July 23, 2024

Ms. Heather Gurewitz
M-Group
1275 4th St., #265
Santa Rosa, CA 95401

Transportation Impact Study for the Cotati Village 2 Project

Dear Ms. Gurewitz;

As requested, W-Trans has prepared an analysis of the potential transportation impacts and adverse traffic operational effects that would be associated with development of 126 proposed multifamily housing units, thirteen of which would be designated as affordable, as well as a 2,250 square foot cafe to be located on the west side of Alder Avenue north of SR-116 in the City of Cotati. The traffic study was completed in accordance with the criteria established by the City and is consistent with standard traffic engineering techniques.

Existing Conditions

The study area consists of Alder Avenue, which runs along the frontage of the project site as well as the intersections of SR-116/Alder Avenue and SR-116/W. Cotati Avenue. Alder Avenue runs north-south and is classified as a local street. Along the project frontage, the road has two travel lanes, of which the northbound lane is 13 feet wide and the southbound lane is 10 feet wide with a painted Class II bike lane for 170 feet north of the intersection with SR-116. Traffic counts obtained on Alder Avenue on Tuesday, May 7, 2024, indicate that the roadway is carrying approximately 900 vehicles per day.

Project Description

The project as proposed includes two parcels. The northern portion of the site is currently vacant and would be developed with 126 residential units, including thirteen affordable units, as well as a café. The southern portion of the site currently includes a cannabis dispensary and a pizza restaurant, which will remain. The project site is located in the CG (Commercial, Gravenstein Corridor) Zoning District. The zoning code allows for a density of 15 units per acre, which would allow for 84 units; but by providing 15 percent of the required residential units (13 units) to very low-income households, the project is eligible under the State Density Bonus Law for a density bonus of 50 percent.

Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is October 1, 2018, through September 30, 2023.

As presented in Table 1, the calculated collision rates for the existing study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2021 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, two-way stop, or traffic signal). The study intersections have collision rates below or nominally above the statewide average, indicating that there are no apparent operational safety concerns. The collision rate calculations are enclosed.

Table 1 – Collision Rates for the Study Intersections			
Study Intersection	**Number of Collisions (2018-2023)**	**Calculated Collision Rate (c/mve)**	**Statewide Average Collision Rate (c/mve)**
1. SR-116/Alder Ave	5	0.15	0.13
2. SR-116/W Cotati Ave	1	0.03	0.13

Note: c/mve = collisions per million vehicles entering

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 11th Edition, 2021, for Multifamily Housing (Mid-Rise) Not Close to Transit (LU #221), and Coffee/Donut Shop without Drive-Through Window (LU #936) as these descriptions most closely match the proposed project. Since no daily trip rate was available for LU #936, the rate for a Coffee/Donut Shop with Drive-Through Window (LU #937) was applied to estimate the number of daily trips as this was the most similar use available and the number of peak hour trips is similar.

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. Internal trips occur at mixed-use developments, and in the case of the proposed project, would consist of new and existing nearby residents patronizing the adjacent cafe. The majority of these trips would be made by walking, and the few that would be made by automobile would not affect the study intersection. Copies of the spreadsheets indicating the derivation of the internal capture rates are enclosed along with the projected trip generation of the proposed project.

Diverted Link Trips

A substantial portion of the traffic associated with the café component of the project would be drawn from existing traffic on nearby streets. These vehicle trips are considered "non-primary" as the drivers who are already driving by the site or on the nearby streets to arrive at their "primary" destinations choose to make an interim stop at the proposed cafe. These "non-primary" trips are referred to as "pass-by" if they originated on a street adjacent to the project site, and "diverted link" if the trip originated on a roadway near the project site but require routing through additional streets to access the site. Since rates are not available for diverted link trips, rates for pass-by trips from the *Trip Generation Manual* are typically used to estimate the number of diverted link trips. The pass-by rates for drive-through coffee shop in the a.m. and p.m. peak periods are 90 percent and 98 percent, respectively; no rate is available for a coffee shop without a drive-through window. Since westbound traffic would be able to access the site more easily and a coffee shop is present off the south side of SR-116 near the Redwood Drive intersection, these rates were reduced to 45 percent during the a.m. peak and 49 percent during the p.m. peak.

Total Project Trip Generation

Based on application of these rates and taking into account internal capture and diverted link trips, the proposed project is expected to generate an average of 1,180 net new trips per day, including 157 a.m. peak hour trips and 82 trips during the p.m. peak hour. These results are summarized in Table 2.

Table 2 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Proposed											
Coffee/Donut Shop	2.250 ksf	533.57*	1,201	93.08	209	107	102	32.29	73	36	37
Internal Capture			-34		-3	-2	-1		-3	-1	-2
Subtotal			1,167		206	105	101		70	35	35
Diverted Link			-525**	-45%	-93	-47	-46	-49%	-34	-17	-17
Total			642		113	58	55		36	18	18
Multifamily Residential	126 du	4.54	572	0.37	47	11	36	0.39	49	30	19
Internal Capture			-34**	-6%	-3	-1	-2	-6%	-3	-2	-1
Total Project Trip Generation			**1,180**		**157**	**68**	**89**		**82**	**46**	**36**

Note: du = dwelling unit; ksf = 1,000 square feet; * Rate is for Coffee/Donut Shop with Drive-Through Window; ** Daily internal trips and diverted link estimated using the average percentages for the a.m. and p.m. peak hours

Trip Distribution

The pattern used to allocate new project trips to the street network was determined based on a review of existing turning movements at the study intersections, observations of neighborhood travel circulation, and knowledge of traffic patterns in the area and surrounding region. Data previously collected at the existing housing on Alder Avenue indicates that residents will travel out of their way to use Helman Lane and Redwood Drive to access eastbound Gravenstein Highway via the signalized intersection, though given the proximity of this site to Gravenstein Highway, a smaller portion of trips were assumed to take this longer route. This route was applied to an additional 20 percent of outbound trips only as trips inbound from Gravenstein Highway east of the site could simply be made by turning right at Alder Avenue. The applied distribution assumptions and resulting trips are shown in Table 3.

Table 3 – Trip Distribution Summary

Route	Percent In/Out	Daily Trips	AM Trips		PM Trips	
			In	Out	In	Out
Alder Ave/Helman Ln	30/50%	472	20	45	14	18
Gravenstein Hwy (West of Alder Ave)	25%	295	17	22	12	9
Gravenstein Hwy (East of Alder Ave)	45/25%	413	31	22	21	9
TOTAL	**100%**	**1,180**	**68**	**89**	**46**	**36**

For the purposes of the operational analysis, it was additionally assumed that for the diverted trips to and from the cafe, 80 percent would be traveling westbound on Gravenstein Highway and would make a right-turn in and out at Alder Avenue. The remaining 20 percent would be traveling eastbound on Gravenstein Highway and would make left turns in and out at Alder Avenue.

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. In general, access for pedestrians is limited within the

vicinity of the proposed project site due to large gaps in the sidewalk system. These existing gaps and obstacles along the connecting roadways impact convenient and continuous access for pedestrians and present safety concerns in those locations where appropriate pedestrian infrastructure would address potential conflict points.

- **Alder Avenue** – Sidewalk coverage is currently provided along the west side of Alder Avenue for approximately 150 feet north of SR-116 and on the east side of Alder Avenue from SR-116 to the City limits north of Ford Lane; pedestrian-scale lights are provided. No sidewalk coverage or lighting is provided between Helman Lane and the Cottages, the small residential complex across from the project site. In general, Alder Avenue is a rural street that provides access to the Cottages. Rural streets typically contain minimal sidewalk coverage and lighting.
- **SR-116** – There are no existing sidewalks along the project frontage. Sidewalk coverage is provided on both sides of SR-116 east of Redwood Drive and on the properties adjacent to the Redwood Drive intersection. West of Redwood Drive, including along the project frontage, pedestrian access is available along the roadway shoulders. Lighting is provided by overhead streetlights, which are more prevalent east of Redwood Drive.

Crosswalks are proposed at SR-116/West Cotati Avenue as part of the West Cotati Realignment project. Additionally, the Cotati Active Transportation Plan, 2024, proposes new sidewalks to eliminate the gaps on West Cotati Avenue between SR-116 and Cotati Oaks Court.

As part of the project, a Class I multi-use path is proposed along the project frontage on SR-116 as well as on the west side of the project site. Additionally, a sidewalk would be built along the Alder Avenue frontage on the east side of the project site. These facilities along the project frontage would improve pedestrian access to and from the site.

Pedestrian Safety

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue for pedestrians in the vicinity of the project site. For the same five-year study period used for the vehicle collision analysis of October 1, 2018, through September 30, 2023, there were no reported collisions involving pedestrians at the study intersections indicating that there are no readily apparent existing safety issues for pedestrians.

Project Impacts on Pedestrian Facilities

Given the proximity of commercial and residential destinations near the site, it is reasonable to assume that some project patrons and employees would want to walk, bicycle, and/or use transit to reach the project site. Upon construction of the Class I paths, sidewalks, and crosswalks along the project frontages on SR-116 and along the internal project streets, the project site would be connected to the pedestrian facilities that currently exist near the site. A network of sidewalks and crosswalks would be provided throughout the project site, resulting in connected on-site pedestrian circulation. The project includes a Class I multi-use path along the SR-116 frontage to provide pedestrian and bicycle access. With the completion of a Class I path along the frontage of the approved Cotati Village 1 project on the east side of Alder Avenue and the anticipated requirement for a similar facility along the proposed Redwood Row project to the east of Cotati Village 1, the project would be connected to the larger pedestrian network.

Finding – Upon constructing the Class I path along the project frontage on SR-116 and the west side of the project frontage, as well as sidewalks along the east side of the project frontage, the project site would be connected to the existing pedestrian network and circulation for pedestrians in the area would be improved, though still inadequate. Planned future improvements to be constructed as part of other developments or by the City would provide adequate pedestrian facilities.

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.

The *Cotati Active Transportation Plan* also includes Class IIIB Bicycle Boulevards, which include traffic calming measures on low-volume, low-speed, local streets.

In the project area, a Class I path exists on Commerce Boulevard between the Laguna de Santa Rosa Trail and Enterprise Drive in the City of Rohnert Park, and the Laguna de Santa Rosa Trail extends from Commerce Boulevard to East Cotati Avenue. A Class II bike lane is planned on Madrone Place next to Thomas Page Academy. Class II bike lanes exist on SR-116, Old Redwood Highway, Redwood Drive, Commerce Boulevard, and for a short (less than 100 feet) segment of Alder Avenue north of SR-116, and are planned on Richardson Lane and West Cotati Avenue. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area. Table 4 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *Cotati Active Transportation Plan*.

Table 4 – Bicycle Facility Summary				
Status *Facility*	**Class**	**Length (miles)**	**Begin Point**	**End Point**
Existing				
Alder Ave	II	0.02	North of SR-116	SR-116
Commerce Blvd	II	0.10	Old Redwood Hwy	Cotati City Limits
Redwood Dr	II	0.60	Cotati City Limits	SR-116
Old Redwood Hwy	II	0.50	US 101	E Cotati Ave
SR-116	II	0.25	Redwood Dr	Old Redwood Hwy
West Cotati Ave	III	0.34	SR-116	W Cotati Oaks Ct
Gilman Ranch Rd	III	0.16	W Cotati Ave	End
Planned				
Tompkins Rd Trail	I	0.06	Richardson Ln	Gilman Ranch Dr
SR-116	I	0.80	Redwood Dr	Cotati City limits
New North-South Street	II	0.15	SR-116	Cotati City limits
School St	II	0.74	Richardson Ln	W Sierra Ave
Derby Ln	IIIB	0.28	SR 116	Cotati City limits
Gilman Ranch Rd	IIIB	0.16	W Cotati Ave	End
West Cotati Ave	IIIB	0.43	SR-116	Maple Ave

Source: Cotati Active Transportation Plan, 2024

Bicyclist Safety

Collision records for the study area were reviewed to determine if any bicyclist-involved crashes were reported. During the five-year study period between October 1, 2018, and September 30, 2023, there were no reported

collisions involving bicyclists at any of the study intersections indicating that there are no readily apparent safety issues for cyclists.

Project Impacts on Bicycle Facilities

The project includes a Class I facility to be constructed along the SR-116 frontage and on the west side of the project site to provide access for pedestrians and bicyclists and connect to future facilities along adjacent properties. These facilities, along with planned facilities and existing bicycle lanes and minor streets in the vicinity of the project site would provide adequate access for bicyclists.

Finding – Facilities to be constructed as part of the project, in addition to existing bicycle facilities, including bicycle lanes on SR-116, and shared use of minor streets provide adequate access for bicyclists.

Transit Facilities

Sonoma County Transit (SCT) provides fixed route bus service in the City of Cotati. SCT Local Routes 12 and 14 provide loop service to destinations throughout Cotati and Rohnert Park and stop on Houser Street and Redwood Drive. Route 26 runs between Mirabel Park to the west and Sonoma State University to the east and stops on Highway 116 at Alder Avenue.

Golden Gate Transit provides a regional bus service along the US 101 corridor between Santa Rosa and San Francisco with a stop at Old Redwood Highway/St Joseph Way, approximately one-half mile from the project site.

Existing transit routes and their operation are summarized in Table 5.

Table 5 – Transit Routes					
Transit Agency Route	Distance to Stop (mi)[1]	Service			Connection
		Days of Operation	Time	Frequency	
Sonoma County Transit					
Route 12	0.9	Mon – Fri Sat	6:25 a.m. – 6:10 p.m. 9:10 a.m. – 4:20 p.m.	0.75 – 1.75 hours 1.75 hours	Houser St/Redwood Dr to Northern Rohnert Park
Route 14	0.9	Mon – Sat	7:45 a.m.	Once a day	Houser St/Redwood Dr to Northern Rohnert Park
Route 26 EB	0.0	Mon – Fri (School Days)	8:04 a.m.	Once a day	Hwy-116/Alder Ave to Sonoma State University
Route 26 WB	0.0	Mon – Fri (School Days)	3:53 p.m.	Once a day	Hwy-116/Alder Ave to Mirabel Park
Golden Gate Transit					
Route 101 NB	0.6	Mon – Sun	8:00 a.m. – 1:00 a.m.	1 – 1.25 hours	Old Redwood Hwy/St Joseph Wy to Santa Rosa
Route 101 SB	0.6	Mon – Sun	4:00 a.m. – 10:00 p.m.	1 – 1.25 hours	Old Redwood Hwy/ St Joseph Wy to SF

Note: [1] Defined as the shortest walking distance between the project site and the nearest bus stop; SF = San Francisco
Source: www.sctransit.com, www.goldengate.org

Two or three bicycles can be carried on the front of all SCT buses. Bike rack space is on a first come, first served basis. Riders are responsible for loading and unloading their bicycles.

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. SCT Paratransit is designed to serve the needs of individuals with disabilities within three quarters of a mile of their fixed-route transit services within Cotati and Sonoma County.

Project Impact on Transit Facilities

The proposed project would be expected to create demand on the nearby transit routes. Existing stops served by SCT Route 26 are within an acceptable walking distance of the site, but there is no existing crosswalk or any pedestrian facilities for residents who wish to walk to the eastbound Route 26 stop, located directly south of the proposed project site.

Finding – Existing transit facilities serving the project site are not adequate due to the lack of pedestrian facilities available to reach the transit stops.

Recommendation – The City may wish to work with Sonoma County Transit to determine the preferred bus stop locations for Route 26 in the vicinity of Alder Avenue, given that Cotati Village 2 is proposed in addition to the adjacent Cotati Village 1 and Redwood Row projects. If the SR-116/Alder Avenue intersection is to be signalized, a crosswalk could be added at this location and the existing bus stops upgraded to meet ADA requirements. If it is determined that the bus stop should be relocated to the SR 116/West Cotati Avenue intersection, improvements at the existing stop locations would be unnecessary, as new ADA-compliant bus stops would be recommended to replace them.

Vehicle Miles Traveled (VMT)

The potential for the project to conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b) was evaluated based the project's anticipated Vehicle Miles Traveled (VMT). Senate Bill (SB) 743 established the change in Vehicle Miles Traveled (VMT) as a result of a project as the basis for determining California Environmental Quality Act (CEQA) impacts with respect to transportation and traffic.

The project-related VMT was assessed by applying the City of Cotati's *Guidelines for Analysis of Vehicle Miles Traveled (VMT)*, adopted in September 2020. The California Governor's Office of Planning and Research (OPR) publication *Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory*, 2018, was also referenced. Per the City's policy, VMT for mixed use projects was assessed by applying the significance threshold for each use.

Residential VMT

For residential projects, VMT is assessed using vehicle miles traveled per capita as estimated in the Sonoma County Transportation Authority (SCTA) travel demand model. VMT per capita measures home-based trips, or trips that have the place of residence as one of the trip ends. Based on data from the February 2022 update of the SCTA model, the City of Cotati has a baseline average residential VMT of 18.3 miles per capita. Applying the City guidelines, a residential project generating a VMT that is 15 percent or more below this value, or 15.5 miles per capita or less, would have a less-than-significant VMT impact. The SCTA model includes traffic analysis zones (TAZ) covering geographic areas throughout Sonoma County, and the Cotati Village project site is located within TAZ 425, which has a baseline VMT per capita of 20.2 miles. For the project to achieve the applied VMT significance threshold of 15.5 miles per capita, its VMT would need to be 23.2 percent lower than the average for the project TAZ.

The VMT associated with a development project is influenced by factors including density and the provision of onsite affordable housing. The publication *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*, California Air Pollution Control Officers Association (CAPCOA), 2021, includes a methodology to determine the VMT reductions associated with increases in residential density, using conventional single-family home development as a baseline. The reduction associated with project

density was estimated using the same approach recommended by City staff for the Cotati Village 1 project. The density was calculated based on the developable land rather than total acreage for both the Cotati Village 2 site and the nearby 46-unit Cotati Cottages project, which makes up approximately 90 percent of the existing residential development in the TAZ. Portions of both developments used for internal streets were excluded from the analysis, as was the already-developed portion of the Cotati Village 2 site. To provide a conservative VMT analysis for Cotati Village 2, the acreage included the area occupied by the residential buildings as well as the commercial buildings and the common space with the pool and clubhouse; since the total assumed acreage of the site would therefore be higher for the same number of residential units, this in effect reduces the estimated density of the project. Diagrams of the areas included in the density calculations are enclosed. The area of the surface parking was also included in the estimate of developable land for both projects.

Since Cotati Cottages makes up such a large portion of the existing residential development for the project TAZ, its density was used as a proxy for the density of the entire zone. According to the SCTA travel demand model, there are eight other residential units in the TAZ, all of which are on parcels larger than one acre. To provide a conservative estimate of the residential density, these low-density parcels were excluded from this analysis. Applying these assumptions, the density of Cotati Village 2 is 46.3 units per developed acre, while the density of the TAZ is 21.4 units per developed acre. As calculated using the SCTA VMT tool, the proposed density for Cotati Village would allow for a VMT reduction of 25.6 percent.

The SCTA VMT tool also provides for VMT reductions based on the inclusion of affordable units as part of residential projects, as affordable units have been found to produce lower levels of VMT. Cotati Village 2 would designate 10 percent of its total units as affordable, which reduces VMT by 2.9 percent based on the SCTA VMT tool.

Applying the calculated densities of the Cotati Village project and the TAZ to the SCTA VMT tool and factoring in the affordable housing component of the project, the project's estimated VMT can be reduced by 27.7 percent (this is less than the sum of the density and affordable housing reductions because the SCTA VMT tool applies a dampening factor to avoid double counting). This is greater than the 23.2 percent reduction needed to achieve a less-than-significant impact for the project. Therefore, applying the modified methodology for evaluating VMT, it was determined that the VMT impact for Cotati Village would be less than significant.

Table 6 – Vehicle Miles Traveled Analysis Summary – Residential Component				
VMT Metric	**Baseline VMT Rate**	**Significance Threshold**	**Project VMT Rate**	**Resulting Significance**
Residential VMT per Capita (Citywide Baseline)	18.3	15.5	14.6	Less than Significant

Note: VMT Rate is measured in VMT/Capita, or the number of daily miles driven per resident

Retail VMT

The City VMT guidelines state that a retail project is considered to have a significant VMT impact if it would result in a net increase in regional total VMT. The policy notes that local-serving retail up to 10,000 square feet would be screened from VMT analysis. The OPR guidance recommends screening local-serving retail from VMT analysis since they introduce a greater mix of services into the urban fabric, resulting in improved proximity of retail to many residents and thereby resulting in shorter trips and a reduction in total VMT. By contrast, regional-serving retail uses would tend to draw customers from longer distances, thereby increasing VMT.

The project as proposed would include a 2,250 square foot café. Given the size of this use and the location of the site, it is expected that the café would be local-serving, as it would primarily cater to residents of the project and other existing and future residents within walking distance of the site as well as drivers traveling along SR-116. Since the proposed retail uses would be local serving, it is assumed that they would not result in an increase in total VMT and could therefore be screened from a more detailed VMT analysis.

Finding – The project's VMT impact for both the residential and retail portions of the project would be expected to be less than significant.

Safety Issues

Site Access

The project site would be accessed via two driveways on Alder Avenue. The southern driveway would be the west leg of the future Batchelor Lane intersection, located approximately 250 feet north of SR-116, while the northern driveway would be an additional west leg of the Alder Avenue/Ford Lane intersection, located approximately 530 feet north of SR-116

Sight Distance

Sight distances along Alder Avenue at the project access points 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 more sight distance needed for making a left turn versus a right turn, while recommended sight distances for minor street approaches that are either a private road or a driveway are based on stopping sight distance. Both use the approach travel speeds as the basis for determining the recommended sight distance.

Alder Avenue has a speed limit of 35 mph, which corresponds to a minimum corner sight distance of 390 feet for left turns and 335 feet for right turns. Sight distances were evaluated at the new proposed access points on Alder Avenue. The proposed southern access point has measured sight distances of about 385 feet to the north and 350 feet to the south. The sight distance to the south is inadequate for the posted speed limit. Using traffic speeds measured at the proposed entrance the road was determined to have an 85th percentile speed of 29 mph in both directions. Rounding this speed up to 30 mph to present a conservative analysis the entrance would need a sight distance of 290 feet to the north and 330 feet to the south for a driver to complete a left turn. This driveway would therefore have adequate sight distances.

Sight lines at the northern driveway were measured at about 335 feet to the north and over 445 feet to the south, both of which are adequate for the posted speed limit.

Sight lines should be kept free of signs, structures, and tall landscaping, and any new trees associated with the project should be carefully located to avoid placement within sight triangles. Landscaping planted in the vision triangle should be low-lying or above seven feet and maintained to remain outside the area needed for adequate sight lines.

Finding – Sight lines are adequate at both proposed entrances based on the prevailing speed and/or posted speed limit.

Recommendation – Adequate sight lines should be maintained during the design and construction of project access points, and the placement of any signs, structures, or tall landscaping on Alder Avenue or SR-116 that would impede sight lines should be avoided.

Access Analysis

Left-Turn Lane Warrants

The need for a left-turn lane from eastbound SR-116 onto Alder Avenue was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as an update of the methodology developed by the Washington State Department of Transportation and published in the *Method for Prioritizing Intersection Improvements*, January 1997. The NCHRP report references a methodology developed by M. D. Harmelink that

includes equations that can be applied to expected or actual traffic volumes to determine the need for a left-turn pocket based on safety issues.

An eastbound left-turn lane is warranted and required for the approved Cotati Village 1 project as a condition of occupancy if the SR-116/West Cotati Avenue intersection realignment and signalization is not completed. As Cotati Village 2 would be further increasing the number of trips to the network, there would be an even greater need for the left-turn lane. If Cotati Village 2 were to be constructed before Cotati Village 1 or if Cotati Village 1 is not constructed until after the SR-116/West Cotati Avenue intersection is realigned and signalized, this project should be required to provide the eastbound left-turn lane.

Left-turn Lane Design Requirements

The projected maximum left-turn queue lengths were determined using a methodology contained in "Estimating Maximum Queue Length at Unsignalized Intersections," John T. Gard, *ITE Journal*, November 2001. Using Baseline plus Project volumes, the maximum eastbound left-turn queue on SR-116 at Alder Avenue would be no more than two vehicles, so it is recommended that the storage be based on two passenger cars, or 50 feet. Copies of the queue length calculations are enclosed.

Finding – An eastbound left-turn lane at the intersection of SR-116/Alder Avenue was determined to be warranted for the approved Cotati Village 1 project and is required as a condition of approval. If the Cotati Village 1 project does not provide the left-turn lane before this project is constructed, this project should be required to provide the eastbound left-turn lane.

Recommendation – If the approved Cotati Village 1 project does not provide the eastbound left-turn lane on SR-116, Cotati Village 2 should be required to construct a pocket with a minimum of 50 feet of storage. The planned widening of SR-116 would provide the storage needed for the left-turn lane as well as additional through lanes and could be completed either as part of the project or through the project's Transportation Impact Fee (TIF) contribution; it is a matter of City policy to determine how this improvement is to be funded.

Emergency Access

Adequacy of Site Access

Access to the project site for emergency response vehicles would be facilitated via two driveways on Alder Avenue. According to the site plan, the southern and northern driveways would be designed to a width of 20 feet and 26 feet, respectively, which meets Municipal Code standards. It is anticipated that all aspects of the site, including driveway and street widths, turning radii, and parking lot circulation, would be constructed in accordance with applicable standards and would be reviewed by the Fire Department; therefore, access would be expected to function acceptably for emergency response vehicles.

Off-Site Impacts

While the project would be expected to result in a minor increase in delay for traffic on SR-116 and Alder Avenue, emergency response vehicles can claim the right-of-way by using their lights and sirens; therefore, the project would be expected to have a nominal effect on emergency response times. The availability of two access points is also a benefit for emergency access since a different driveway could be used to gain access to the site should one of the driveways be compromised in an emergency.

Finding – Emergency access and circulation are anticipated to function acceptably, and traffic from the project is expected to have a less-than-significant impact on emergency response times.

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 study intersections, which currently have side street stop controls, 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 intersections that are to be controlled by a traffic signal in the future were evaluated using the signalized methodology from the HCM. 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 7.

Table 7 – Intersection Level of Service Criteria		
LOS	**Two-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. 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 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 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 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 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 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual,* Transportation Research Board, 2018

Traffic Operation Standards

According to the *Cotati General Plan, Policy C1 1.3*, the minimum acceptable Level of Service (LOS) standard for intersections is LOS D. At unsignalized intersections, levels of service shall be determined for both controlled movements and for the intersection overall. A significant traffic-related impact would occur if implementation of the project would cause an intersection to operate below the General Plan's standard of LOS D, or LOS E for intersections within the boundaries of the Downtown Specific Plan.

At unsignalized intersections, controlled movements operating at LOS E or LOS F are allowable if 1) the intersection is projected to operate at LOS C or better overall, and 2) the projected traffic volume on the controlled movement is 30 vehicles or fewer per hour on approaches with single lanes, or on multi-lane approaches, 30 vehicles or fewer per hour on lanes serving left turns and through movements.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the a.m. and p.m. peak hours. This condition does not include project-generated traffic volumes. Volume data was collected while local schools were in session. Under Existing Conditions, both study intersections operate at LOS A overall and at LOS C on the minor street approaches, which is considered acceptable. A summary of the intersection Level of Service calculations is contained in Table 8, and copies of the calculations are enclosed.

Table 8 – Existing Peak Hour Intersection Levels of Service				
Study Intersection	AM Peak		PM Peak	
Approach	Delay	LOS	Delay	LOS
1. SR-116/Alder Ave	0.7	A	0.8	A
Southbound (Alder Ave) Approach	*19.5*	*C*	*22.2*	*C*
2. SR-116/W Cotati Ave	0.5	A	0.9	A
Northbound (W Cotati Ave) Approach	*18.1*	*C*	*17.7*	*C*

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

Baseline Conditions

Baseline (Existing plus Approved) operating conditions were determined with traffic from approved or pending projects in the study area that could be operational within the next five years added to the existing volumes. It is noted that the City has required as a condition of occupancy for the Cotati Village 1 project that an eastbound left-turn lane would be provided at the SR-116/Alder Avenue intersection if the SR-116/W. Cotati Avenue intersection realignment and signalization is not complete. In addition, Cotati Village 1 was required to install separate left-turn and right-turn lanes on the southbound Alder Avenue approach. For purposes of this analysis, it was assumed that the SR-116/W. Cotati Avenue intersection realignment and signalization would not be complete prior to occupancy of Cotati Village 1 so the eastbound left-turn lane at the Alder Avenue intersection will have been constructed as part of that project.

As directed by City staff, the following projects were included in the Baseline Conditions scenario:

- Cotati Hotel, 153 rooms, to be located at the northwest corner of Old Redwood Highway/Saint Joseph Way;
- Cotati Village 1, 177 residential units and 4,700 square feet of retail spaces to be located at the northeast corner of SR 116 and Alder Avenue;
- Redwood Row, 157 multifamily units and 10,500 square feet of retail, located on SR-116 on the property to the east of Cotati Village;
- Market Hall, 5,650 square feet, to be located at the northwest corner of Old Redwood Highway/Saint Joseph Way;

- The trip generation rates and trip distribution patterns applied in the traffic studies prepared by W-Trans and TJKM for the projects were used for the Baseline scenario; it is noted that some of the rates differ slightly from those in the 11th Edition of *Trip Generation Manual* as some reports were written before this edition was published. The trip generation potential of the approved projects is summarized in Table 9.

Table 9 – Trip Generation for Approved Projects											
Land Use	**Units**	**Daily**		**AM Peak Hour**				**PM Peak Hour**			
Deduction		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Strip Retail Plaza	4.7 ksf	54.45	256	2.36	11	7	4	6.59	31	16	15
Pass-By		-20%	-51	-40%	-7	-4	-3	-40%	-19	-10	-9
MF Housing (Low-Rise)	177 du	6.74	1,193	0.40	71	17	54	0.51	90	57	33
Retail	10.5 ksf	54.45	572	2.36	25	15	10	6.59	69	35	34
MF Housing (Low-Rise)	157 du	6.74	1,058	0.40	63	15	48	0.51	80	50	30
Hotel	153 rm	8.36	1,279	0.47	72	42	30	0.60	92	47	45
Market Hall	3.596 ksf	106.78	384	3.82	14	8	6	9.48	33	17	16
Internal Trips***		-15%	-58	-15%	-2	-1	-1	-15%	-5	-3	-2
Pass-By Trips		-36%	-138	-36%	-5	-3	-2	-36%	-12	-6	-6
Total			**4,495**		**242**	**96**	**146**		**359**	**203**	**156**

Note: du = dwelling units; ksf = 1,000 square feet; rm = rooms; MF = Multifamily; * Internal capture for retail use is the opposite end of trips estimated for the residential use; ** Daily internal trips estimated using the average percentages of a.m. and p.m. peak hour internal trips; *** Internal trip reduction applied to market hall trips as in TJKM traffic study.

Under Baseline conditions, the minor approaches to SR-116/Alder Avenue and SR-116/West Cotati Avenue are expected to operate acceptably at LOS D during the a.m. and p.m. peak periods. These results are summarized in Table 10.

Table 10 – Baseline Peak Hour Intersection Levels of Service				
Study Intersection	**AM Peak**		**PM Peak**	
Approach	Delay	LOS	Delay	LOS
1. SR-116/Alder Ave	1.3	A	1.3	A
Southbound (Alder Ave) Approach	*28.2*	*D*	*25.8*	*D*
2. SR-116/W Cotati Ave	0.5	A	0.9	A
Northbound (W Cotati Ave) Approach	*18.9*	*C*	*18.8*	*C*

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

Alternative Baseline Scenario

As noted, for the Baseline analysis it was assumed that Cotati Village 1 would be completed prior to Cotati Village 2, but that the realignment and signalization of the SR-116/West Cotati Avenue intersection would not. An Alternative Baseline scenario was analyzed, with the following assumptions: 1) the realignment and signalization of the SR 116/West Cotati Avenue intersection would be complete; 2) as part of the SR-116/West Cotati Avenue intersection project, a median would be installed along SR-116 to limit access to and from Alder Avenueto right-turn in/right-turn out; and 3) vehicles seeking to turn left from eastbound SR-116 onto Alder Lane or turn left onto

SR-116 from Alder Lane would be routed through the SR-116/West Cotati Avenue intersection and Batchelor Lane. Batchelor Lane is proposed as an internal street within Cotati Village 1 that would connect the north leg of the SR-116/West Cotati Avenue intersection to Alder Avenue. The same trip distribution assumptions made for the original Baseline scenario were made for this scenario except that routing in the immediate vicinity of the project site was modified to reflect the turn restrictions at SR-116/Alder Lane.

Under these assumptions, the minor approaches to SR-116/Alder Avenue and overall operation at SR-116/West Cotati Avenue are expected to operate acceptably at LOS B or better during the a.m. and p.m. peak periods. These results are summarized in Table 11.

Table 11 –Alternative Baseline Peak Hour Intersection Levels of Service				
Study Intersection *Approach*	**AM Peak**		**PM Peak**	
	Delay	LOS	Delay	LOS
1. SR-116/Alder Ave	0.5	A	0.4	A
Southbound (Alder Ave) Approach	*9.5*	*A*	*13.5*	*B*
2. SR-116/W Cotati Ave	14.8	B	18.6	B

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

It is noted that construction of Cotati Village 2 could potentially precede that of Cotati Village 1. If that is the case, even if the realignment and signalization of SR-116/West Cotati Avenue is completed, project traffic would not have access to the new signal and SR-116/Alder Avenue would continue to operate in its existing configuration. If that were the case, the eastbound left-turn lane should be provided as part of the Cotati Village 2 project. This scenario is included in this discussion to acknowledge uncertainty in the development process and availability of funding for the SR-116/West Cotati Avenue intersection improvements. Analysis of the effect of this scenario on traffic operations was beyond the scope of this study.

Future Conditions

Future volumes for the horizon year 2040, as developed for the traffic analysis that was prepared for the *Cotati General Plan March 2015 Update*, were used to project future operating conditions at the study intersections. Under Future Conditions, the General Plan indicates that the intersection of SR-116/Alder Avenue will be eliminated, while a new North-South Street would be constructed approximately 500 feet west of Alder Avenue; the SR-116/New North-South Street intersection would be signalized. This new signalized intersection would include four legs with dedicated turn lanes on each leg, as described in the *Traffic Impact Fee Study*, W-Trans, 2015, as well as separate right-turn lanes on the new street approaches. The planned future widening of SR-116 would provide two through lanes in each direction between Redwood Drive and Madrone Avenue. The SR-116/West Cotati Avenue intersection would also be realigned and signalized with protected left turns on SR-116 and split phasing on West Cotati Avenue. These future improvements were assumed to have been constructed and are included as part of the Future Conditions analysis.

Under these conditions, the study intersections are expected to operate acceptably at LOS B or C. These results are summarized in Table 12.

Table 12 – Future Peak Hour Intersection Levels of Service				
Study Intersection	**AM Peak**		**PM Peak**	
	Delay	LOS	Delay	LOS
2. SR-116/W Cotati Ave (Signalized)	12.0	B	33.7	C
3. SR-116/New North-South Street (Signalized)	15.5	B	25.1	C

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

Project Conditions

No transportation network changes were assumed for Project Conditions.

Existing plus Project Conditions

Upon the addition of project-related traffic to the existing volumes, the southbound Alder Avenue approach would operate unacceptably at LOS F. These results are summarized in Table 13.

Table 13 – Existing and Existing plus Project Peak Hour Intersection Levels of Service								
Study Intersection	**Existing Conditions**				**Existing plus Project**			
Approach	**AM Peak**		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1. SR-116/Alder Ave	0.7	A	0.8	A	4.3	A	1.7	A
Southbound (Alder Ave) Approach	*19.5*	*C*	*22.2*	*C*	***55.5***	***F***	*27.4*	*D*
With Southbound Left-turn Lane	-	-	-	-	***36.2***	***E***	-	-
Traffic Signal (Overall Operation)	-	-	-	-	14.6	B	-	-
2. SR-116/W Cotati Ave	0.5	A	0.9	A	0.5	A	0.9	A
Northbound (W Cotati Ave) Approach	*18.1*	*C*	*17.7*	*C*	*19.5*	*C*	*18.3*	*C*

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

Finding – The southbound Alder Avenue approach would be expected to operate unacceptably at LOS F upon the addition of project-generated traffic to existing volumes. Acceptable LOS B operation could be achieved by installing a traffic signal. Alternatively, if the planned traffic signal at SR-116/West Cotati Avenue is operational, traffic would be diverted to that location and there would not be a need for the signal at Alder Avenue.

Recommendation – It is recommended that a traffic signal be installed at SR-116/Alder Avenue to maintain acceptable operations. If a signal is installed, it should include pedestrian crossing infrastructure to enable bus stop users to walk between the project site and bus stops; coordination would be required with Sonoma County Transit regarding stop locations.

Baseline plus Project Conditions

With project-related traffic added to Baseline volumes, the minor approach to SR-116 at West Cotati Avenue is expected to operate acceptably at LOS C; the southbound Alder Avenue approach to the intersection at SR-116 is projected to operate unacceptably at LOS F and E during the a.m. and p.m. peak hours, respectively. These results are summarized in Table 14.

Table 14 – Baseline and Baseline plus Project Peak Hour Intersection Levels of Service								
Study Intersection	**Baseline Conditions**				**Baseline plus Project**			
Approach	**AM Peak**		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1. SR-116/Alder Ave	1.3	A	1.3	A	5.0	A	2.2	A
Southbound (Alder Ave) Approach	*28.2*	*D*	*25.8*	*C*	***53.9***	***F***	*30.1*	*D*
Traffic Signal (Overall Operation)	-	-	-	-	16.9	B	11.9	B
2. SR-116/W Cotati Ave	0.5	A	0.9	A	0.5	A	0.9	A
Northbound (W Cotati Ave) Approach	*18.9*	*C*	*18.8*	*C*	*20.3*	*C*	*19.4*	*C*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics,* shaded cells indicate conditions with recommended improvements; **Bold** text = deficient operation

Finding – The study intersection at West Cotati Avenue is expected to continue operating acceptably upon the addition of project-generated traffic to Baseline volumes. Operation on the stop-controlled Alder Avenue approach to SR-116 would deteriorate to LOS F during the a.m. peak hour upon adding project-generated trips, but acceptable LOS B operation could be achieved by installing a traffic signal, as recommended for Existing plus Project conditions and assuming SR-116/West Cotati Avenue is not yet signalized.

Alternative Baseline plus Project Scenario

Under the Alternative Baseline Scenario (for which completion of the SR-116/West Cotati Avenue realignment and signalization is assumed), with the addition of project-generated trips, the minor approaches to SR-116/Alder Avenue and SR-116/West Cotati Avenue are expected to operate acceptably at LOS C or better during both peak periods. These results are summarized in Table 15.

Table 15 – Alternative Baseline and Alternative Baseline plus Project Peak Hour Intersection Levels of Service								
Study Intersection	**Baseline Alt Conditions**				**Baseline Alt plus Project**			
Approach	**AM Peak**		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1. SR-116/Alder Ave	0.5	A	0.4	A	1.0	A	0.6	A
Southbound (Alder Ave) Approach	*9.5*	*A*	*13.5*	*B*	*10.1*	*B*	*14.3*	*B*
2. SR-116/W Cotati Ave	14.8	B	18.6	B	21.6	C	20.4	C

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

Finding – With the addition of project trips to the Alternative Baseline scenario volumes, operation on the stop-controlled Alder Avenue approach to SR-116 and overall operation at SR-116/West Cotati Avenue would continue to be acceptable.

Future plus Project Conditions

Upon the addition of project-generated traffic to the anticipated future volumes and with the planned future signals at both locations, the study intersections are expected to operate acceptably at LOS D or better. The Future plus Project operating conditions are summarized in Table 16.

Table 16 – Future and Future plus Project Peak Hour Intersection Levels of Service								
Study Intersection	**Future Conditions**				**Future plus Project**			
	AM Peak		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
2. SR-116/W Cotati Ave	12.0	B	33.7	C	12.1	B	35.3	D
3. SR-116/New North-South Street	15.5	B	25.1	C	18.8	B	26.2	C

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

Finding – The study intersections are expected to continue operating acceptably with the addition of project-generated traffic to future volumes assuming planned improvements.

Conclusions and Recommendations

- The proposed project is expected to generate an average of 1,180 net new trips per day, including 157 a.m. peak hour trips and 82 trips during the p.m. peak hour

- Pedestrian facilities are currently inadequate but would be improved upon completion of the Class I path along the project frontage on SR-116 and the west side of the project boundary, as well as sidewalks along Alder Avenue. This would connect the project site to the existing pedestrian network so circulation for pedestrians in the area would be improved, though still inadequate. Planned future improvements to be constructed as part of other developments or by the City would provide adequate pedestrian facilities.

- Existing bicycle facilities, including bicycle lanes on SR-116, and shared use of minor streets currently provide adequate access for bicyclists. Additional facilities to be constructed as part of the project would further improve bicycle facilities.

- Existing transit facilities serving the project site are not adequate due to the lack of pedestrian facilities connecting to the transit stops. The City may wish to work with Sonoma County Transit to identify the preferred bus stop locations, given the planned development along this corridor and ensure that adequate pedestrian crossings of SR-116 and sidewalks are provided to enable bus riders to walk to and from the stops.

- The proposed project is expected to have a less-than-significant impact on VMT.

- The project as proposed would have adequate sight distance for drivers to safely turn out of and into the project site. To preserve existing sight lines, any new signage, monuments, or other structures installed as part of the project should be positioned outside of the vision triangles of a driver waiting on the project road approaches. Landscaping planted in the vision triangle should be low-lying or above seven feet and maintained to remain outside the area needed for adequate sight lines.

- An eastbound left-turn lane is warranted at the intersection of SR-116/Alder Avenue and is required as a condition of occupancy for Cotati Village 1 under specific circumstances. If Cotati Village 1 is ultimately not required to provide the left-turn lane, it should be required as part of Cotati Village 2.

- Emergency access and circulation are anticipated to function acceptably, and traffic from the project is expected to have a less-than-significant impact on emergency response times.

- Under Existing, Baseline, and Future Conditions, the study intersections are or are expected to operate acceptably. With the addition of project-generated trips to existing and baseline volumes, the southbound Alder Avenue approach to SR-116 is expected to operate unacceptably at LOS F during the a.m. peak hour. It is recommended that a traffic signal be installed at SR-116/Alder Avenue as part of the proposed project to achieve acceptable operations. It is noted that this recommendation would be rescinded if the realignment

and signalization of SR-116/West Cotati Avenue and construction of Cotati Village 1 preceded occupation of Cotati Village 2.

- Under Alternative Baseline conditions, which include the realignment and signalization of SR-116/West Cotati Avenue and a median installed along SR-116 to limit access to and from Alder Avenue, the stop-controlled Alder Avenue approach to SR-116 and SR-116/West Cotati Avenue would continue operating acceptably without and with the addition of project-generated traffic.

- The intersections of SR-116/West Cotati Avenue and SR-116/New North South Street are expected to operate acceptably under Future plus Project conditions.

- If the SR-116/Alder Avenue intersection is signalized, curbs connecting the planned crosswalk should be constructed to ADA standards. If the intersection remains stop-controlled, relocation of the bus stop to the future SR-116/West Cotati Avenue signalized intersection is recommended.

- If the approved Cotati Village 1 project is not ultimately required to provide the eastbound left-turn lane on SR-116 at Alder Avenue and eastbound SR-116 traffic retains the ability to turn left at this location, the left turn lane should be provided as part of the Cotati Village 2 project. It should have a minimum of 50 feet of storage.

Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,

Valerie Haines, EIT
Assistant Engineer

Barry Bergman, AICP
Senior Planner
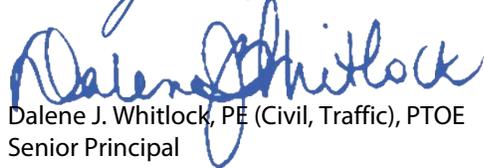
Dalene J. Whitlock, PE (Civil, Traffic), PTOE
Senior Principal

DJW/bdb-vrh/COT102.L1

Enclosures: Collision Rate Calculations, Derivation of Internal Capture Rates, VMT Summary, Queueing Calculations, Level of Service Calculations

Intersection Collision Rate Worksheet

Cotati Village 2 Project

Intersection #   1:   SR 116 & Alder Street
Date of Count: Wednesday, February 23, 2022

Number of Collisions: 5
Number of Injuries: 3
Number of Fatalities: 0
Average Daily Traffic (ADT): 18700
Start Date: October 1, 2018
End Date: September 30, 2023
Number of Years: 5

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

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

$$\text{Collision Rate} = \frac{5 \times 1{,}000{,}000}{18{,}700 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.15 c/mve	0.0%	60.0%
Statewide Average*	0.13 c/mve	1.3%	47.3%

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2021 Collision Data on California State Highways, Caltrans

Intersection #   2:   SR 116 & W Cotati Ave
Date of Count: Wednesday, February 23, 2022

Number of Collisions: 1
Number of Injuries: 1
Number of Fatalities: 0
Average Daily Traffic (ADT): 18700
Start Date: October 1, 2018
End Date: September 30, 2023
Number of Years: 5

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

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

$$\text{Collision Rate} = \frac{1 \times 1{,}000{,}000}{18{,}700 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.03 c/mve	0.0%	100.0%
Statewide Average*	0.13 c/mve	1.3%	47.3%

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2021 Collision Data on California State Highways, Caltrans

NCHRP 684 Internal Trip Capture Estimation Tool

Project Name:	Cotati Village		**Organization:**	W-Trans	
Project Location:	SR 116/Alder Avenue		**Performed By:**	BB	
Scenario Description:			**Date:**	5/14/2024	
Analysis Year:	2024		**Checked By:**		
Analysis Period:	AM Street Peak Hour		**Date:**		

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				0		
Restaurant	936	2	ksf	209	107	102
Cinema/Entertainment				0		
Residential	221	126	du	47	11	36
Hotel				0		
All Other Land Uses[2]				0		
				256	118	138

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	7	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	256	118	138
Internal Capture Percentage	6%	7%	6%
External Vehicle-Trips[5]	240	110	130
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	N/A	N/A
Restaurant	7%	1%
Cinema/Entertainment	N/A	N/A
Residential	9%	19%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool

Project Name:	Cotati Village	**Organization:**	W-Trans	
Project Location:	SR 116/Alder Avenue	**Performed By:**	BB	
Scenario Description:		**Date:**	5/14/2024	
Analysis Year:	2024	**Checked By:**		
Analysis Period:	PM Street Peak Hour	**Date:**		

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	936	2	ksf	73	36	37
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	126	du	49	30	19
Hotel				0		
All Other Land Uses[2]				0		
				122	66	56

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					1000	
Restaurant						
Cinema/Entertainment						
Residential		1000				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	9	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	3	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	122	66	56
Internal Capture Percentage	20%	18%	21%
External Vehicle-Trips[5]	98	54	44
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	8%	24%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	30%	16%
Hotel	N/A	N/A

[1] Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2] Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3] Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4] Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5] Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6] Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Cotati Village 2 VMT Assessment

W-Trans 6/06/2022

OPR Residential VMT Threshold

18.3 VMT/Capita Citywide Average - City of Cotati
15.5 OPR Threshold = 15% below Citywide Average

Base Unadjusted Project VMT

20.23 Base VMT/Capita from SCTA Model - Project in TAZ 425

126 Single Family Units		2.34 Occupancy/Unit		295 Residents	
ADU Units		1.5 Occupancy/Unit		0 Residents	
5965 Base Unadjusted Project VMT (mi)				295 Residents ("capita")	

VMT Adjustments and Potential Mitigation Measures

20.23 Base VMT/Capita from SCTA Model - Project in TAZ 425
15.55 OPR Threshold = 15% below Citywide Average
-23.2% Project VMT Reduction Required to meet OPR Threshold

A. Density Adjustment   *Source: CAPCOA; see journal citation in Appendix C*

126 Project Units including ADU   5.6 Project Acres   46.3 Project Density
-25.6% VMT Reduction (compared to density in project TAZ)   21.4 Density in Project TAZ
-5.18 Adjustment to Base Project VMT/Capita

B. Integrate Affordable Housing   *Source: California Housing Partnership*

126 units, 13 very low income
-2.9% VMT Reduction
-0.58 Adjustment to Base Project VMT/Capita

Combined VMT Adjustments and Mitigation Measures (A and B)
-28.5% Combined Measures VMT Reduction (unadjusted)
-27.7% Adjusted for Dampening of Combined Measures (per CAPCOA)
-5.61 Adjustment to Base Project VMT/Capita

VMT Projections After Adjustments and Mitigation

20.23	Base VMT/Capita from SCTA Model	5965	Unadjusted Base Residential VMT (mi)
-5.61	Adjustment to Base Project VMT/Capita	-1654	VMT Reduction with Adjustments and Mitigation
14.62	Project VMT/Capita with Adjustments & Mitigation	4311	Project VMT (mi) with Adjustments and Mitigation
15.55	OPR Significance Threshold		
YES	Is threshold met with adjustments and mitigation?		

Maximum Queue Length
Two-Way Stop-Controlled Intersections

Through Street: SR 116

Side Street: Alder Avenue

Scenario: Baseline plus Project AM

Stop Controlled Legs: North/South
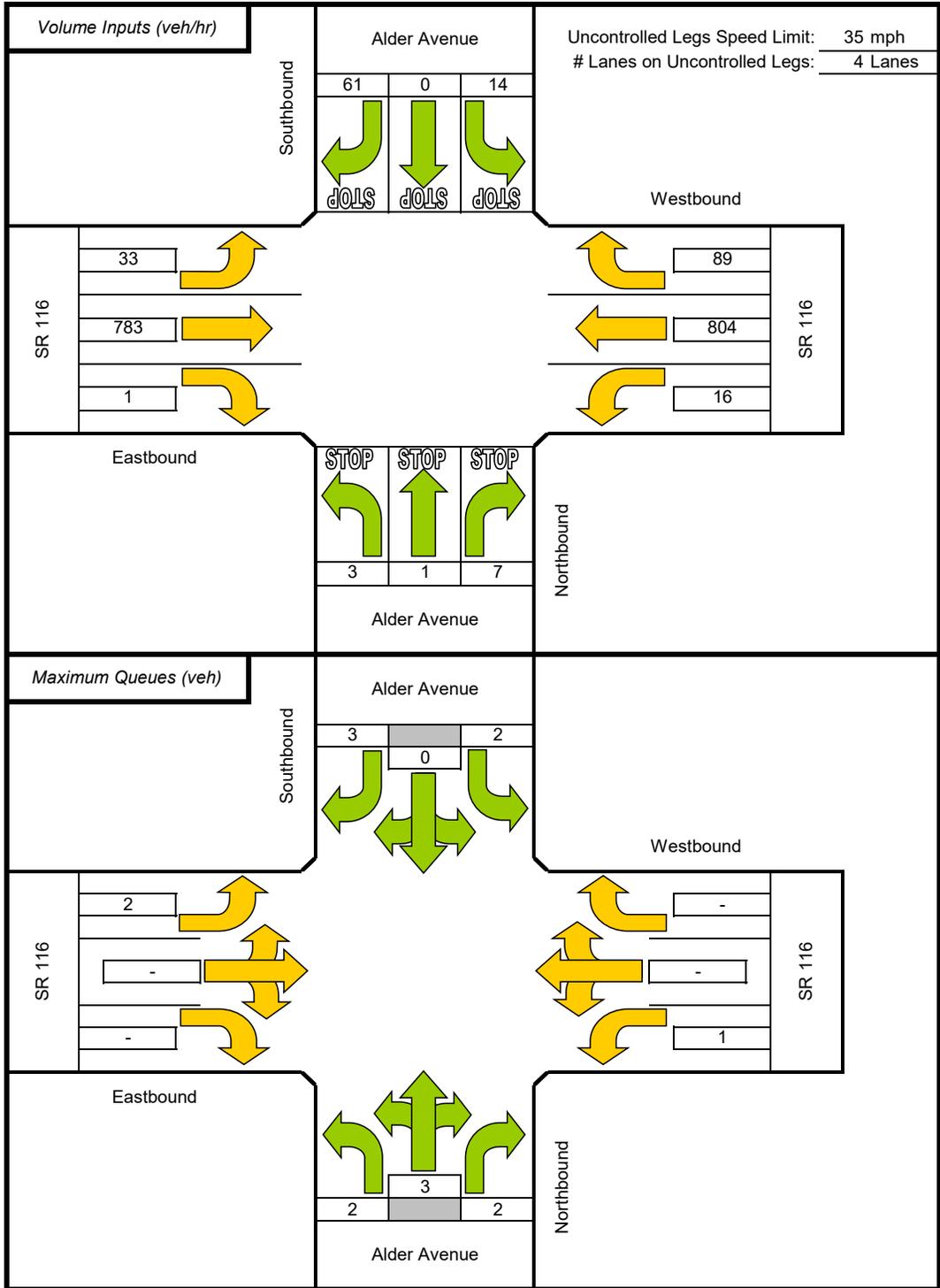
Volume Inputs (veh/hr)

Alder Avenue

Southbound

| 61 | 0 | 14 |

STOP STOP STOP

Uncontrolled Legs Speed Limit: 35 mph

Lanes on Uncontrolled Legs: 4 Lanes

Westbound

SR 116

| 33 |
| 783 |
| 1 |

| 89 |
| 804 |
| 16 |

SR 116

Eastbound

STOP STOP STOP

| 3 | 1 | 7 |

Northbound

Alder Avenue

Maximum Queues (veh)

Alder Avenue

Southbound

| 3 | | 2 |
| | 0 | |

Westbound

SR 116

2

1

SR 116

Eastbound

| 2 | | 2 |
| | 3 | |

Northbound

Alder Avenue

Source: John T. Gard, ITE Journal, November 2001, "Estimating Maximum Queue Length at Unsignalized Intersections"

Maximum Queue Length
Two-Way Stop-Controlled Intersections

Through Street: SR 116

Side Street: Alder Avenue

Scenario: Baseline plus Project PM

Stop Controlled Legs: North/South
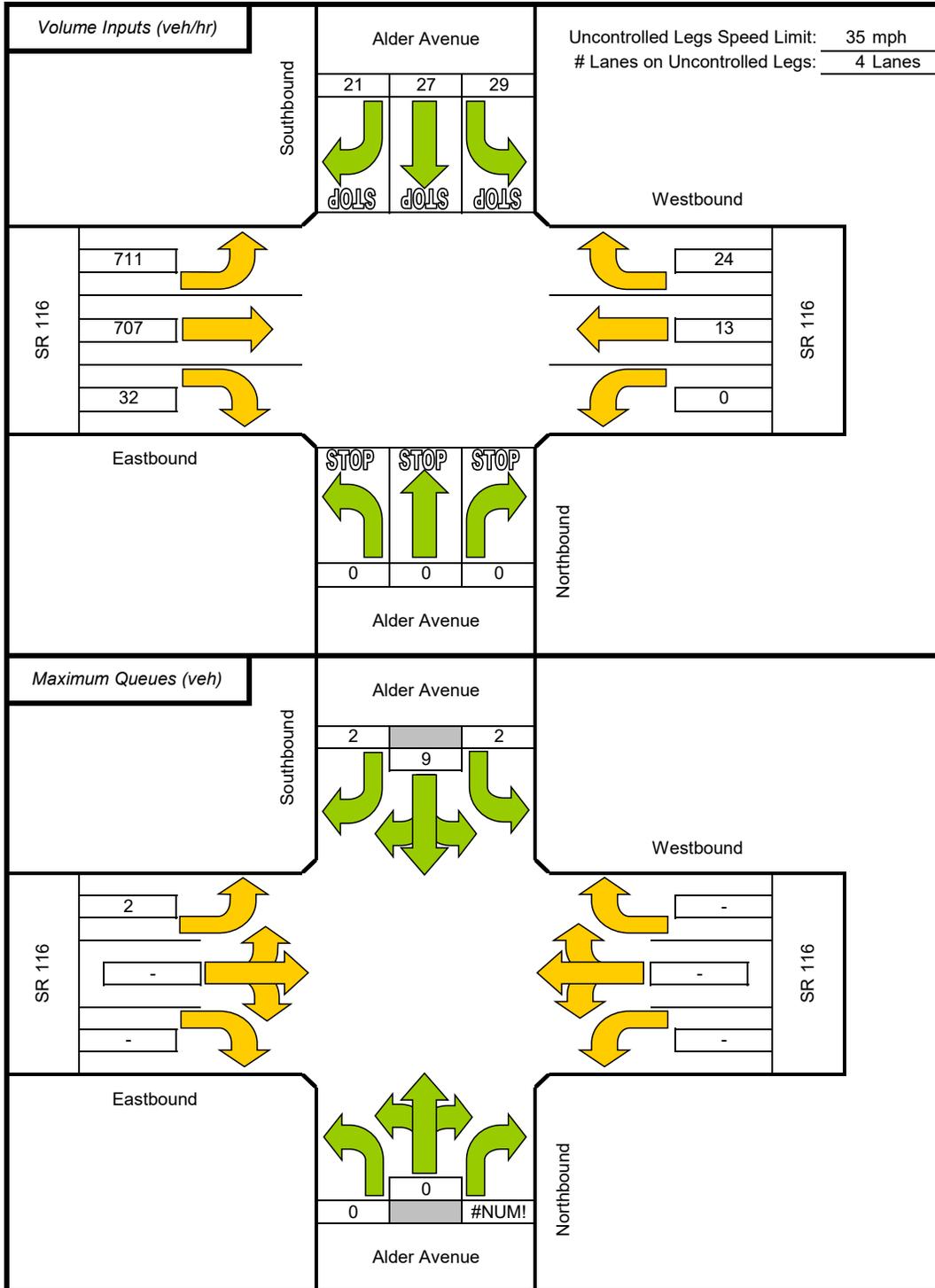
Volume Inputs (veh/hr)

Alder Avenue — Southbound

21	27	29
STOP	STOP	STOP

Uncontrolled Legs Speed Limit: 35 mph

Lanes on Uncontrolled Legs: 4 Lanes

Westbound

SR 116 — Eastbound

711	
707	
32	

SR 116 — Westbound

	24
	13
	0

Alder Avenue — Northbound

STOP	STOP	STOP
0	0	0

Maximum Queues (veh)

Alder Avenue — Southbound

2		2
	9	

Westbound

SR 116 — Eastbound

2	
-	
-	

SR 116 — Westbound

	-
	-
	-

Alder Avenue — Northbound

	0	
0		#NUM!

Source: John T. Gard, ITE Journal, November 2001, "Estimating Maximum Queue Length at Unsignalized Intersections"

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.032

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	✚			✚			✚			✚		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	3	1	6	4	0	19	19	696	1	15	702	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	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]	3	1	6	4	0	19	19	696	1	15	702	11
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]	1	0	2	1	0	5	5	189	0	4	191	3
Total Analysis Volume [veh/h]	3	1	7	4	0	21	21	757	1	16	763	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.04	0.00	0.04	0.02	0.01	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	44.31	36.57	14.26	43.14	36.48	14.50	9.15	0.00	0.00	9.07	0.00	0.00
Movement LOS	E	E	B	E	E	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.17	0.17	0.17	0.28	0.28	0.28	0.07	0.07	0.07	0.05	0.05	0.05
95th-Percentile Queue Length [ft/ln]	4.26	4.26	4.26	6.92	6.92	6.92	1.64	1.64	1.64	1.27	1.27	1.27
d_A, Approach Delay [s/veh]	25.51			19.48			0.24			0.19		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	0.69											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.044

Intersection Setup

Name	W Cotati Ave		SR 116		SR 116	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⊤		⊢		⊣	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	W Cotati Ave		SR 116		SR 116	
Base Volume Input [veh/h]	6	25	702	2	14	746
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	25	702	2	14	746
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	7	193	1	4	205
Total Analysis Volume [veh/h]	7	27	771	2	15	820
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.06	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	32.98	14.56	0.00	0.00	9.08	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.34	0.34	0.00	0.00	0.05	0.05
95th-Percentile Queue Length [ft/ln]	8.46	8.46	0.00	0.00	1.19	1.19
d_A, Approach Delay [s/veh]	18.12		0.00		0.17	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.110

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	✛			✛			✛			✛		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	0	0	0	15	0	27	15	635	0	0	618	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	15	0	27	15	635	0	0	618	32
Peak Hour Factor	1.0000	1.0000	1.0000	0.8950	1.0000	0.8950	0.8950	0.8950	1.0000	1.0000	0.8950	0.8950
Other Adjustment Factor	1.0000	1.0000	1.0000	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	4	0	8	4	177	0	0	173	9
Total Analysis Volume [veh/h]	0	0	0	17	0	30	17	709	0	0	691	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.11	0.00	0.06	0.02	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	33.71	28.38	12.52	34.37	30.72	15.37	8.91	0.00	0.00	8.80	0.00	0.00
Movement LOS	D	D	B	D	D	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.60	0.60	0.60	0.05	0.05	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	14.93	14.93	14.93	1.22	1.22	1.22	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	24.87			22.16			0.21			0.00		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	0.79											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.046

Intersection Setup

Name	W Cotati Ave		SR 116		SR 116	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⊤		⊢		⊣	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	W Cotati Ave		SR 116		SR 116	
Base Volume Input [veh/h]	6	34	699	5	63	617
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	34	699	5	63	617
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	9	190	1	17	168
Total Analysis Volume [veh/h]	7	37	760	5	68	671
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.08	0.01	0.00	0.07	0.01
d_M, Delay for Movement [s/veh]	34.31	14.78	0.00	0.00	9.31	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.42	0.42	0.00	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	10.56	10.56	0.00	0.00	5.66	5.66
d_A, Approach Delay [s/veh]	17.71		0.00		0.86	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.91					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Two-way stop	Delay (sec / veh):	1.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.191

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	✛			✛			�🠕⊦			✛		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	3	1	6	4	0	19	19	696	1	15	702	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	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	14	0	14	7	2	0	0	2	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	6	18	0	33	26	698	1	15	704	22
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]	1	0	2	5	0	9	7	190	0	4	191	6
Total Analysis Volume [veh/h]	3	1	7	20	0	36	28	759	1	16	765	24
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.19	0.00	0.08	0.03	0.01	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	47.63	37.81	14.41	50.07	42.98	20.23	9.23	0.00	0.00	9.08	0.00	0.00
Movement LOS	E	E	B	F	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.18	1.08	1.08	1.08	0.09	0.00	0.00	0.05	0.05	0.05
95th-Percentile Queue Length [ft/ln]	4.51	4.51	4.51	26.99	26.99	26.99	2.29	0.00	0.00	1.27	1.27	1.27
d_A, Approach Delay [s/veh]	26.72			30.76			0.33			0.18		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	1.45											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.046

Intersection Setup

Name	W Cotati Ave		SR 116		SR 116	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	W Cotati Ave		SR 116		SR 116	
Base Volume Input [veh/h]	6	25	702	2	14	746
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	16	0	0	13
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	25	718	2	14	759
Peak Hour Factor	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	7	197	1	4	208
Total Analysis Volume [veh/h]	7	27	788	2	15	833
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	34.20	14.82	0.00	0.00	9.14	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.35	0.35	0.00	0.00	0.05	0.05
95th-Percentile Queue Length [ft/ln]	8.74	8.74	0.00	0.00	1.21	1.21
d_A, Approach Delay [s/veh]	18.57		0.00		0.17	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Two-way stop	Delay (sec / veh):	1.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.218

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	†			†			┑┟			†		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	0	0	0	15	0	27	15	635	0	0	618	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	12	0	12	17	2	0	0	2	29
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	27	0	39	32	637	0	0	620	61
Peak Hour Factor	1.0000	1.0000	1.0000	0.8990	1.0000	0.8990	0.8990	0.8990	1.0000	1.0000	0.8990	0.8990
Other Adjustment Factor	1.0000	1.0000	1.0000	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	11	9	177	0	0	172	17
Total Analysis Volume [veh/h]	0	0	0	30	0	43	36	709	0	0	690	68
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.22	0.00	0.08	0.04	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	37.70	30.93	12.54	41.10	36.89	19.72	9.09	0.00	0.00	8.80	0.00	0.00
Movement LOS	E	D	B	E	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	1.27	1.27	1.27	0.11	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	31.79	31.79	31.79	2.73	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	27.06			28.46			0.43			0.00		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	1.53											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.049

Intersection Setup

Name	W Cotati Ave		SR 116		SR 116	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	W Cotati Ave		SR 116		SR 116	
Base Volume Input [veh/h]	6	34	699	5	63	617
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	14	0	0	31
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	34	713	5	63	648
Peak Hour Factor	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	9	196	1	17	178
Total Analysis Volume [veh/h]	7	37	783	5	69	711
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.08	0.01	0.00	0.07	0.01
d_M, Delay for Movement [s/veh]	36.39	15.07	0.00	0.00	9.37	0.00
Movement LOS	E	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.44	0.44	0.00	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	11.02	11.02	0.00	0.00	5.73	5.73
d_A, Approach Delay [s/veh]	18.27		0.00		0.83	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.90					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave-Village Ave

Control Type:	Signalized	Delay (sec / veh):	12.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.445

Intersection Setup

Name	W Cotati Ave			Village Ave			SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	��			▘			▘			▘		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	25.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	W Cotati Ave			Village Ave			SR 116			SR 116		
Base Volume Input [veh/h]	23	8	80	42	3	9	41	961	16	74	1151	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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
Total Hourly Volume [veh/h]	23	8	80	42	3	9	41	961	16	74	1151	180
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]	6	2	20	11	1	2	10	240	4	19	288	45
Total Analysis Volume [veh/h]	23	8	80	42	3	9	41	961	16	74	1151	180
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	1	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	5	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	23	14	9	14	0	9	53	0	14	58	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No		No		No	No		No	No	
Maximum Recall		No	No		No		No	No		No	No	
Pedestrian Recall		No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	25	7	7	4	57	57	10	63	63
g / C, Green / Cycle	0.13	0.28	0.08	0.08	0.04	0.63	0.63	0.11	0.70	0.70
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.03	0.01	0.03	0.26	0.26	0.06	0.36	0.37
s, saturation flow rate [veh/h]	1468	1611	1309	1651	1309	1870	1859	1309	1870	1783
c, Capacity [veh/h]	297	455	105	136	80	1176	1169	142	1300	1239
d1, Uniform Delay [s]	34.76	24.51	44.50	38.17	45.00	8.41	8.41	43.20	6.57	6.60
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	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]	0.11	0.20	2.48	0.28	5.07	1.09	1.10	2.96	1.51	1.61
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	0.08	0.19	0.40	0.09	0.51	0.42	0.42	0.52	0.52	0.53
d, Delay for Lane Group [s/veh]	34.87	24.72	46.98	38.45	50.07	9.50	9.50	46.16	8.08	8.22
Lane Group LOS	C	C	D	D	D	A	A	D	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.46	1.45	1.01	0.25	1.02	4.15	4.13	1.70	4.84	4.71
50th-Percentile Queue Length [ft/ln]	11.40	36.21	25.29	6.32	25.52	103.78	103.24	42.62	121.01	117.78
95th-Percentile Queue Length [veh/ln]	0.82	2.61	1.82	0.46	1.84	7.47	7.43	3.07	8.45	8.27
95th-Percentile Queue Length [ft/ln]	20.51	65.18	45.51	11.38	45.94	186.81	185.82	76.72	211.21	206.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.87	24.72	24.72	46.98	38.45	38.45	50.07	9.50	9.50	46.16	8.13	8.22
Movement LOS	C	C	C	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]		26.82			45.09			11.13			10.15	
Approach LOS		C			D			B			B	
d_I, Intersection Delay [s/veh]						11.98						
Intersection LOS						B						
Intersection V/C						0.445						

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 Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	222	1089	1200
d_b, Bicycle Delay [s]	18.05	35.56	9.34	7.20
I_b,int, Bicycle LOS Score for Intersection	1.743	1.649	2.399	2.719
Bicycle LOS	A	A	B	B

Sequence
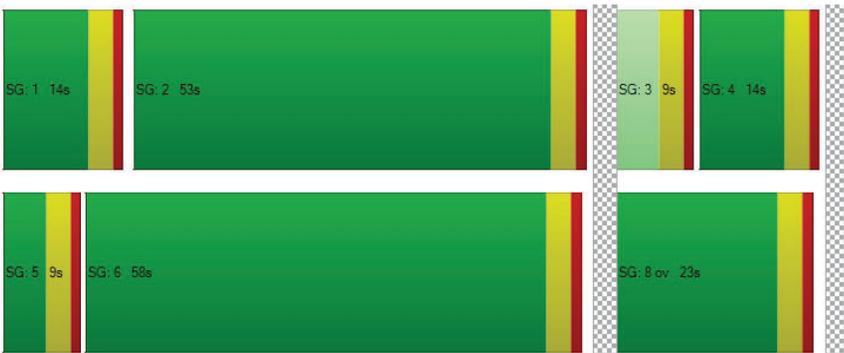
Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 1 14s   SG: 2 53s   SG: 3 9s   SG: 4 14s

SG: 5 9s   SG: 6 58s   SG: 8 ov 23s

Intersection Level Of Service Report
Intersection 3: SR 116/New North-South Street

Control Type:	Signalized	Delay (sec / veh):	13.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.314

Intersection Setup

Name							SR 116			SR 116		
Approach		Northbound			Southbound			Eastbound			Westbound	
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]		30.00			30.00			45.00			45.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No			No			No	
Crosswalk		No			No			Yes			No	

Volumes

Name							SR 116			SR 116		
Base Volume Input [veh/h]	2	8	31	82	3	23	131	876	5	47	762	351
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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]	2	8	31	82	3	23	131	876	5	47	762	351
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]	1	2	8	21	1	6	33	219	1	12	191	88
Total Analysis Volume [veh/h]	2	8	31	82	3	23	131	876	5	47	762	351
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		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		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	No
Signal Coordination Group	-
Cycle Length [s]	80
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Overlap	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	10	30	0	10	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	26	0	9	26	0	22	25	0	20	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	10	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		Yes	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	R	L	C	C	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80
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	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	10	8	50	50	3	46
g / C, Green / Cycle	0.19	0.19	0.19	0.12	0.09	0.62	0.62	0.04	0.57
(v / s)_i Volume / Saturation Flow Rate	0.01	0.02	0.03	0.01	0.07	0.24	0.24	0.03	0.21
s, saturation flow rate [veh/h]	1765	1407	1598	1589	1781	1870	1866	1781	3560
c, Capacity [veh/h]	434	319	476	195	169	1159	1157	75	2019
d1, Uniform Delay [s]	26.54	27.02	27.24	31.31	35.42	7.57	7.57	37.77	9.56
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.02	0.13	0.11	0.27	7.74	0.95	0.95	8.67	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
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

	C	L	C	R	L	C	C	L	C
X, volume / capacity	0.02	0.09	0.12	0.12	0.77	0.38	0.38	0.63	0.38
d, Delay for Lane Group [s/veh]	26.56	27.15	27.34	31.57	43.16	8.53	8.53	46.44	10.10
Lane Group LOS	C	C	C	D	D	A	A	D	B
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.16	0.48	0.88	0.40	2.71	3.11	3.10	1.04	3.08
50th-Percentile Queue Length [ft/ln]	3.88	11.95	21.89	10.07	67.69	77.73	77.59	25.94	76.96
95th-Percentile Queue Length [veh/ln]	0.28	0.86	1.58	0.73	4.87	5.60	5.59	1.87	5.54
95th-Percentile Queue Length [ft/ln]	6.99	21.51	39.40	18.13	121.85	139.91	139.66	46.68	138.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.56	26.56	0.00	27.27	27.34	31.57	43.16	8.53	8.53	46.44	10.10	0.00
Movement LOS	C	C		C	C	C	D	A	A	D	B	
d_A, Approach Delay [s/veh]	6.48			28.19			13.01			12.21		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	13.49											
Intersection LOS	B											
Intersection V/C	0.314											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	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	31.54	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	2.836	0.000
Crosswalk LOS	F	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	774	774	525	475
d_b, Bicycle Delay [s]	15.04	15.04	21.79	23.29
I_b,int, Bicycle LOS Score for Intersection	1.576	1.738	2.395	2.227
Bicycle LOS	A	A	B	B
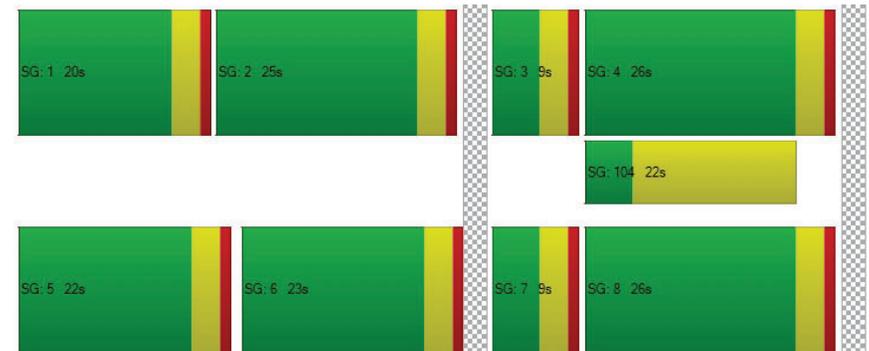
Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 1 20s   SG: 2 25s   SG: 3 9s   SG: 4 26s

SG: 104 22s

SG: 5 22s   SG: 6 23s   SG: 7 9s   SG: 8 26s

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave-Village Ave

Control Type:	Signalized	Delay (sec / veh):	33.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.729

Intersection Setup

Name	W Cotati Ave			Village Ave			SR 116					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	⌐Ⱶ			⌐Ⱶ			⌐ⱵⱵ			⌐ⱵⱵ		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	25.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name	W Cotati Ave			Village Ave			SR 116					
Base Volume Input [veh/h]	28	6	127	281	10	110	83	1501	36	142	1404	167
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	84	0	0	79	0	0	2	0	0	9
Total Hourly Volume [veh/h]	28	6	43	281	10	31	83	1501	34	142	1404	158
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]	7	2	11	70	3	8	21	375	9	36	351	40
Total Analysis Volume [veh/h]	28	6	43	281	10	31	83	1501	34	142	1404	158
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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	No
Signal Coordination Group	-
Cycle Length [s]	70
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	1	7	4	5	5	2	0	1	6	0
Auxiliary Signal Groups			1,8			4,5						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	0	0	5	0	0	0	0	0	0	0	0
Maximum Green [s]	30	90	90	30	90	90	90	90	0	90	90	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	23	12	9	14	8	8	35	0	12	39	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No		No	No	No	Yes		No	Yes	
Maximum Recall		No	No		No	No	No	No		No	No	
Pedestrian Recall		No	No		No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	31	15	23	4	31	31	8	35	35
g / C, Green / Cycle	0.27	0.44	0.21	0.33	0.06	0.44	0.44	0.11	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.21	0.02	0.06	0.41	0.41	0.11	0.42	0.43
s, saturation flow rate [veh/h]	1410	1619	1356	1650	1306	1870	1855	1306	1870	1805
c, Capacity [veh/h]	507	714	325	539	121	832	825	195	938	906
d1, Uniform Delay [s]	19.02	11.29	30.51	16.29	34.95	18.37	18.41	33.45	15.03	15.25
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, 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]	0.04	0.04	7.39	0.06	6.99	22.83	23.80	5.27	9.67	11.30
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	0.06	0.07	0.86	0.08	0.69	0.92	0.93	0.73	0.84	0.86
d, Delay for Lane Group [s/veh]	19.07	11.33	37.89	16.35	41.95	41.19	42.21	38.72	24.70	26.55
Lane Group LOS	B	B	D	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.33	0.42	5.33	0.44	1.62	14.76	14.92	2.71	11.80	12.11
50th-Percentile Queue Length [ft/ln]	8.37	10.56	133.13	10.94	40.50	368.91	372.98	67.70	294.99	302.82
95th-Percentile Queue Length [veh/ln]	0.60	0.76	9.11	0.79	2.92	21.06	21.25	4.87	17.43	17.82
95th-Percentile Queue Length [ft/ln]	15.06	19.01	227.75	19.70	72.90	526.40	531.34	121.86	435.83	445.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.07	11.33	11.33	37.89	16.35	16.35	41.95	41.69	42.21	38.72	25.51	26.55
Movement LOS	B	B	B	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]		14.14			35.15			41.71			26.71	
Approach LOS		B			D			D			C	
d_I, Intersection Delay [s/veh]						33.70						
Intersection LOS						C						
Intersection V/C						0.729						

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	35.0	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	8.77	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	2.329	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	885	514	885	999
d_b, Bicycle Delay [s]	10.89	19.34	10.89	8.77
I_b,int, Bicycle LOS Score for Intersection	1.825	2.221	2.896	2.973
Bicycle LOS	A	B	C	C

Sequence
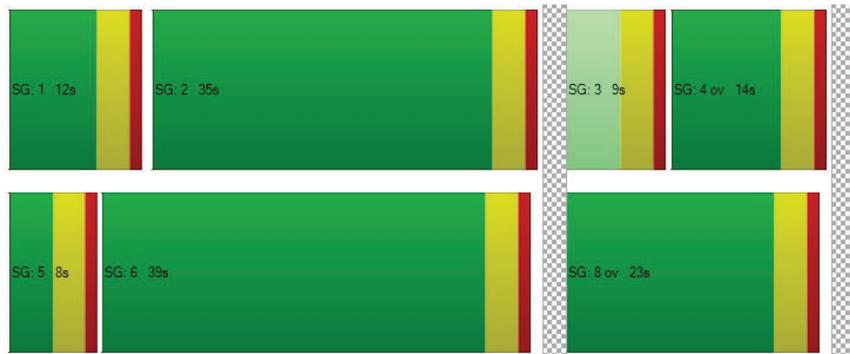
Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 1 12s   SG: 2 35s   SG: 3 9s   SG: 4 ov 14s

SG: 5 8s   SG: 6 39s   SG: 8 ov 23s

Intersection Level Of Service Report
Intersection 3: SR 116/New North-South Street

Control Type:	Signalized	Delay (sec / veh):	25.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	12.451

Intersection Setup

Name								SR 116			SR 116		
Approach		Northbound			Southbound			Eastbound			Westbound		
Lane Configuration		┤┌			┐┤┌			┐┤├			┐┤├		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]		30.00			30.00			45.00			45.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No			No			No	
Crosswalk		Yes			Yes			Yes			Yes	

Volumes

Name								SR 116			SR 116		
Base Volume Input [veh/h]	39	5	115	461	9	210	111	1040	37	95	1219	238
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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]	39	5	115	461	9	210	111	1040	37	95	1219	238
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	1	29	115	2	53	28	260	9	24	305	60
Total Analysis Volume [veh/h]	39	5	115	461	9	210	111	1040	37	95	1219	238
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		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		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	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Overlap	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	0	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	10	10	5	10	0	0	10	0	5	10	0
Maximum Green [s]	7	22	22	88	103	0	0	27	0	7	38	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	26	26	9	26	0	0	62	0	13	75	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	17	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No	No	Yes	No			No		No	No	
Maximum Recall	No	No	No	No	No			No		No	No	
Pedestrian Recall	No	No	No	No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	34	31	31	22	59	59	59	8	71	71
g / C, Green / Cycle	0.28	0.31	0.28	0.28	0.20	0.54	0.54	0.54	0.07	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	1.36	0.07	0.16	0.40	0.13	0.30	0.29	0.29	0.05	0.40	0.40
s, saturation flow rate [veh/h]	32	1589	1271	673	1589	365	1870	1847	1781	1870	1766
c, Capacity [veh/h]	128	485	318	318	319	164	1008	996	123	1205	1139
d1, Uniform Delay [s]	35.55	28.65	40.42	43.41	40.50	41.79	16.47	16.48	50.37	11.53	11.68
k, delay calibration	0.50	0.28	0.11	0.11	0.11	0.50	0.50	0.50	0.13	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	1.00
d2, Incremental Delay [s]	7.33	0.65	2.15	6.25	2.33	22.08	2.07	2.10	12.72	2.38	2.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.24	0.64	0.84	0.66	0.68	0.54	0.54	0.77	0.62	0.63
d, Delay for Lane Group [s/veh]	42.88	29.31	42.57	49.66	42.83	63.87	18.54	18.57	63.09	13.91	14.34
Lane Group LOS	D	C	D	D	D	E	B	B	E	B	B
Critical Lane Group	Yes	No	No	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.22	2.36	3.41	5.89	5.42	3.99	8.59	8.50	2.93	9.76	9.59
50th-Percentile Queue Length [ft/ln]	30.40	59.09	85.18	147.30	135.57	99.82	214.80	212.57	73.35	244.02	239.78
95th-Percentile Queue Length [veh/ln]	2.19	4.25	6.13	9.87	9.24	7.19	13.40	13.28	5.28	14.88	14.67
95th-Percentile Queue Length [ft/ln]	54.71	106.36	153.33	246.83	231.05	179.67	334.98	332.12	132.03	372.12	366.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.88	42.88	29.31	46.53	49.66	42.83	63.87	18.56	18.57	63.09	14.08	14.34
Movement LOS	D	D	C	D	D	D	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	33.06			45.44			22.79			17.12		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	25.09											
Intersection LOS	C											
Intersection V/C	12.451											

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	0.00
d_p, Pedestrian Delay [s]	46.39	46.39	46.39	46.39
I_p,int, Pedestrian LOS Score for Intersection	2.215	2.671	3.151	3.905
Crosswalk LOS	B	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	563	563	1054	1290
d_b, Bicycle Delay [s]	28.39	28.39	12.31	6.93
I_b,int, Bicycle LOS Score for Intersection	1.822	2.682	2.540	2.840
Bicycle LOS	A	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 1 ov 13s   SG: 2 62s   SG: 3 9s   SG: 4 26s
SG: 102 26s   SG: 104 22s
SG: 6 75s   SG: 7 9s   SG: 8 26s
SG: 106 22s   SG: 108 22s

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Two-way stop	Delay (sec / veh):	4.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.432

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach		Northbound			Southbound			Eastbound			Westbound	
Lane Configuration		✛			✛			✛			✛	
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]		25.00			35.00			45.00			45.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			No			No			No	

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	3	1	6	4	0	19	19	696	1	15	702	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	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	31	0	59	26	0	0	0	0	69
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	3	1	6	35	0	78	45	696	1	15	702	80
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]	1	0	2	10	0	21	12	189	0	4	191	22
Total Analysis Volume [veh/h]	3	1	7	38	0	85	49	757	1	16	763	87
Pedestrian Volume [ped/h]		0			0			0			0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.01	0.01	0.43	0.00	0.19	0.05	0.01	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	63.61	45.28	15.13	80.13	71.96	44.39	9.55	0.00	0.00	9.07	0.00	0.00
Movement LOS	F	E	C	F	F	E	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.23	0.23	0.23	4.34	4.34	4.34	0.17	0.17	0.17	0.05	0.05	0.05
95th-Percentile Queue Length [ft/ln]	5.75	5.75	5.75	108.48	108.48	108.48	4.27	4.27	4.27	1.27	1.27	1.27
d_A, Approach Delay [s/veh]		32.69			55.46			0.58			0.17	
Approach LOS		D			F			A			A	
d_I, Intersection Delay [s/veh]						4.31						
Intersection LOS						A						

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Two-way stop	Delay (sec / veh):	3.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.432

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach		Northbound			Southbound			Eastbound			Westbound	
Lane Configuration		✛			⊣⊺⊦			✛			✛	
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]		25.00			35.00			45.00			45.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		No			No			No			No	

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	3	1	6	4	0	19	19	696	1	15	702	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	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	31	0	59	26	0	0	0	0	69
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	3	1	6	35	0	78	45	696	1	15	702	80
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]	1	0	2	10	0	21	12	189	0	4	191	22
Total Analysis Volume [veh/h]	3	1	7	38	0	85	49	757	1	16	763	87
Pedestrian Volume [ped/h]		0			0			0			0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.01	0.01	0.43	0.00	0.19	0.05	0.01	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	63.61	45.28	15.13	82.09	43.23	15.66	9.55	0.00	0.00	9.07	0.00	0.00
Movement LOS	F	E	C	F	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.23	0.23	0.23	2.09	0.69	0.69	0.17	0.17	0.17	0.05	0.05	0.05
95th-Percentile Queue Length [ft/ln]	5.75	5.75	5.75	52.24	17.26	17.26	4.27	4.27	4.27	1.27	1.27	1.27
d_A, Approach Delay [s/veh]		32.69			36.24			0.58			0.17	
Approach LOS		D			E			A			A	
d_I, Intersection Delay [s/veh]					3.00							
Intersection LOS					A							

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Signalized	Delay (sec / veh):	14.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.571

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach		Northbound			Southbound			Eastbound			Westbound	
Lane Configuration		✚			✚			✚			✚	
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]		25.00			35.00			45.00			45.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No			No			No	
Crosswalk		No			No			No			No	

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	3	1	6	4	0	19	19	696	1	15	702	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	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	31	0	59	26	0	0	0	0	69
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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
Total Hourly Volume [veh/h]	3	1	6	35	0	78	45	696	1	15	702	80
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]	1	0	2	10	0	21	12	189	0	4	191	22
Total Analysis Volume [veh/h]	3	1	7	38	0	85	49	757	1	16	763	87
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		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		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]	230
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	29	0	0	29	0	0	193	0	0	193	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	197	0	0	197	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	C	C
C, Cycle Length [s]	230	230	230	230
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	193	193
g / C, Green / Cycle	0.13	0.13	0.84	0.84
(v / s)_i Volume / Saturation Flow Rate	0.01	0.08	0.48	0.49
s, saturation flow rate [veh/h]	1282	1395	1553	1628
c, Capacity [veh/h]	182	196	1320	1382
d1, Uniform Delay [s]	88.41	95.36	5.32	5.74
k, delay calibration	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.58	12.23	1.75	1.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.58	0.56	0.58
d, Delay for Lane Group [s/veh]	88.98	107.59	7.07	7.52
Lane Group LOS	F	F	A	A
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.56	7.14	9.55	11.01
50th-Percentile Queue Length [ft/ln]	14.11	178.60	238.77	275.17
95th-Percentile Queue Length [veh/ln]	1.02	11.53	14.62	16.45
95th-Percentile Queue Length [ft/ln]	25.40	288.19	365.47	411.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	88.98	88.98	88.98	107.59	107.59	107.59	7.07	7.07	7.07	7.52	7.52	7.52
Movement LOS	F	F	F	F	F	F	A	A	A	A	A	A
d_A, Approach Delay [s/veh]		88.98			107.59			7.07			7.52	
Approach LOS		F			F			A			A	
d_I, Intersection Delay [s/veh]						14.61						
Intersection LOS						B						
Intersection V/C						0.571						

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 Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	252	252	1678	1678
d_b, Bicycle Delay [s]	87.83	87.83	2.98	2.98
I_b,int, Bicycle LOS Score for Intersection	1.576	1.746	2.784	2.875
Bicycle LOS	A	A	C	C

Sequence

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

SG: 2 197s SG: 4 33s

SG: 6 197s SG: 8 33s

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.051

Intersection Setup

Name	W Cotati Ave		SR 116		SR 116	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	W Cotati Ave		SR 116		SR 116	
Base Volume Input [veh/h]	6	25	702	2	14	746
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	31	0	0	69
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	25	733	2	14	815
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	7	201	1	4	224
Total Analysis Volume [veh/h]	7	27	805	2	15	896
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	37.37	15.17	0.00	0.00	9.20	0.00
Movement LOS	E	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.37	0.37	0.00	0.00	0.05	0.05
95th-Percentile Queue Length [ft/ln]	9.32	9.32	0.00	0.00	1.22	1.22
d_A, Approach Delay [s/veh]	19.47		0.00		0.16	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Two-way stop	Delay (sec / veh):	1.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.218

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration		✚			✚			✚			✚	
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	0	0	0	15	0	27	15	635	0	0	618	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	12	0	23	14	0	0	0	0	35
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	27	0	50	29	635	0	0	618	67
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]	0	0	0	7	0	13	8	171	0	0	166	18
Total Analysis Volume [veh/h]	0	0	0	29	0	54	31	683	0	0	665	72
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.22	0.00	0.11	0.03	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	38.86	31.17	12.52	41.32	37.24	19.95	9.09	0.00	0.00	8.80	0.00	0.00
Movement LOS	E	D	B	E	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	1.42	1.42	1.42	0.10	0.10	0.10	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	35.44	35.44	35.44	2.47	2.47	2.47	0.00	0.00	0.00
d_A, Approach Delay [s/veh]		27.52			27.44			0.40			0.00	
Approach LOS		D			D			A			A	
d_I, Intersection Delay [s/veh]						1.67						
Intersection LOS						A						

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.050

Intersection Setup

Name	W Cotati Ave		SR 116		SR 116	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	⊤		⊦		⊣	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	W Cotati Ave		SR 116		SR 116	
Base Volume Input [veh/h]	6	34	699	5	63	617
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	12	0	0	35
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	34	711	5	63	652
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	9	193	1	17	177
Total Analysis Volume [veh/h]	7	37	773	5	68	709
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.08	0.01	0.00	0.07	0.01
d_M, Delay for Movement [s/veh]	36.48	15.04	0.00	0.00	9.36	0.00
Movement LOS	E	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.44	0.44	0.00	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	11.01	11.01	0.00	0.00	5.72	5.72
d_A, Approach Delay [s/veh]	18.26		0.00		0.82	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.90					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.616

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	✛			✛			⅂┼			✛		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	3	1	6	4	0	19	19	696	1	15	702	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	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	45	0	73	33	2	0	0	2	80
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	3	1	6	49	0	92	52	698	1	15	704	91
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]	1	0	2	13	0	25	14	190	0	4	191	25
Total Analysis Volume [veh/h]	3	1	7	53	0	100	57	759	1	16	765	99
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.01	0.01	0.62	0.00	0.22	0.06	0.01	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	68.22	46.07	15.38	136.31	127.56	99.84	9.65	0.00	0.00	9.08	0.00	0.00
Movement LOS	F	E	C	F	F	F	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.24	9.28	9.28	9.28	0.20	0.00	0.00	0.05	0.05	0.05
95th-Percentile Queue Length [ft/ln]	6.08	6.08	6.08	231.90	231.90	231.90	5.03	0.00	0.00	1.27	1.27	1.27
d_A, Approach Delay [s/veh]		34.30			112.51			0.67			0.17	
Approach LOS		D			F			A			A	
d_I, Intersection Delay [s/veh]						9.84						
Intersection LOS						A						

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Two-way stop	Delay (sec / veh):	4.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.616

Intersection Setup

Name		Alder Ave			SR 116			SR 116		
Approach	Northbound		Southbound		Eastbound		Westbound			
Lane Configuration										
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]		30.00			35.00			45.00			45.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			No			No			No	

Volumes

Name		Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	3	1	6	4	0	19	19	696	1	15	702	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	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	45	0	73	33	2	0	0	2	80
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	3	1	6	49	0	92	52	698	1	15	704	91
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]	1	0	2	13	0	25	14	190	0	4	191	25
Total Analysis Volume [veh/h]	3	1	7	53	0	100	57	759	1	16	765	99
Pedestrian Volume [ped/h]		0			0			0			0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.01	0.01	0.62	0.00	0.22	0.06	0.01	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	68.22	46.07	15.38	116.30	43.98	16.26	9.65	0.00	0.00	9.08	0.00	0.00
Movement LOS	F	E	C	F	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.24	3.84	0.86	0.86	0.20	0.00	0.00	0.05	0.05	0.05
95th-Percentile Queue Length [ft/ln]	6.08	6.08	6.08	95.98	21.48	21.48	5.03	0.00	0.00	1.27	1.27	1.27
d_A, Approach Delay [s/veh]		34.30			51.03			0.67			0.17	
Approach LOS		D			F			A			A	
d_I, Intersection Delay [s/veh]	4.78											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Signalized	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.601

Intersection Setup

Name					Alder Ave			SR 116			SR 116		
Approach		Northbound			Southbound			Eastbound			Westbound		
Lane Configuration		✛			✛			⊤�ꓩ			✛		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]		30.00			35.00			45.00			45.00		
Grade [%]		0.00			0.00			0.00			0.00		
Curb Present		No			No			No			No		
Crosswalk		Yes			No			No			No		

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	3	1	6	4	0	19	19	696	1	15	702	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	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	45	0	73	33	2	0	0	2	80
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	3	1	6	49	0	92	52	698	1	15	704	91
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]	1	0	2	13	0	25	14	190	0	4	191	25
Total Analysis Volume [veh/h]	3	1	7	53	0	100	57	759	1	16	765	99
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		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		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]	240
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	37	0	0	37	0	0	195	0	0	195	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	41	0	0	41	0	0	199	0	0	199	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	7	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C
C, Cycle Length [s]	240	240	240	240	240
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	37	195	195	195
g / C, Green / Cycle	0.15	0.15	0.81	0.81	0.81
(v / s)_i Volume / Saturation Flow Rate	0.01	0.10	0.08	0.42	0.50
s, saturation flow rate [veh/h]	1257	1384	614	1683	1625
c, Capacity [veh/h]	213	234	413	1367	1335
d1, Uniform Delay [s]	86.42	95.38	12.91	7.22	8.29
k, delay calibration	0.50	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]	0.41	11.56	0.63	1.38	2.07
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	0.05	0.60	0.13	0.51	0.61
d, Delay for Lane Group [s/veh]	86.83	106.94	13.53	8.59	10.36
Lane Group LOS	F	F	B	A	B
Critical Lane Group	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.56	9.11	1.23	11.21	14.98
50th-Percentile Queue Length [ft/ln]	14.08	227.69	30.81	280.16	374.57
95th-Percentile Queue Length [veh/ln]	1.01	14.06	2.22	16.70	21.33
95th-Percentile Queue Length [ft/ln]	25.34	351.43	55.46	417.41	533.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	86.83	86.83	86.83	106.94	106.94	106.94	13.53	8.59	8.59	10.36	10.36	10.36
Movement LOS	F	F	F	F	F	F	B	A	A	B	B	B
d_A, Approach Delay [s/veh]	86.83			106.94			8.93			10.36		
Approach LOS	F			F			A			B		
d_I, Intersection Delay [s/veh]	18.14											
Intersection LOS	B											
Intersection V/C	0.601											

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]	111.17	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	1.795	0.000	0.000	0.000
Crosswalk LOS	A	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	308	308	1625	1625
d_b, Bicycle Delay [s]	85.85	85.85	4.22	4.22
I_b,int, Bicycle LOS Score for Intersection	1.576	1.792	2.799	2.896
Bicycle LOS	A	A	C	C

Sequence

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

SG: 2 199s   SG: 4 41s
SG: 102 12s
SG: 6 199s   SG: 8 41s

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.053

Intersection Setup

Name	W Cotati Ave		SR 116		SR 116	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	W Cotati Ave		SR 116		SR 116	
Base Volume Input [veh/h]	6	25	702	2	14	746
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	47	0	0	82
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	25	749	2	14	828
Peak Hour Factor	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	7	206	1	4	227
Total Analysis Volume [veh/h]	7	27	822	2	15	909
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	38.80	15.46	0.00	0.00	9.26	0.00
Movement LOS	E	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.39	0.39	0.00	0.00	0.05	0.05
95th-Percentile Queue Length [ft/ln]	9.64	9.64	0.00	0.00	1.24	1.24
d_A, Approach Delay [s/veh]	19.98		0.00		0.15	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Two-way stop	Delay (sec / veh):	2.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.309

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	✚			✚			⍔⍔			✚		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	0	0	0	15	0	27	15	635	0	0	618	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	21	0	21	28	2	0	0	2	50
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	36	0	48	43	637	0	0	620	82
Peak Hour Factor	1.0000	1.0000	1.0000	0.8990	1.0000	0.8990	0.8990	0.8990	1.0000	1.0000	0.8990	0.8990
Other Adjustment Factor	1.0000	1.0000	1.0000	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	10	0	13	12	177	0	0	172	23
Total Analysis Volume [veh/h]	0	0	0	40	0	53	48	709	0	0	690	91
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.31	0.00	0.10	0.05	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	40.85	32.91	12.54	48.23	43.67	25.09	9.22	0.00	0.00	8.80	0.00	0.00
Movement LOS	E	D	B	E	E	D	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	2.04	2.04	2.04	0.15	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	51.02	51.02	51.02	3.78	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	28.77			35.01			0.58			0.00		
Approach LOS	D			E			A			A		
d_I, Intersection Delay [s/veh]	2.28											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Two-way stop	Delay (sec / veh):	1.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.309

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	✛			�						✛		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	0	0	0	15	0	27	15	635	0	0	618	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	21	0	21	28	2	0	0	2	50
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	36	0	48	43	637	0	0	620	82
Peak Hour Factor	1.0000	1.0000	1.0000	0.8990	1.0000	0.8990	0.8990	0.8990	1.0000	1.0000	0.8990	0.8990
Other Adjustment Factor	1.0000	1.0000	1.0000	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	10	0	13	12	177	0	0	172	23
Total Analysis Volume [veh/h]	0	0	0	40	0	53	48	709	0	0	690	91
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.31	0.00	0.10	0.05	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	40.85	32.91	12.54	49.61	32.26	13.69	9.22	0.00	0.00	8.80	0.00	0.00
Movement LOS	E	D	B	E	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	1.30	0.35	0.35	0.15	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	32.52	8.67	8.67	3.78	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	28.77			29.08			0.58			0.00		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	1.94											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 1: SR 116 / Alder Ave

Control Type:	Signalized	Delay (sec / veh):	10.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.487

Intersection Setup

Name				Alder Ave			SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	✛			✛			⅂╊			✛		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name				Alder Ave			SR 116			SR 116		
Base Volume Input [veh/h]	0	0	0	15	0	27	15	635	0	0	618	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	21	0	21	28	2	0	0	2	50
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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
Total Hourly Volume [veh/h]	0	0	0	36	0	48	43	637	0	0	620	82
Peak Hour Factor	1.0000	1.0000	1.0000	0.8990	1.0000	0.8990	0.8990	0.8990	1.0000	1.0000	0.8990	0.8990
Other Adjustment Factor	1.0000	1.0000	1.0000	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	10	0	13	12	177	0	0	172	23
Total Analysis Volume [veh/h]	0	0	0	40	0	53	48	709	0	0	690	91
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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]	230
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	25	0	0	25	0	0	197	0	0	197	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	29	0	0	29	0	0	201	0	0	201	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	7	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	C	L	C	C
C, Cycle Length [s]	230	230	230	230	230
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	0.00	2.00
I2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	197	197	197
g / C, Green / Cycle	0.11	0.11	0.86	0.86	0.86
(v / s)_i Volume / Saturation Flow Rate	0.00	0.06	0.06	0.38	0.43
s, saturation flow rate [veh/h]	1683	1378	670	1683	1649
c, Capacity [veh/h]	199	172	528	1442	1428
d1, Uniform Delay [s]	0.00	97.09	2.54	3.81	4.12
k, delay calibration	0.50	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]	0.00	9.87	0.30	0.99	1.22
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	0.00	0.49	0.08	0.44	0.49
d, Delay for Lane Group [s/veh]	0.00	106.96	2.84	4.80	5.34
Lane Group LOS	A	F	A	A	A
Critical Lane Group	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.00	5.28	0.30	6.14	7.33
50th-Percentile Queue Length [ft/ln]	0.00	132.08	7.56	153.42	183.25
95th-Percentile Queue Length [veh/ln]	0.00	9.05	0.54	10.20	11.77
95th-Percentile Queue Length [ft/ln]	0.00	226.32	13.62	254.99	294.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	106.96	106.96	106.96	2.84	4.80	4.80	5.34	5.34	5.34
Movement LOS	A	A	A	F	F	F	A	A	A	A	A	A
d_A, Approach Delay [s/veh]		0.00			106.96			4.67			5.34	
Approach LOS		A			F			A			A	
d_I, Intersection Delay [s/veh]						10.85						
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]	106.18	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	1.759	0.000	0.000	0.000
Crosswalk LOS	A	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	217	217	1713	1713
d_b, Bicycle Delay [s]	91.36	91.36	2.37	2.37
I_b,int, Bicycle LOS Score for Intersection	1.560	1.698	2.682	2.718
Bicycle LOS	A	A	B	B

Sequence

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

SG: 2 201s
SG: 4 29s
SG: 102 12s
SG: 6 201s
SG: 8 29s

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave

Control Type:	Two-way stop	Delay (sec / veh):	0.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.052

Intersection Setup

Name	W Cotati Ave		SR 116		SR 116	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	W Cotati Ave		SR 116		SR 116	
Base Volume Input [veh/h]	6	34	699	5	63	617
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	23	0	0	52
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	34	722	5	63	669
Peak Hour Factor	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	9	198	1	17	184
Total Analysis Volume [veh/h]	7	37	793	5	69	734
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.08	0.01	0.00	0.07	0.01
d_M, Delay for Movement [s/veh]	37.87	15.26	0.00	0.00	9.41	0.00
Movement LOS	E	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.45	0.45	0.00	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	11.34	11.34	0.00	0.00	5.78	5.78
d_A, Approach Delay [s/veh]	18.65		0.00		0.81	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.89					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave-Village Ave

Control Type:	Signalized	Delay (sec / veh):	12.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.464

Intersection Setup

Name	W Cotati Ave			Village Ave			SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	0	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	25.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	W Cotati Ave			Village Ave			SR 116			SR 116		
Base Volume Input [veh/h]	23	8	80	42	3	9	41	961	16	74	1151	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	31	0	0	69	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	8	80	42	3	9	41	992	16	74	1220	180
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]	6	2	20	11	1	2	10	248	4	19	305	45
Total Analysis Volume [veh/h]	23	8	80	42	3	9	41	992	16	74	1220	180
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	1	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	5	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	23	14	9	14	0	9	53	0	14	58	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No		No	No		No	No		No	
Maximum Recall		No	No		No	No		No	No		No	
Pedestrian Recall		No	No		No	No		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	25	7	7	4	57	57	10	63	63
g / C, Green / Cycle	0.13	0.28	0.08	0.08	0.04	0.63	0.63	0.11	0.70	0.70
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.03	0.01	0.03	0.27	0.27	0.06	0.38	0.39
s, saturation flow rate [veh/h]	1468	1611	1309	1651	1309	1870	1860	1309	1870	1787
c, Capacity [veh/h]	297	455	105	136	80	1176	1169	142	1300	1242
d1, Uniform Delay [s]	34.76	24.51	44.50	38.17	45.00	8.50	8.50	43.20	6.76	6.81
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, 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]	0.11	0.20	2.48	0.28	5.07	1.15	1.16	2.96	1.67	1.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.08	0.19	0.40	0.09	0.51	0.43	0.43	0.52	0.55	0.55
d, Delay for Lane Group [s/veh]	34.87	24.72	46.98	38.45	50.07	9.65	9.66	46.16	8.43	8.60
Lane Group LOS	C	C	D	D	D	A	A	D	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.46	1.45	1.01	0.25	1.02	4.34	4.31	1.70	5.24	5.14
50th-Percentile Queue Length [ft/ln]	11.40	36.21	25.29	6.32	25.52	108.39	107.84	42.62	131.03	128.44
95th-Percentile Queue Length [veh/ln]	0.82	2.61	1.82	0.46	1.84	7.75	7.72	3.07	9.00	8.86
95th-Percentile Queue Length [ft/ln]	20.51	65.18	45.51	11.38	45.94	193.76	192.99	76.72	224.89	221.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.87	24.72	24.72	46.98	38.45	38.45	50.07	9.66	9.66	46.16	8.50	8.60
Movement LOS	C	C	C	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	26.82			45.09			11.24			10.41		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	12.10											
Intersection LOS	B											
Intersection V/C	0.464											

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 Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	222	1089	1200
d_b, Bicycle Delay [s]	18.05	35.56	9.34	7.20
I_b,int, Bicycle LOS Score for Intersection	1.743	1.649	2.425	2.776
Bicycle LOS	A	A	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 1 14s SG: 2 53s SG: 3 9s SG: 4 14s
SG: 5 9s SG: 6 58s SG: 8 ov 23s

Intersection Level Of Service Report
Intersection 3: SR 116/New North-South Street

Control Type:	Signalized	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.360

Intersection Setup

Name							SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			No		

Volumes

Name							SR 116			SR 116		
Base Volume Input [veh/h]	2	8	31	82	3	23	131	876	5	47	762	351
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	31	0	59	26	0	0	0	0	69
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	2	8	31	113	3	82	157	876	5	47	762	420
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]	1	2	8	28	1	21	39	219	1	12	191	105
Total Analysis Volume [veh/h]	2	8	31	113	3	82	157	876	5	47	762	420
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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	No
Signal Coordination Group	-
Cycle Length [s]	80
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Overlap	ProtPer	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	10	30	0	10	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	26	0	9	26	0	22	25	0	20	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	10	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		Yes	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	R	L	C	C	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80
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
I1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	16	16	10	9	49	49	3	44
g / C, Green / Cycle	0.19	0.19	0.19	0.13	0.11	0.61	0.61	0.04	0.54
(v / s)_i Volume / Saturation Flow Rate	0.01	0.03	0.05	0.05	0.09	0.24	0.24	0.03	0.21
s, saturation flow rate [veh/h]	1653	1407	1476	1589	1781	1870	1866	1781	3560
c, Capacity [veh/h]	407	296	464	199	198	1147	1144	75	1936
d1, Uniform Delay [s]	26.11	27.00	27.56	32.31	34.70	7.85	7.85	37.77	10.61
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.02	0.19	0.17	1.36	7.31	0.98	0.98	8.67	0.60
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

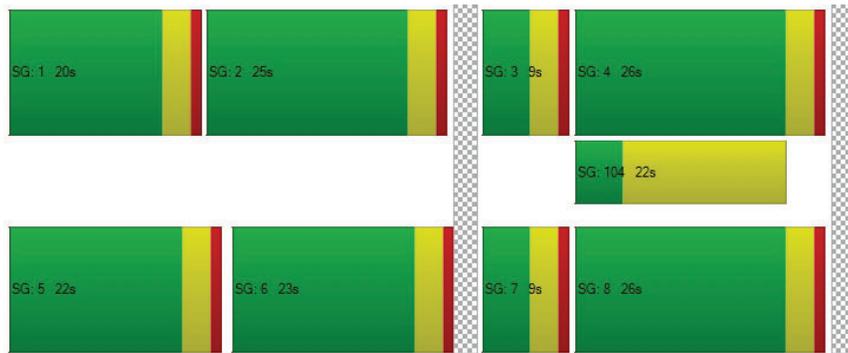|	C	L	C	R	L	C	C	L	C
X, volume / capacity	0.02	0.13	0.17	0.41	0.79	0.38	0.38	0.63	0.39
d, Delay for Lane Group [s/veh]	26.14	27.19	27.73	33.67	42.01	8.83	8.83	46.44	11.21
Lane Group LOS	C	C	C	C	D	A	A	D	B
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.15	0.61	1.27	1.51	3.19	3.20	3.20	1.04	3.34
50th-Percentile Queue Length [ft/ln]	3.85	15.16	31.78	37.71	79.85	80.09	79.95	25.94	83.51
95th-Percentile Queue Length [veh/ln]	0.28	1.09	2.29	2.72	5.75	5.77	5.76	1.87	6.01
95th-Percentile Queue Length [ft/ln]	6.92	27.28	57.20	67.88	143.74	144.17	143.91	46.68	150.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.14	26.14	0.00	27.55	27.73	33.67	42.01	8.83	8.83	46.44	11.21	0.00
Movement LOS	C	C		C	C	C	D	A	A	D	B	
d_A, Approach Delay [s/veh]		6.37			30.09			13.85			13.26	
Approach LOS		A			C			B			B	
d_I, Intersection Delay [s/veh]						15.14						
Intersection LOS						B						
Intersection V/C						0.360						

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	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	31.54	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	2.861	0.000
Crosswalk LOS	F	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	774	774	525	475
d_b, Bicycle Delay [s]	15.04	15.04	21.79	23.29
I_b,int, Bicycle LOS Score for Intersection	1.576	1.886	2.416	2.227
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 1 20s
SG: 2 25s
SG: 3 9s
SG: 4 26s
SG: 104 22s
SG: 5 22s
SG: 6 23s
SG: 7 9s
SG: 8 26s

Intersection Level Of Service Report
Intersection 2: SR 116 / W Cotati Ave-Village Ave

Control Type:	Signalized	Delay (sec / veh):	35.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.732

Intersection Setup

Name	W Cotati Ave			Village Ave			SR 116			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Speed [mph]	25.00			30.00			45.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name	W Cotati Ave			Village Ave			SR 116					
Base Volume Input [veh/h]	28	6	127	281	10	110	83	1501	36	142	1404	167
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	12	0	0	35	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	84	0	0	79	0	0	2	0	0	9
Total Hourly Volume [veh/h]	28	6	43	281	10	31	83	1513	34	142	1439	158
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]	7	2	11	70	3	8	21	378	9	36	360	40
Total Analysis Volume [veh/h]	28	6	43	281	10	31	83	1513	34	142	1439	158
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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	No
Signal Coordination Group	-
Cycle Length [s]	70
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	1	7	4	5	5	2	0	1	6	0
Auxiliary Signal Groups			1,8		4,5							
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	0	0	5	0	0	0	0	0	0	0	0
Maximum Green [s]	30	90	90	30	90	90	90	90	0	90	90	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	23	12	9	14	8	8	35	0	12	39	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	5	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	10	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No		No	No	No	Yes		No	Yes	
Maximum Recall		No	No		No	No	No	No		No	No	
Pedestrian Recall		No	No		No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	31	15	23	4	31	31	8	35	35
g / C, Green / Cycle	0.27	0.44	0.21	0.33	0.06	0.44	0.44	0.11	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.21	0.02	0.06	0.41	0.42	0.11	0.43	0.44
s, saturation flow rate [veh/h]	1410	1619	1356	1650	1306	1870	1856	1306	1870	1806
c, Capacity [veh/h]	507	714	325	539	121	832	825	195	938	906
d1, Uniform Delay [s]	19.02	11.29	30.51	16.29	34.95	18.47	18.51	33.45	15.27	15.52
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	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]	0.04	0.04	7.39	0.06	6.99	24.72	25.85	5.27	11.01	13.15
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

	L	C	L	C	L	C	C	L	C	C
X, volume / capacity	0.06	0.07	0.86	0.08	0.69	0.93	0.94	0.73	0.86	0.88
d, Delay for Lane Group [s/veh]	19.07	11.33	37.89	16.35	41.95	43.19	44.36	38.72	26.27	28.67
Lane Group LOS	B	B	D	B	D	D	D	D	C	C
Critical Lane Group	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.33	0.42	5.33	0.44	1.62	15.32	15.52	2.71	12.49	12.97
50th-Percentile Queue Length [ft/ln]	8.37	10.56	133.13	10.94	40.50	382.99	387.92	67.70	312.34	324.17
95th-Percentile Queue Length [veh/ln]	0.60	0.76	9.11	0.79	2.92	21.74	21.98	4.87	18.29	18.87
95th-Percentile Queue Length [ft/ln]	15.06	19.01	227.75	19.70	72.90	543.47	549.43	121.86	457.26	471.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.07	11.33	11.33	37.89	16.35	16.35	41.95	43.76	44.36	38.72	27.33	28.67
Movement LOS	B	B	B	D	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	14.14			35.15			43.68			28.38		
Approach LOS	B			D			D			C		
d_I, Intersection Delay [s/veh]	35.29											
Intersection LOS	D											
Intersection V/C	0.732											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	35.0	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	8.77	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	2.329	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	885	514	885	999
d_b, Bicycle Delay [s]	10.89	19.34	10.89	8.77
I_b,int, Bicycle LOS Score for Intersection	1.825	2.221	2.906	3.002
Bicycle LOS	A	B	C	C

Sequence
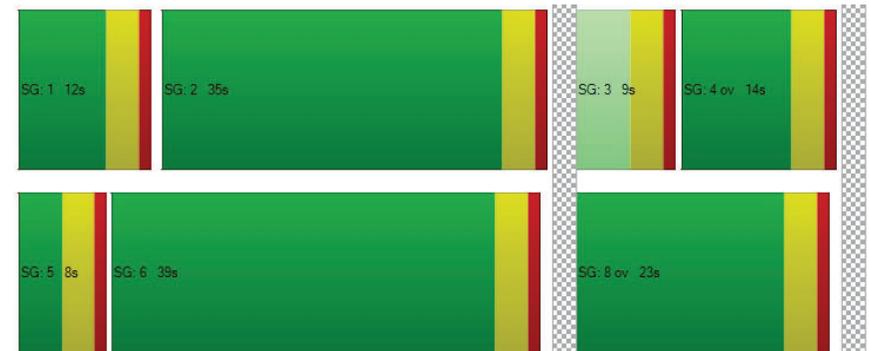
Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 1 12s SG: 2 35s SG: 3 9s SG: 4 ov 14s
SG: 5 8s SG: 6 39s SG: 8 ov 23s

Intersection Level Of Service Report
Intersection 3: SR 116/New North-South Street

Control Type:	Signalized	Delay (sec / veh):	26.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.140

Intersection Setup

Name							SR 116			SR 116		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							SR 116			SR 116		
Base Volume Input [veh/h]	39	5	115	461	9	210	111	1040	37	95	1219	238
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	12	0	23	14	0	0	0	0	35
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	5	115	473	9	233	125	1040	37	95	1219	273
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	1	29	118	2	58	31	260	9	24	305	68
Total Analysis Volume [veh/h]	39	5	115	473	9	233	125	1040	37	95	1219	273
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	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	No
Signal Coordination Group	-
Cycle Length [s]	110
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Overlap	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	0	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	10	10	5	10	0	0	10	0	5	10	0
Maximum Green [s]	10	22	22	10	103	0	0	27	0	7	38	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	26	26	9	26	0	0	62	0	13	75	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	17	17	0	17	0	0	21	0	0	17	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No	No	Yes	No			No		No	No	
Maximum Recall	No	No	No	No	No			No		No	No	
Pedestrian Recall	No	No	No	No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
I1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	34	31	31	22	59	59	59	8	71	71
g / C, Green / Cycle	0.28	0.31	0.28	0.28	0.20	0.54	0.54	0.54	0.07	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	1.22	0.07	0.17	0.37	0.15	0.35	0.29	0.29	0.05	0.41	0.42
s, saturation flow rate [veh/h]	36	1589	1271	731	1589	353	1870	1847	1781	1870	1754
c, Capacity [veh/h]	129	487	334	335	320	155	1008	996	123	1205	1131
d1, Uniform Delay [s]	35.50	28.58	39.94	42.59	41.21	45.03	16.47	16.48	50.45	11.74	11.94
k, delay calibration	0.50	0.28	0.11	0.11	0.11	0.50	0.50	0.50	0.14	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	1.00
d2, Incremental Delay [s]	7.14	0.65	1.99	4.85	3.25	42.93	2.07	2.09	13.06	2.54	2.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.24	0.63	0.81	0.73	0.81	0.54	0.54	0.77	0.63	0.65
d, Delay for Lane Group [s/veh]	42.64	29.23	41.92	47.44	44.46	87.96	18.54	18.57	63.51	14.28	14.85
Lane Group LOS	D	C	D	D	D	F	B	B	E	B	B
Critical Lane Group	Yes	No	No	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.21	2.36	3.56	5.80	6.18	5.23	8.59	8.50	2.95	10.20	10.06
50th-Percentile Queue Length [ft/ln]	30.29	59.07	88.89	144.93	154.44	130.68	214.79	212.59	73.64	254.91	251.47
95th-Percentile Queue Length [veh/ln]	2.18	4.25	6.40	9.75	10.25	8.98	13.40	13.29	5.30	15.43	15.26
95th-Percentile Queue Length [ft/ln]	54.52	106.32	160.01	243.64	256.35	224.41	334.97	332.15	132.55	385.84	381.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.64	42.64	29.23	44.98	47.44	44.46	87.96	18.55	18.57	63.51	14.50	14.85
Movement LOS	D	D	C	D	D	D	F	B	B	E	B	B
d_A, Approach Delay [s/veh]		32.94			44.84			25.77			17.49	
Approach LOS		C			D			C			B	
d_I, Intersection Delay [s/veh]						26.22						
Intersection LOS						C						
Intersection V/C						1.140						

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	0.00
d_p, Pedestrian Delay [s]	46.42	46.42	46.42	46.42
I_p,int, Pedestrian LOS Score for Intersectio	2.215	2.593	3.161	3.933
Crosswalk LOS	B	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	563	563	1054	1290
d_b, Bicycle Delay [s]	28.42	28.42	12.33	6.94
I_b,int, Bicycle LOS Score for Intersection	1.822	2.739	2.551	2.869
Bicycle LOS	A	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SG: 1 ov 13s   SG: 2 62s
SG: 102 26s
SG: 3 9s   SG: 4 26s
SG: 104 22s
SG: 6 75s
SG: 106 22s
SG: 7 9s   SG: 8 26s
SG: 108 22s