d1, Uniform Delay [s]	18.76		16.24	9.63	8.65	8.87
k, delay calibration	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.42		3.07	1.42	1.48	1.87
d3, Initial Queue Delay [s]	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89		0.37	0.57	0.42	0.46
d, Delay for Lane Group [s/veh]	24.17		19.31	11.05	10.13	10.74
Lane Group LOS	C		B	B	B	B
Critical Lane Group	Yes		No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.57		1.57	3.96	2.78	2.90
50th-Percentile Queue Length [ft/ln]	139.20		39.29	99.02	69.49	72.50
95th-Percentile Queue Length [veh/ln]	9.44		2.83	7.13	5.00	5.22
95th-Percentile Queue Length [ft/ln]	235.94		70.72	178.23	125.08	130.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.17	24.17	24.17	0.00	0.00	0.00	19.31	11.05	0.00	0.00	10.33	10.74
Movement LOS	C	C	C				B	B			B	B
d_A, Approach Delay [s/veh]	24.17			0.00			11.99			10.43		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	13.87											
Intersection LOS	B											
Intersection V/C	0.604											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1567	0	167	167
d_b, Bicycle Delay [s]	1.41	30.00	25.21	25.21
I_b,int, Bicycle LOS Score for Intersection	2.302	4.132	2.461	2.179
Bicycle LOS	B	D	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	Signalized	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.446

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	241	21	96	13	35	84	168	804	262	94	437	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	241	21	96	13	35	84	168	804	262	94	437	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	5	24	3	9	21	42	201	66	24	109	3
Total Analysis Volume [veh/h]	241	21	96	13	35	84	168	804	262	94	437	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			1		
v_di, Inbound Pedestrian Volume crossing major street [	1			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	26	0	0	26	0	0	34	0	0	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	17	17	36	36	36	36	36	36
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.59	0.59	0.59	0.59	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.20	0.08	0.03	0.06	0.20	0.25	0.18	0.15	0.13	0.13
s, saturation flow rate [veh/h]	1236	1469	1544	1431	846	3204	1431	609	1683	1666
c, Capacity [veh/h]	403	404	501	394	531	1896	846	369	996	986
d1, Uniform Delay [s]	22.18	17.15	16.25	16.77	9.93	6.69	6.14	12.44	5.79	5.79
k, delay calibration	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.42	0.39	0.08	0.27	1.56	0.70	0.95	1.66	0.53	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.29	0.10	0.21	0.32	0.42	0.31	0.26	0.23	0.23
d, Delay for Lane Group [s/veh]	23.60	17.55	16.33	17.04	11.50	7.39	7.09	14.10	6.32	6.33
Lane Group LOS	C	B	B	B	B	A	A	B	A	A
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	3.21	1.24	0.48	0.87	1.47	2.41	1.56	0.97	1.23	1.22
50th-Percentile Queue Length [ft/ln]	80.34	31.08	11.94	21.78	36.83	60.33	38.90	24.30	30.77	30.56
95th-Percentile Queue Length [veh/ln]	5.78	2.24	0.86	1.57	2.65	4.34	2.80	1.75	2.22	2.20
95th-Percentile Queue Length [ft/ln]	144.60	55.95	21.49	39.21	66.29	108.60	70.03	43.75	55.38	55.02

Movement, Approach, & Intersection Results

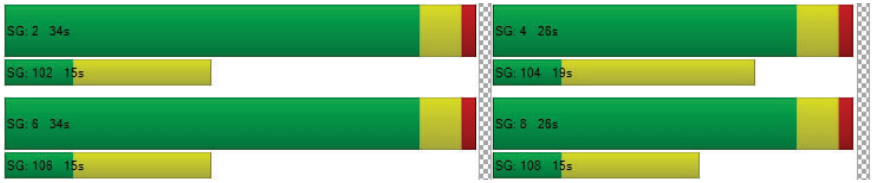
d_M, Delay for Movement [s/veh]	23.60	17.55	17.55	16.33	16.33	17.04	11.50	7.39	7.09	14.10	6.32	6.33
Movement LOS	C	B	B	B	B	B	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	21.62			16.78			7.89			7.67		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	10.52											
Intersection LOS	B											
Intersection V/C	0.446											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	8943.23
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.257	2.250	3.047	2.536
Crosswalk LOS	B	B	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	733	1000	1000
d_b, Bicycle Delay [s]	12.03	12.03	7.50	7.50
I_b,int, Bicycle LOS Score for Intersection	2.150	1.777	2.578	2.008
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 1: E Street/I-5 South Ramps

Control Type:	Signalized	Delay (sec / veh):	15.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.692

Intersection Setup

Name				I-5 South Ramps			E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	135.00	100.00	100.00
Speed [mph]	30.00			45.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name				I-5 South Ramps			E Street			E Street		
Base Volume Input [veh/h]	0	0	0	250	5	178	0	675	173	239	753	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	250	5	178	0	675	173	239	753	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	63	1	45	0	169	43	60	188	0
Total Analysis Volume [veh/h]	0	0	0	250	5	178	0	675	173	239	753	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	1			0			1			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			0			1			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	0	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	48	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	3	0	0	10	0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall					No			No			No	
Maximum Recall					No			No			No	
Pedestrian Recall					No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		C	C	C	L	C
C, Cycle Length [s]		60	60	60	60	60
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		19	33	33	33	33
g / C, Green / Cycle		0.32	0.55	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate		0.28	0.25	0.27	0.41	0.23
s, saturation flow rate [veh/h]		1528	1683	1569	585	3204
c, Capacity [veh/h]		491	918	855	318	1747
d1, Uniform Delay [s]		19.30	8.31	8.52	21.60	8.13
k, delay calibration		0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		5.33	1.67	2.05	15.07	0.78
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.88	0.46	0.50	0.75	0.43
d, Delay for Lane Group [s/veh]		24.63	9.98	10.57	36.67	8.90
Lane Group LOS		C	A	B	D	A
Critical Lane Group		Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		5.42	3.22	3.35	4.62	2.50
50th-Percentile Queue Length [ft/ln]		135.44	80.38	83.65	115.50	62.48
95th-Percentile Queue Length [veh/ln]		9.23	5.79	6.02	8.15	4.50
95th-Percentile Queue Length [ft/ln]		230.87	144.69	150.57	203.63	112.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	24.63	24.63	24.63	0.00	10.20	10.57	36.67	8.90	0.00
Movement LOS				C	C	C		B	B	D	A	
d_A, Approach Delay [s/veh]	0.00			24.63			10.27			15.59		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	15.33											
Intersection LOS	B											
Intersection V/C	0.692											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.151	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1467	267	267
d_b, Bicycle Delay [s]	30.00	2.13	22.53	22.53
I_b,int, Bicycle LOS Score for Intersection	4.132	2.274	2.259	2.378
Bicycle LOS	D	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 2: E Street/I-5 North Ramps

Control Type:	Signalized	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.607

Intersection Setup

Name	I-5 North Ramps						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	110.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			25.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	No			No			No			No		

Volumes

Name	I-5 North Ramps						E Street			E Street		
Base Volume Input [veh/h]	140	5	127	0	0	0	75	850	0	0	852	436
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	5	127	0	0	0	75	850	0	0	852	436
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	1	32	0	0	0	19	213	0	0	213	109
Total Analysis Volume [veh/h]	140	5	127	0	0	0	75	850	0	0	852	436
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	0	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	0	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	51	0	0	0	0	0	9	0	0	9	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No						No			No	
Maximum Recall		No						No			No	
Pedestrian Recall		No						No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C		L	C	C	C
C, Cycle Length [s]	60		60	60	60	60
L, Total Lost Time per Cycle [s]	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00		2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13		39	39	39	39
g / C, Green / Cycle	0.21		0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.18		0.19	0.27	0.38	0.43
s, saturation flow rate [veh/h]	1519		386	3204	1683	1503
c, Capacity [veh/h]	327		253	2087	1096	979
d1, Uniform Delay [s]	22.53		15.97	4.97	5.92	6.39
k, delay calibration	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.44		2.96	0.59	2.31	3.45
d3, Initial Queue Delay [s]	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83		0.30	0.41	0.59	0.66
d, Delay for Lane Group [s/veh]	27.98		18.93	5.56	8.23	9.85
Lane Group LOS	C		B	A	A	A
Critical Lane Group	Yes		No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.66		0.98	1.99	3.75	4.23
50th-Percentile Queue Length [ft/ln]	91.38		24.41	49.77	93.71	105.70
95th-Percentile Queue Length [veh/ln]	6.58		1.76	3.58	6.75	7.60
95th-Percentile Queue Length [ft/ln]	164.49		43.93	89.58	168.68	190.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.98	27.98	27.98	0.00	0.00	0.00	18.93	5.56	0.00	0.00	8.62	9.85
Movement LOS	C	C	C				B	A			A	A
d_A, Approach Delay [s/veh]	27.98			0.00			6.65			9.04		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	10.22											
Intersection LOS	B											
Intersection V/C	0.607											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1567	0	167	167
d_b, Bicycle Delay [s]	1.41	30.00	25.21	25.21
I_b,int, Bicycle LOS Score for Intersection	2.008	4.132	2.323	2.622
Bicycle LOS	B	D	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 3: E Street/Vann Street

Control Type:	Signalized	Delay (sec / veh):	14.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.490

Intersection Setup

Name	Van Street						E Street			E Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	125.00	100.00	60.00	125.00	100.00	100.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Van Street						E Street			E Street		
Base Volume Input [veh/h]	287	30	114	20	27	250	161	520	302	127	766	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	287	30	114	20	27	250	161	520	302	127	766	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	8	29	5	7	63	40	130	76	32	192	5
Total Analysis Volume [veh/h]	287	30	114	20	27	250	161	520	302	127	766	18
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			1		
v_di, Inbound Pedestrian Volume crossing major street [	1			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	33	0	0	33	0	0	27	0	0	27	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	14	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	23	23	29	29	29	29	29	29
g / C, Green / Cycle	0.39	0.39	0.39	0.39	0.48	0.48	0.48	0.48	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.23	0.10	0.04	0.17	0.26	0.16	0.21	0.16	0.23	0.23
s, saturation flow rate [veh/h]	1245	1476	1252	1431	621	3204	1431	793	1683	1669
c, Capacity [veh/h]	453	570	569	553	293	1539	687	388	808	802
d1, Uniform Delay [s]	20.91	12.51	11.69	13.69	21.12	9.68	10.27	15.69	10.58	10.58
k, delay calibration	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.47	0.23	0.06	0.58	7.27	0.60	2.04	2.25	2.10	2.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.25	0.08	0.45	0.55	0.34	0.44	0.33	0.49	0.49
d, Delay for Lane Group [s/veh]	22.38	12.74	11.75	14.26	28.39	10.27	12.31	17.93	12.67	12.69
Lane Group LOS	C	B	B	B	C	B	B	B	B	B
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	No	No
50th-Percentile Queue Length [veh/ln]	3.75	1.25	0.38	2.39	2.62	1.98	2.68	1.51	3.54	3.52
50th-Percentile Queue Length [ft/ln]	93.87	31.19	9.42	59.71	65.61	49.60	66.98	37.67	88.60	87.98
95th-Percentile Queue Length [veh/ln]	6.76	2.25	0.68	4.30	4.72	3.57	4.82	2.71	6.38	6.33
95th-Percentile Queue Length [ft/ln]	168.96	56.14	16.95	107.47	118.10	89.29	120.57	67.80	159.47	158.36

Movement, Approach, & Intersection Results

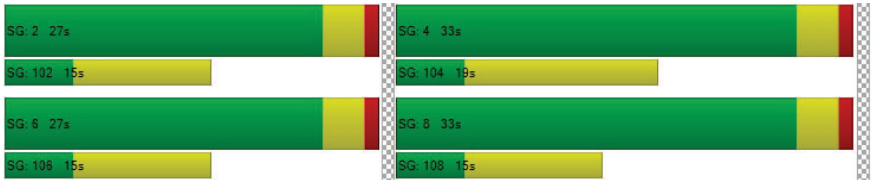
d_M, Delay for Movement [s/veh]	22.38	12.74	12.74	11.75	11.75	14.26	28.39	10.27	12.31	17.93	12.68	12.69
Movement LOS	C	B	B	B	B	B	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	19.16			13.87			13.87			13.41		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	14.58											
Intersection LOS	B											
Intersection V/C	0.490											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	8350.17
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.342	2.287	3.151	2.563
Crosswalk LOS	B	B	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	967	967	767	767
d_b, Bicycle Delay [s]	8.01	8.01	11.41	11.41
I_b,int, Bicycle LOS Score for Intersection	2.271	2.050	2.371	2.311
Bicycle LOS	B	B	B	B

Sequence

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



Appendix C

Land Use Assumption Calculations

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Valley Ranch 4 Commercial Development
City of Williams
Development Potential

Lot Number	Acres	Projected Development Area per Acre	Commercial Development Square Footage Outcome	Use Type	Comments	Traffic Impact Fees
1	1.582	10,000.00	15,820.00	General Retail		$ 104,095.60
2	1.336	10,000.00	13,360.00	General Retail		$ 87,908.80
3	1.625	8,000.00	13,000.00	General Retail	odd shaped lot	$ 85,540.00
4	0.954	3,500.00	3,339.00	Specialty Retail (fast food)		$ 21,970.62
5	0.929	3,500.00	3,251.50	Specialty Retail (fast food)	corner lot	$ 21,394.87
6	1.004	3,500.00	3,514.00	Specialty Retail (fast food)	corner lot	$ 23,122.12
7	0.905	3,500.00	3,167.50	Specialty Retail (fast food)		$ 20,842.15
8	1.304	10,000.00	13,040.00	General Retail		$ 85,803.20
9	1.446	12,000.00	17,352.00	Office		$ 105,500.16
10	1.411	12,000.00	16,932.00	Office		$ 102,946.56
11	1.335	10,000.00	13,350.00	General Retail		$ 87,843.00
12	3.112	17,000.00	52,904.00	Hotel/Motel	access and utility easements	$ 321,656.32
Total:	**16.943**		**169,030.00**			$ 1,068,623.40