

Appendix L – Transportation



Draft-Final Report

Transportation Impact Study for the Clearlake Airport Redevelopment Area Project

Prepared for the
City of Clearlake

October 21, 2025



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Executive Summary

The proposed project includes redevelopment of the former airport site in the City of Clearlake on approximately 54 acres located between SR 53 and Old Highway 53. As part of the project, 18th Avenue would be extended to Old Highway 53 and three new intersections would be constructed on Old Highway 53 at 18th Avenue, Airport Road, and South Market Street. The proposed project includes a mix of residential, commercial/retail, hotel, public park, and healthcare components across three distinct Planned Development Zones.

The proposed development would be expected to result in 12,284 new primary trips per weekday with 831 trips occurring during the a.m. peak hour and 867 occurring during the p.m. peak hour. On a typical Saturday, the development is estimated to result in 15,668 new primary trips with 1,607 occurring during the peak hour. Compared to the land use assumptions analyzed for the project site in the City's General Plan consisting of a 540,000 square foot regional shopping center, the proposed development would be expected to result in fewer daily trips on weekdays and Saturdays, and fewer trips during all peak hours except for the weekday a.m. peak hour.

The proposed project would not conflict with any relevant plans and policies, including the City's General Plan, the *2022 Lake County Regional Transportation Plan (RTP) and Active Transportation Plan (ATP)*, the *State Route 53 Corridor Local Circulation Study*, and the *Lake Transit Authority Bus Passenger Facility Plan* and would therefore have a less-than-significant impact with incorporation of the following mitigations.

- Provide sharrow markings or Class II bicycle lanes on Airport Road;
- Incorporate a minimum of 290 bicycle parking spaces throughout the site; and
- Coordinate the design details for the relocated bus stop at Old Highway 53/18th Avenue with Lake Transit Authority.

The proposed development would be expected to have a less-than-significant impact on VMT based on data included in the web-based VMTIndex tool, its centralized location near the center of the region's largest housing supply, and the mixed-use nature of the project. Notably, the project will improve destination accessibility to retail and medical uses for residents of Lake County and reduce the number of interregional trips residents must make to nearby counties, including Mendocino, Sonoma, and Napa, which would have a beneficial impact on VMT.

With the implementation of the following mitigations, the proposed development would not create any new hazards or introduce incompatible uses to the roadway system and would therefore have a less-than-significant impact on safety.

- Any new signage, monuments, or other structures shall be kept out of the vision triangles of drivers at the proposed access points to the development.
- Left-turn lanes shall be provided on Old Highway 53 at 18th Avenue Extension, Airport Road, and South Market Street.
- Dashed green bicycle conflict markings shall be installed in the bike lane on Old Highway 53 for the last 100 feet approaching South Market Street, Airport Road, and 18th Avenue.
- When the development threshold triggers the need for dedicated left-turn lanes on the 18th Avenue approaches to the intersection with SR 53, the eastbound left-turn lane shall be designed with at least 165 feet of storage space. Other new turn lanes may be installed with 100 feet of storage space for left-turning traffic.
- An eastbound right-turn overlap phase shall be provided at SR 53/Dam Road-Old Highway 53. The eastbound left-turn lane shall be extended to 180 feet and the right-turn lane extended to 205 feet.
- An enhanced pedestrian crossing shall be provided on the south leg of the Old Highway 53/18th Avenue Extension intersection.
- RRFBs shall be installed at all proposed uncontrolled crosswalks and at the existing crosswalk on Old Highway 53 at the Clearlake Community School.

- The proposed crosswalk on the east leg of 18th Avenue Extension/North Market Street shall be combined with the crosswalk proposed on the west leg of the eastern driveways, and relocated midway between the intersection and driveways.
- LPIs, high visibility crosswalk markings, and advance limit lines shall be installed at the existing crosswalks at SR 53/18th Avenue and SR 53/Dam Road-Old Highway 53.
- Class II bike lanes shall be provided on the eastbound and westbound approaches to SR 53/18th Avenue and dashed green conflict markings installed through the intersection. The bike lanes shall be transitioned to the left side of the right-turn lanes until the 18th Avenue approaches are restriped to include dedicated left-turn lanes.
- The existing eastbound bike lane on Old Highway 53 shall be extended to the intersection with SR 53 and transitioned to the left side of the right-turn lane.

Emergency access and on-site circulation are anticipated to function acceptably with incorporation of applicable design standards into the site layout.

Traffic from the proposed project is expected to have a less-than-significant impact on emergency response times, with potential improvement of response times to the dwellings on the west side of SR 53 due to the extension of 18th Avenue to Old Highway 53.

Introduction

This report presents an analysis of the potential transportation impacts that would be associated with the proposed Clearlake Airport Redevelopment Area project to be located at the site of the former Clearlake Airport in the City of Clearlake. The transportation impact study was completed in accordance with the criteria established by the City of Clearlake, reflects a scope of work approved by City and Caltrans staff, and is consistent with standard traffic engineering techniques.

Prelude

The purpose of a transportation impact study (TIS) is to provide City staff and policy makers with data that they can use to make an informed decision regarding the potential transportation impacts of a proposed project, and any associated improvements that would be required to mitigate these impacts to an acceptable level under the California Environmental Quality Act (CEQA). Impacts associated with access for pedestrians, bicyclists, and to transit; the vehicle miles traveled (VMT) generated by the project; potential safety concerns such as increased queuing in dedicated turn lanes, adequacy of sight distance, need for turn lanes, and need for additional right-of-way controls; and emergency access are addressed in the context of the CEQA criteria.

Applied Standards and Criteria

The report is organized to provide background data that supports the various aspects of the analysis, followed by the assessment of CEQA issues. The CEQA criteria evaluated are as follows.

Would the project:

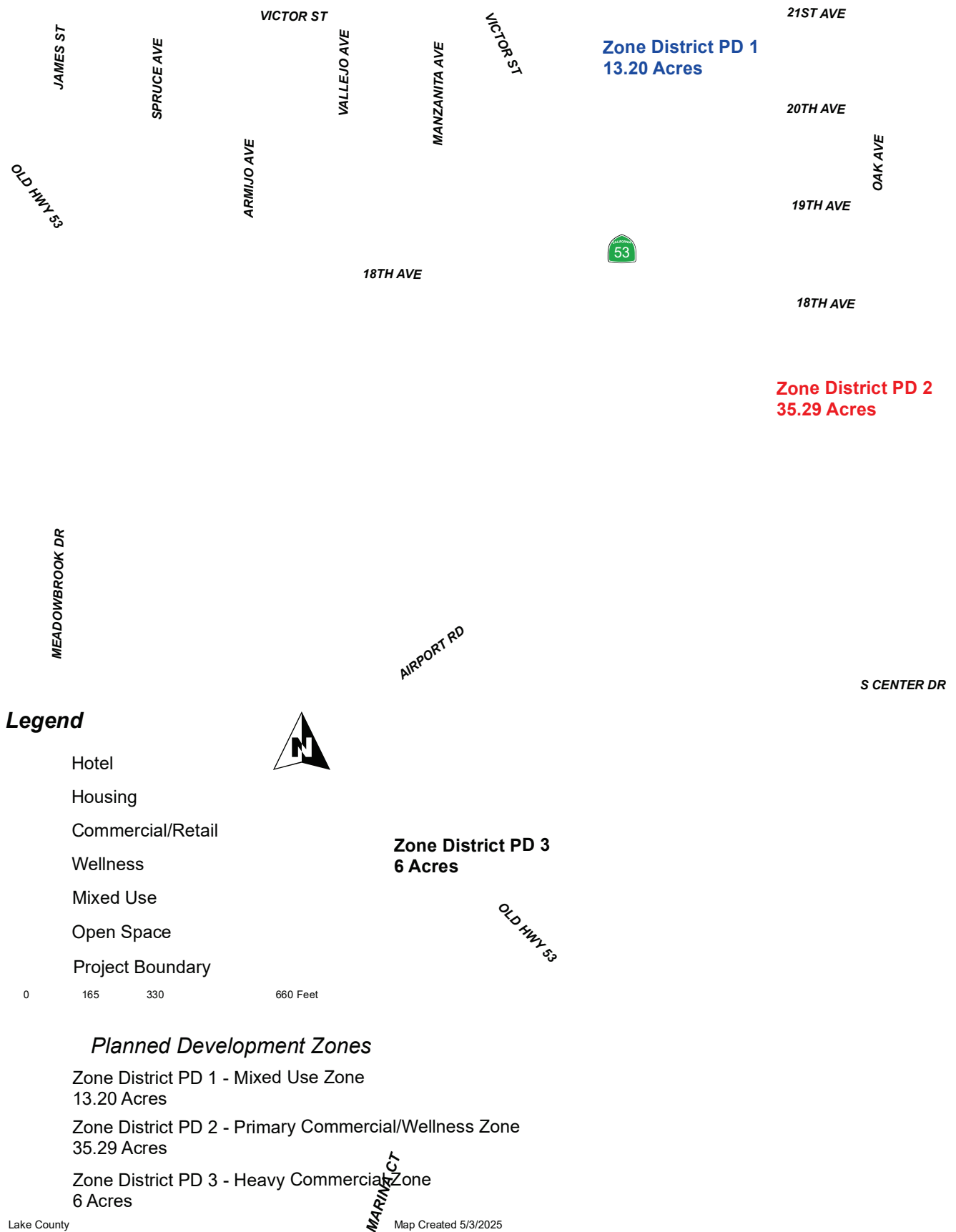
- a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?
- b. Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b) related to Vehicle Miles Traveled (VMT)?
- c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- d. Result in inadequate emergency access?

Project Profile

The proposed project includes redevelopment of the former airport site in the City of Clearlake on approximately 54 acres located between SR 53 and Old Highway 53. Access to and from the state highway system would be primarily via the intersections of SR 53 with 18th Avenue and Dam Road-Old Highway 53. As part of the project, 18th Avenue would be extended to Old Highway 53 and three new intersections would be constructed on Old Highway 53 at 18th Avenue, Airport Road, and South Market Street. The proposed project includes a mix of residential, commercial/retail, hotel, public park, and healthcare components. The project site has been divided into three distinct Planned Development (PD) Zones as follows:

- PD-1 – Mixed Use Zone, 13.2 acres
- PD-2 – Primary Commercial and Wellness Zone, 35.29 acres
- PD-3 – Heavy Commercial Zone, 6 acres

A conceptual layout of the site showing the three PD zones and proposed circulation scheme is shown in Figure 1.



Transportation Impact Study for the Clearlake Airport Redevelopment Area Project
Figure 1 – Conceptual Site Layout and Planned Development Zones

Transportation Setting

Study Area and Periods

The study area varies depending on the topic. For pedestrian trips it consists of all streets within a half mile of the project site that would lie along primary routes of pedestrian travel, or those leading to nearby generators or attractors. For bicycle trips it consists of all streets within one mile of the project site that would lie along primary routes of bicycle travel. For the safety and operational analyses, the study area was selected with input from City and Caltrans staff and consists of the following intersections, two of which exist and four that would be constructed as part of the project.

1. Old Highway 53/18th Avenue Extension (Proposed Intersection)
2. SR 53/18th Avenue
3. Old Highway 53/Airport Road (Proposed Intersection)
4. Old Highway 53/South Market Street (Proposed Intersection)
5. SR 53/Dam Road
6. Market Street/Airport Road-Festival Lane (Proposed Intersection)

Operating conditions during the weekday a.m. and p.m. peak periods as well as the Saturday midday peak period were evaluated to capture the highest trip generation potential for the proposed use and the highest volumes on the local transportation network. The weekday morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home-to-work or -school commute while the weekday p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute. The weekend midday peak typically occurs between 1:00 and 3:00 p.m. and reflects the highest levels of traffic associated with retail projects and recreational traffic on SR 53. New turning movement counts were obtained for the existing study intersections on Thursday, September 5 and Saturday, September 7, 2024, during typical traffic conditions and while local schools were in session.

Study Intersections

Old Highway 53/18th Avenue Extension is a proposed tee intersection that would be constructed with the project approximately 300 feet south of Lakeview Way. The intersection would be stop-controlled on the westbound 18th Avenue approach, and a southbound left-turn lane would be provided on Old Highway 53.

SR 53/18th Avenue is an existing four-legged signalized intersection with protected left-turn phasing on the northbound and southbound SR 53 approaches and permitted left-turn phasing on the eastbound and westbound approaches. Crosswalks with pedestrian phasing are provided on all four legs and curb ramps with truncated domes serve the crosswalks.

Old Highway 53/Airport Road is a proposed tee intersection that would be constructed as part of the project at the location of the existing unimproved Airport Road. The intersection would be stop-controlled on the minor street Airport Road approach.

Old Highway 53/South Market Street is a proposed tee intersection to be constructed with the project approximately 250 feet south of Highlands Harbor Drive. The intersection would be stop-controlled on the South Market Street approach, which would include separate left- and right-turn lanes.

SR 53/Dam Road is an existing four-legged signalized intersection with protected left-turn phasing on all four approaches. The westbound right-turn movement operates as an overlap to the southbound left-turn movement. The north and south legs are composed of SR 53, the east leg is Dam Road, and the west leg is Old Highway 53. Crosswalks are marked across all four legs and curb ramps with truncated domes are provided on all four corners.

Market Street/Airport Road-Festival Lane is a proposed four-legged all-way stop-controlled intersection to be located near the center of the project site. The intersection would have dedicated left-turn lanes on the Market Street approaches and marked crosswalks on all four legs.

The locations of the study intersections along with the existing and proposed lane configurations and controls are shown in Figure 2.

Study Roadway

Old Highway 53 runs on a skewed alignment, though it is mostly oriented north to south and has one travel lane in each direction plus Class II bicycle lanes. The roadway has a posted speed limit of 35 miles per hour (mph) in the project vicinity. Based on count data collected on Thursday, September 5, and Saturday, September 7, 2024, the roadway has an average daily traffic (ADT) volume of approximately 6,000 on weekdays and 5,000 vehicles on weekends.

Existing Transportation Facilities

Existing and Planned 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, the sidewalk network surrounding the project site is limited.

- **Old Highway 53** – Intermittent sidewalk coverage is provided on either side of Old Highway 53 west of the project site. Overhead lighting is provided near the Clearlake Creativity School but it is not provided elsewhere in the project vicinity.
- **18th Avenue** – Sidewalks are not currently provided on 18th Avenue. As contained in the *Active Transportation Plan for Lake County*, Lake County/City Area Planning Council, 2016, sidewalks are proposed along 18th Avenue east of SR 53.
- **Dam Road** – Sidewalks with overhead street lighting are provided on both sides of Dam Road to the east of SR 53.
- **SR 53** – Sidewalks are not provided or planned along SR 53, though crosswalks with pedestrian phasing and curb ramps exist on all four legs of the signalized intersections at 18th Avenue and Dam Road.

Existing and Planned Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2020, 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.

In the study area, Class II bike lanes exist on Old Highway 53 and segments of 18th Avenue, Dam Road, Garner Avenue, and Phillips Avenue. Additional Class II bike lanes are planned on Boyles Avenue and Lakeshore Drive. A Class III bike route is planned on 40th Avenue between SR 53 and Phillips Avenue. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area. Table 1 summarizes the existing and planned bicycle facilities in the project vicinity as contained in the *Active Transportation Plan for Lake County*, 2016.

LEGEND
Existing Intersection
Proposed Intersection
Proposed Street
North
Not to Scale

18th Ave

SR 53

Old Highway 53

Dam Rd

Status Facility	Class	Length (miles)	Begin Point	End Point
Existing				
18 th Ave	II	0.64	SR 53	Boyles Ave
Dam Rd	II	0.50	Dam Rd Extension	Southern City Limits
Dam Rd Extension	II	0.25	South Center Dr	Dam Rd
Garner Ave	II	0.64	32 nd Ave	18 th Ave
Old Highway 53	II	2.7	Olympic Dr	Dam Rd
Phillips Ave	II	0.36	40 th Ave	32 nd Ave
Planned				
Boyles Ave	II	0.82	36 th Ave	18 th Ave
Lakeshore Dr	II	0.45	Old Highway 53	SR 53
40 th Ave	III	0.42	SR 53	Phillips Ave

Source: *Active Transportation Plan for Lake County*, Lake County/City Area Planning Council, 2016

Existing Transit Facilities

Lake Transit provides fixed route bus service in the City of Clearlake and throughout Lake County. Lake Transit Route 10 provides loop service throughout the western portion of the city and stops on Old Highway 53 at the location of the proposed intersection with the 18th Avenue extension. Route 11 provides loop service in the central portion of the city and stops on 18th Avenue near its intersection with SR 53. All bus routes within walking distance of the project site are listed below and have a stop outside the Walmart on Dam Road.

Transit Agency Route	Distance to Stop (mi) ¹	Days of Operation	Service Time	Frequency	Connections
Lake Transit					
Route 1	0.3	Mon-Fri Sat-Sun	6:00 AM – 6:00 PM 9:00 AM – 2:00 PM	1 – 2 hrs 2 hrs	Walmart, Woodland College, Sutter Lakeside Hospital
Route 3	0.3	Mon-Fri Sat-Sun	6:10 AM – 4:50 PM 7:55 AM, 12:45 PM	2 – 5 hrs 5 hrs	Walmart, Twin Pine Casino, St. Helena Hospital
Route 4	0.3	Mon-Fri Sat-Sun	6:00 AM – 5:00 PM 7:00 AM, 11:00 AM	1 – 3 hrs 4 hrs	Walmart, Mendocino College, Lakeport City Hall
Route 10	0.1	Mon-Fri Sat-Sun	6:00 AM – 7:00 PM 9:00 AM – 4:00 PM	1 hr	Walmart, Clearlake City Hall, Clearlake Park Post Office
Route 11	0.2	Mon-Fri Sat-Sun	6:00 AM – 7:00 PM 9:00 AM – 4:00 PM	1 hr	Walmart, Burns Valley Mall, Adventist Health Hospital

Note: ¹ Defined as the shortest walking distance between the project site and the nearest bus stop

Source: [Lake Transit Authority](#)

Two bicycles can be carried on most Lake Transit buses. Bike rack space is available on a first come, first served basis. Additional bicycles are allowed on Lake Transit buses at the discretion of the driver.

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. Lake Transit Dial-A-Ride and Flex Stops are designed to serve the needs of individuals with disabilities within Clearlake.

Collision History

The collision history for the two existing study intersections was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol (CHP) as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current complete five-year period available at the time of the analysis was July 1, 2019, through June 30, 2024.

As presented in Table 3, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2022 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 calculated collision rates for the study intersections are less than the statewide averages for similar facilities. The collision rate calculations are provided in Appendix A.

Table 3 – Collision Rates for the Study Intersections

Study Intersection	Number of Collisions (2019-2024)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
2. SR 53/18 th Ave	6	0.14	0.33
5. SR 53/Dam Rd-Old Highway 53	17	0.28	0.33

Note: c/mve = collisions per million vehicles entering

Project Data

The proposed project includes redevelopment of the former airport site in the City of Clearlake into a mix of residential, commercial/retail, public park, and healthcare uses. Although the type and intensity of uses may vary slightly within each PD zone, a Preferred Concept was developed that represents the maximum development potential for the site as a whole. The Preferred Concept was therefore used as the basis for estimating the trip generation and evaluating potential transportation impacts associated with the project. The site plan for the Preferred Concept is shown in Figure 3.

General Plan Trip Generation

The *City of Clearlake 2040 General Plan* identifies the area that includes the airport site as a future development zone. The area was previously proposed to be developed as a shopping center with a total area of 540,000 square feet. As a comparison to the current Preferred Concept for the site, the trip generation used for the General Plan analysis was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 11th Edition, 2021, for the “Shopping Center (>150k)” land use (LU #820).

Pass-by and Diverted Trips

A portion of traffic associated with retail, commercial, automobile fueling, and fast-food restaurant uses is typically drawn from existing traffic on nearby streets. These vehicle trips are not considered “new,” but are instead comprised of drivers who are already driving on the adjacent street system and choose to make an interim stop and are referred to as “pass-by.” The percentage of these pass-by trips was developed based on information provided in the *Trip Generation Manual*. Rates for both the weekday a.m. and p.m. peak periods are available for fast-food restaurants and gasoline stations, but only p.m. peak hour rates are included for retail commercial land uses. Due to the likelihood of retail commercial trips during the a.m. peak being exclusively employee or delivery trips before the retail uses open to the public, no deductions for pass-by were given during the weekday a.m. peak hour. Additionally, the Manual lacks Saturday peak hour pass-by rates so they were developed separately. The Saturday commercial retail pass-by rate was assumed to be 10 percent while the Saturday restaurant and gasoline station pass-by rates were derived from the average of their respective weekday a.m. and p.m. peak hour pass-by rates.

In the case of the proposed project, there is no direct access from the main thoroughfare (SR 53), so all trips considered “pass-by” would be diverted from SR 53 onto adjacent streets first then to the site’s street network and back again to SR 53, primarily using 18th Avenue and Old Highway 53 as a couplet. As a result, the pass-by deductions were applied as diverted trips exclusively from SR 53 after accounting for internal capture deductions.

Total Trip Generation

Based on these rates and with the assumptions for pass-by applied, the project site would have generated an estimated 14,189 primary trips per weekday with 323 trips occurring during the a.m. peak hour and 1,304 trips during the p.m. peak hour. On a typical Saturday, the project would have generated 17,866 daily primary trips with 1,687 trips occurring during the peak hour. The results of the trip generation calculations are presented in Table 4 for weekdays and in Table 5 for Saturdays.

Table 4 – Trip Generation Summary – General Plan Weekday

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Shopping Center	540 ksf		19,985		454	281	173		1,836	880	956
<i>Pass-by Trips</i>		-29%	-5,796	-29%	-131	-81	-50	-29%	-532	-255	-277
Total Primary Trips			14,189		323	200	123		1,304	625	679

Note: ksf = 1,000 square feet

Table 5 – Trip Generation Summary – General Plan Saturday

Land Use	Units	Daily		Peak Hour			
		Rate	Trips	Rate	Trips	In	Out
Shopping Center	540 ksf		25,164		2,376	1,237	1,139
<i>Pass-by Trips</i>		-29%	-7,298	-29%	-689	-359	-330
Total Primary Trips			17,866		1,687	878	809

Note: ksf = 1,000 square feet

Preferred Concept Trip Generation

The anticipated trip generation for the Preferred Concept development depicted in Figure 3 was estimated using standard rates in the ITE *Trip Generation Manual* for the following land use categories, as these descriptions most closely match the various components of the project.

- Single-Family Attached Housing (Townhomes), Land Use #215
- Hotel, Land Use #310
- Multi-Family Housing, Land Use #221
- Shopping Center (General Commercial), Land Use #820
- Fast-Food Restaurant with Drive-Through, Land Use #934
- Fast-Food Restaurant without Drive-Through, Land Use #933
- Public Parks, Land Use #411
- Medical Office, Land Use #720
- Hospital, Land Use #610
- Convenience Store/Gas Station, Land Use #945

It is noted that “Convenience Store/Gas Station” (LU# 945) lacks daily Saturday rates, which were derived instead using the proportion of weekday daily to weekday a.m. peak hour trips based on the projected Saturday peak hour trips.

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 this project, would consist of residents patronizing adjacent retail and restaurant uses, as well as employees of nonresidential uses patronizing other nonresidential uses (such as employees of a major retail anchor or medical uses eating at adjacent restaurants). It is expected that most of these trips would be made by walking, and the few that would be made by automobile would only travel within the site and not affect the adjacent street network. To estimate the internal capture percentages for the housing, restaurant, hotel, and commercial land uses, the NCHRP 684 Internal Trip Capture Estimation Tool was used, while a flat rate of 5 percent was applied to the wellness uses based on our experience with other medical projects.

Copies of the spreadsheets indicating the derivation of the internal capture rates are provided in Appendix B. Rates for the peak periods were applied individually to entering and exiting trips, while the daily reduction was based on the overall peak period reduction.

Total Trip Generation

Table 6 presents the individual components of the Preferred Concept by PD zone and the estimated number of trips expected to be generated for each use during a typical weekday and peak hour. Internal capture and diverted trip calculations are included where applicable. After all appropriate deductions are taken into account, the number of new primary project trips totals 12,284 per weekday with 831 occurring during the a.m. peak hour and 867 occurring during the p.m. peak hour. Table 7 presents the number of trips expected to be generated on a typical Saturday, which totals 15,668 primary trips per day with 1,607 occurring during the peak hour. Detailed trip generation calculations are provided in Appendix C. The only scenario in which the Preferred Concept would be expected to result in more trips than included in the General Plan analysis is the weekday a.m. peak hour.

Table 6 – Preferred Concept Trip Generation Summary - Weekday

Zone	Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
PD-1	Townhomes	14 du	7.20	101	0.48	7	2	5	0.57	8	5	3
	Hotel	75 rms	7.99	599	0.46	35	19	16	0.59	44	23	21
	MF Housing	60 du	4.54	272	0.37	22	5	17	0.39	23	14	9
	MF Housing	76 du	4.54	345	0.37	28	6	22	0.39	30	18	12
	General Commercial	4 ksf	37.01	148	0.84	3	2	1	3.40	14	7	7
	MF Housing	46 du	4.54	209	0.37	17	4	13	0.39	18	11	7
	Fast-Food, No DT	2 ksf	450.49	901	43.18	86	50	36	33.21	66	33	33
	Fast-Food, DT	2 ksf	467.48	935	44.61	89	46	43	33.03	66	34	32
PD-2	Fast-Food, DT	2 ksf	467.48	935	44.61	89	46	43	33.03	66	34	32
	General Commercial	20 ksf	37.01	740	0.84	17	10	7	3.40	68	33	35
	Public Parks	4.3 acre	0.78	3	0.02	0	0	0	0.11	0	0	0
	General Commercial	12 ksf	37.01	444	0.84	10	6	4	3.40	41	20	21
	General Commercial	6 ksf	37.01	222	0.84	5	3	2	3.40	20	10	10
	General Commercial	6 ksf	37.01	222	0.84	5	3	2	3.40	20	10	10
	General Commercial	62.4 ksf	37.01	2309	0.84	52	32	20	3.40	212	102	110
	General Commercial	62 ksf	37.01	2295	0.84	52	32	20	3.40	211	101	110
	Fast-Food, DT	2 ksf	467.48	935	44.61	89	46	43	33.03	66	34	32
	MF Housing	54 du	4.54	245	0.37	20	5	15	0.39	21	13	8
	Medical Office	67.5 ksf	36.00	2430	3.10	209	165	44	3.93	265	80	185
	Hospital	70 ksf	10.77	754	0.82	57	38	19	0.86	60	21	39

Table 6 – Preferred Concept Trip Generation Summary - Weekday

Zone	Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
PD-3	General Commercial	40.6 ksf	37.01	1503	0.84	34	21	13	3.40	138	66	72
	General Commercial	5.6 ksf	37.01	207	0.84	5	3	2	3.40	19	9	10
	Gas Station	5 ksf	624.20	3121	40.59	203	101	102	48.48	242	121	121
	Fast-Food, DT	4.4 ksf	467.48	2057	44.61	196	100	96	33.03	145	76	69
Subtotal			21,855		1,324	743	581		1,856	871	985	
Commercial/Retail Subtotal				11,211		386	213	173		985	479	506
Internal Capture			-15%	-1688	-11%	-41	-19	-22	-19%	-192	-101	-91
Restaurant Subtotal				5,763		549	288	261		409	211	198
Internal Capture			-27%	-1592	-10%	-55	-37	-18	-45%	-185	-80	-105
Residential Subtotal				1,172		94	22	72		100	61	39
Internal Capture			-41%	-481	-18%	-17	-2	-15	-64%	-64	-38	-26
Hotel Subtotal				599		35	19	16		44	23	21
Internal Capture			-48%	-286	-12%	-4	-1	-3	-83%	-37	-21	-16
Medical Subtotal				3,184		266	203	63		325	101	224
Internal Capture			-5%	-220	-5%	-13	-10	-3	-5%	-29	-9	-20
Diverted Trips – Commercial/Retail			-15%	-1381	-0%	0	0	0	-29%	-230	-110	-120
Diverted Trips – Restaurant			-53%	-2,190	-50%	-247	-126	-122	-55%	-123	-72	-51
Diverted Trips - Gasoline			-58%	-1,810	-60%	-122	-61	-61	-56%	-136	-68	-68
Net New Project Trips			12,284		831	490	341		867	376	491	

Note: du = dwelling units; ksf = 1,000 square feet; MF = multi-family; DT = drive-through

Table 7 – Preferred Concept Trip Generation Summary - Saturday

Zone	Land Use	Units	Daily		Peak Hour			
			Rate	Trips	Rate	Trips	In	Out
PD-1	Townhomes	14 du	8.76	123	0.57	8	4	4
	Hotel	75 rms	8.07	605	0.72	54	30	24
	MF Housing	60 du	4.57	274	0.39	23	12	11
	MF Housing	76 du	4.57	347	0.39	30	15	15
	General Commercial	4 ksf	46.60	186	4.40	18	9	9
	MF Housing	46 du	4.57	210	0.39	18	9	9
	Fast-Food, No DT	2 ksf	696.00	1,392	54.60	109	54	55
	Fast-Food, DT	2 ksf	616.12	1,232	55.25	111	56	55
PD-2	Fast-Food, DT	2 ksf	616.12	1,232	55.25	111	56	55
	General Commercial	20 ksf	46.60	932	4.40	88	46	42
	Public Parks	4.3 acres	122.29	526	15.24	66	31	35
	General Commercial	12 ksf	46.60	559	4.40	53	27	26

Table 7 – Preferred Concept Trip Generation Summary - Saturday

Zone	Land Use	Units	Daily		Peak Hour			
			Rate	Trips	Rate	Trips	In	Out
	General Commercial	6 ksf	46.60	280	4.40	26	14	12
	General Commercial	6 ksf	46.60	280	4.40	26	14	12
	General Commercial	62.4 ksf	46.60	2,908	4.40	275	143	132
	General Commercial	62 ksf	46.60	2,889	4.40	273	142	131
	Fast-Food, DT	2 ksf	616.12	1,232	55.25	111	56	55
	MF Housing	54 du	4.57	247	0.39	21	11	10
	Medical Office	67.5 ksf	13.78	930	3.02	204	116	88
	Hospital	70 ksf	13.76	963	1.97	138	65	73
PD-3	General Commercial	40.6 ksf	46.60	1,892	4.40	179	93	86
	General Commercial	5.6 ksf	46.60	261	4.40	25	13	12
	Gas Station	5 ksf	261.58	1,308	17.01	85	43	42
	Fast-Food, DT	4.4 ksf	616.12	2,711	55.25	243	124	119
Subtotal			23,441		2,288	1,179	1,109	
Commercial/Retail Subtotal				10,187		963	501	462
<i>Internal Capture</i>			-11.4%	-1,164	-11.4%	-110	-50	-60
Restaurant Subtotal				7,799		685	346	339
<i>Internal Capture</i>			-6.1%	-478	-6.1%	-42	-28	-14
Residential Subtotal				1,201		100	51	49
<i>Internal Capture</i>			-14%	-168	-14%	-14	-4	-10
Hotel Subtotal				605		54	30	24
<i>Internal Capture</i>			-12.9%	-78	-12.9%	-7	-2	-5
Medical Subtotal				1,893		342	181	161
<i>Internal Capture</i>			-5%	-94	-5%	-7	-2	-5
Diverted Trips – Commercial/Retail			-10%	-902	-10%	-85	-45	-40
Diverted Trips – Restaurant			-53%	-3,844	-53%	-338	-167	-171
Diverted Trips - Gasoline			-58%	-759	-58%	-49	-25	-24
Net New Project Trips				15,668		1,607	842	765

Note: du = dwelling units; ksf = 1,000 square feet

Trip Distribution

The pattern used to allocate new project trips to the surrounding street network was determined by reviewing existing turning movements, knowledge of the area and surrounding region, and anticipated travel patterns for patrons of the project. Since pass-by trips are drawn exclusively from SR 53, trip distribution percentages for pass-by trips differ from the percentages for new trips. The applied trip distribution assumptions are shown in Table 8.

Table 8 – Trip Distribution Assumptions

Route	New Trips Percent	Pass-By Percent
To/from North via Old Highway 53	18%	0%
To/from North via SR 53	36%	50%
To/from South via SR 53	36%	50%
To/from East via 18 th Ave	5%	0%
To/from East via Dam Rd	5%	0%
Total	100%	100%

Circulation System

This section addresses the first bullet point on the CEQA checklist, which relates to the potential for a project to conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Relevant Policies and Plans

The Clearlake 2040 General Plan Update includes programs and policies which require the construction of pedestrian infrastructure in new developments. Program CI 4.1.2.1 indicates that new development should construct and dedicate and/or contribute to a connected bicycle and pedestrian network that is designed to promote travel to schools, parks, and other major destinations. Policy CI 4.1.1 states that the City shall require sidewalks in new developments and Policy CD 2.1.1 notes that the City should require developers to pay for a fair share of sidewalk infrastructure improvements.

The *2022 Lake County Regional Transportation Plan (RTP) and Active Transportation Plan (ATP)* identify numerous policies for improved regional transportation conditions including for motorists, cyclists, pedestrians, and transit riders. The plan does not identify any specific projects that could potentially be affected by the proposed airport development but defers to the *State Route 53 Corridor Local Circulation Study (Corridor Study)*, March 2022, for specific improvements to SR 53.

Pedestrian recommendations in the Corridor Study include sidewalk improvements on 18th Avenue near the intersection with SR 53 to support redevelopment of the former airport site (project site) and provision of a dedicated bicycle-pedestrian overcrossing of SR 53 that connects Old Highway 53 to Center Drive. Bicycle recommendations include provision of a Class I facility on 18th Avenue to the west of SR 53 and bicycle detection at the signalized intersections of SR 53 with 18th Avenue and Old Highway 53. Recommended transit improvements include sidewalks on 18th Avenue to connect nearby bus stops to the intersections with SR 53. Roadway improvements were recommended for short-term, (two to five years), near-term (2030), and long-term (2040) conditions. Short-term recommendations include additional lanes at SR 53/18th Avenue and SR 53/Old Highway 53 to improve operations and reduce peak hour delays. Near-term recommendations include a modern roundabout at SR 53/18th Avenue and long-term recommendations include a grade-separated interchange at SR 53/18th Avenue and SR 53/Old Highway 53, though the Corridor Study acknowledges that substantial investigation and preliminary engineering would be required before the interchanges could be deemed feasible.

The *Lake Transit Authority Bus Passenger Facility Plan*, 2019, includes recommendations for system wide improvements and at specific locations including prioritization. Such recommendations include new signs, poles, benches, shelters, and bus-pullouts.

Project Impact on Pedestrian Facilities

Most project patrons, employees, and residents are expected to use a vehicle to reach the project site, though given the proximity of surrounding commercial and residential uses, it is reasonable to assume that some site users may want to walk, bicycle, and/or use transit to travel between the project site and surrounding areas. Additionally, there is potential for substantial pedestrian travel between the surrounding residential uses and commercial and restaurant uses within the Airport redevelopment site.

As shown in Figure 3, sidewalks would be provided on all streets to be constructed as part of the project as well as the east side of Old Highway 53 between Lakeview Way and SR 53, which would provide connectivity within the site and to the surrounding sidewalk network. All stop-controlled minor street approaches at project intersections would include marked crosswalks, all four legs of the all-way stop-controlled Market Street/Airport Road-Festival Lane intersection would have crosswalks, and several crossings of a street where traffic is uncontrolled are proposed on 18th Avenue, Old Highway 53, and Market Street.



Plate 1 Proposed future bicycle and pedestrian overcrossing of SR 53

The existing crosswalks at the signalized intersections of SR 53 with 18th Avenue and Dam Road would facilitate access between the site and the uses on the east side of SR 53, and would be improved with implementation of LPIs, as required by Caltrans at all new or modified traffic signals.

Connectivity to the east side of SR 53 would be further improved with the proposed future construction of a bicycle and pedestrian overcrossing. As shown in Plate 1, the future bicycle and pedestrian overcrossing would extend from the eastern edge of the public park/plaza space over SR 53 to South Center Drive, which would ultimately provide dedicated pedestrian and bicycle travel between the project site and numerous uses on the east side of SR 53, including various County offices, Obsidian Middle School, and Woodland Community College. This overcrossing would also reduce the number of pedestrians crossing at the signalized intersections of SR 53 with 18th Avenue and Dam Road-Old Highway 53, thereby reducing delay for motorists and improving traffic flow. This proposed future improvement is consistent with the overcrossing identified in the SR 53 Corridor Study.

With construction of the pedestrian facilities shown on the site plan, the proposed project would be consistent with City policies related to pedestrian facilities, including the City's General Plan, the Lake County RTP/ATP, and the SR 53 Corridor Study.

Finding – The proposed project would not conflict with City policies for pedestrian facilities with incorporation of the improvements shown on the conceptual site plan.

Bicycle Facilities

Project Impacts on Bicycle Facilities

Class II bike lanes are proposed for the 18th Avenue Extension and a two-way cycle track would parallel Market Street on the east side of the street. These improvements together with existing bicycle lanes on Old Highway 53, the planned facilities outlined in the County's ATP, and the future bicycle and pedestrian overcrossing would provide adequate access for bicyclists. To provide a fully connected bicycle network within the site, it is recommended that sharrow markings or Class II bike lanes be provided on Airport Road. The proposed sidewalks and two-way cycle track on-site would effectively serve the same intent as the Class I pathway identified in the SR 53 Corridor Study. With incorporation of Class II bike lanes or sharrow markings on Airport Road, the project would be consistent with policies and plans for bicycle facilities, including the General Plan, County RTP/ATP, and the SR 53 Corridor Study.

Bicycle Storage

According to the Clearlake Municipal Code, bicycle parking shall be provided at a rate of 15 percent of the required vehicle parking spaces. For the proposed vehicle parking supply of 1,928 spaces, this translates to a minimum of 290 bicycle parking spaces needed on-site. Therefore, it is recommended that bike parking be incorporated throughout the site, and the site plan be updated to show the locations and number of bike parking spaces.

Finding – With the proposed bicycle facilities shown on the site plan and the recommendations identified in this report, the project would not conflict with plans and policies for bicycle facilities.

Recommendations – Airport Road should include sharrow markings or Class II bicycle lanes and at least 290 bicycle parking spaces should be incorporated throughout the site.

Project Impact on Transit Facilities

Existing transit stops are within an acceptable walking distance of the site and would be reachable upon completion of the proposed pedestrian and bicycle improvements. The proposed Old Highway 53/18th Avenue Extension intersection conflicts with the location of an existing northbound Route 10 bus stop so the bus stop would be relocated to the north leg of the new intersection. The *Lake Transit Authority Bus Passenger Facility Plan* identifies this bus stop as a recommended bus pullout location. Therefore, it is recommended that the City coordinate with Lake Transit Authority regarding the desired design elements of the relocated bus stop.

Finding – The project would not conflict with any plans or policies for transit facilities with relocation of the existing Route 10 stop to the north leg of the proposed Old Highway 53/18th Avenue intersection, as proposed.

Recommendation – The design of the relocated bus stop should be coordinated with Lake Transit Authority to ensure that the recommendations from the Passenger Facility Plan are incorporated.

Significance Finding – The proposed project would not conflict with any plans or policies for transportation facilities and would therefore have a less-than-significant impact with incorporation of the recommendations identified in this report.

Recommendations – To achieve a less-than-significant impact on transportation facilities, the proposed project should include the following facilities and improvements in addition to those shown on the site plan.

- Provide sharrow markings or Class II bicycle lanes on Airport Road;
- Incorporate a minimum of 290 bicycle parking spaces throughout the site; and
- Coordinate the design details for the relocated bus stop at Old Highway 53/18th Avenue with Lake Transit Authority

Vehicle Miles Traveled (VMT)

The potential for the project to conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b) was evaluated based on the project's anticipated Vehicle Miles Traveled (VMT).

Background and Guidance

Senate Bill (SB) 743 established VMT as the metric to be applied in determining transportation impacts associated with development projects. As of the date of this analysis, the City of Clearlake has not yet adopted a policy or thresholds of significance regarding VMT so the project-related VMT impacts were assessed based on guidance provided by the California Governor's Office of Planning and Research (OPR) in the publication *Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory*, 2018 as well as information contained within the *Senate Bill 743 Vehicle Miles Traveled Regional Baseline Study (RBS)*, Fehr & Peers, 2020, prepared for the Lake Area Planning Council (LAPC). Many of the recommendations in the RBS are consistent with the OPR Technical Advisory. As recommended by CEQA, each component of the proposed mixed-use project was assessed individually considering the various uses and employee and guest components separately.

Project VMT Impacts

Residential VMT

VMT impacts associated with residents of the proposed project were assessed based on guidance contained in both the *Technical Advisory* and the County's RBS, which indicate that a residential project generating vehicle travel that is 15 or more percent below the existing average countywide VMT per capita may indicate a less-than-significant VMT impact. OPR encourages the use of screening maps to establish geographic areas that achieve the 15 percent below regional average thresholds, allowing jurisdictions to "screen" projects in those areas from quantitative VMT analysis since impacts can be presumed to be less than significant.

As directed by Lake Area Planning Council (LAPC) staff, the web-based "VMTIndex" tool, developed by Fehr and Peers, was used to calculate the expected residential VMT for the project site. The tool uses Streetlight data from 2022 to compare the home-based VMT per resident for the block group in which a study parcel is located to the same measure for the County as a whole. The tool estimates the Countywide average baseline VMT per resident in Lake County to be 27.1 miles per day. A project generating a VMT that is 15 percent or more below this value, or 23.0 miles per resident or less per day, would have a less-than-significant VMT impact.

The project site is located within Block Group 060330008011, which is bounded by SR 53 on the east, Old Highway 53 on the west and south, and Lakeshore Drive on the north, and has a baseline home-based VMT per capita of 19.3 miles per day. Because this per capita VMT ratio is below the significance threshold of 23.0 miles per day, the VMT generated by residents of the proposed development would be considered to have a less-than-significant VMT impact. A copy of the VMT screening tool output is provided in Appendix D and the VMT calculations are summarized in Table 9.

Table 9 – Residential Vehicle Miles Traveled Analysis Summary

VMT Metric	Countywide Baseline VMT	Significance Threshold	Project VMT	Resulting Significance
Residential VMT per Capita	27.1	23.0	19.3	Less than significant

Note: VMT is measured in daily miles driven per resident

Employee VMT

Like the residential uses, impacts associated with employees of the proposed project were assessed based on guidance contained in both the *Technical Advisory* and the County's RBS, which indicate that an employee-based project generating vehicle travel that is 15 or more percent below the existing average countywide VMT per worker may indicate a less-than-significant VMT impact. The VMTIndex tool was again used to analyze VMT impacts associated with employee travel. The tool estimates the Countywide average baseline VMT per employee in Lake County to be 15.4 miles per day. Therefore, a project generating a VMT that is 15 percent or more below this value, or 13.1 miles per employee or less per day, would have a less-than-significant VMT impact.

Due to the limited employment-based uses in the Block Group that the project site is located, the analysis area was expanded to include Block Groups 060330007022, 060330008021, 060330008023, and 060330008012, which include the commercial and medical uses on the east side of SR 53 and the commercial uses north of Lakeshore Drive and west of Old Highway 53. When combined with the project site, these five Block Groups have an average home-based VMT per employee of 12.7 miles per day. Because this per employee VMT ratio is below the significance threshold of 13.1 miles per day, the VMT generated by employees of the proposed development would be considered to have a less-than-significant VMT impact. A copy of the VMT screening tool output for the four additional Block Groups is provided in Appendix D and the VMT calculations are summarized in Table 10.

Table 10 – Employee Vehicle Miles Traveled Analysis Summary

VMT Metric	Countywide Baseline VMT	Significance Threshold	Project VMT	Resulting Significance
Employee VMT per Capita	15.4	13.1	12.7	Less than significant

Note: VMT is measured in daily miles driven per employee

Retail VMT

The OPR *Technical Advisory* indicates that retail projects should generally be analyzed by examining total VMT, with an increase in total regional VMT being considered a significant impact. The *Technical Advisory* also indicates that many retail uses may generally be presumed by lead agencies to have a less-than-significant VMT impact (see *Technical Advisory* pages 16-17), especially smaller retail uses or those located where demand is currently underserved. OPR based this presumption on substantial evidence and research demonstrating that adding retail uses typically improves destination accessibility to customers. The theory behind this criterion is that many retail establishments do not necessarily add new trips to a region, but change where existing customers shop within the region, and often shorten trip lengths. OPR cites a size of 50,000 square feet or greater as being a potential indicator of regional-serving retail (versus local-serving) that would typically require a quantitative VMT analysis.

While the retail component of the project is greater than 50,000 square feet, consideration was given to the specific details of the project, including where customers currently must travel to shop at larger retail stores. There are limited existing retail outlets in Clearlake, and Lake County in general, meaning residents must leave the County and travel more than one hour to Ukiah, Santa Rosa, or Napa to purchase certain goods. The provision of more retail establishments in Clearlake would reduce the number of interregional trips Lake County residents have to make to nearby counties, which would have a beneficial impact on VMT. Given the mixed-use nature of the project where patrons could potentially live, work, shop, and have their medical needs served all on the same site, along with its centralized location, it is reasonable to conclude that the retail component of the project would have a less-than-significant impact on VMT.

Hotel Guest and Medical Patient VMT

The OPR *Technical Advisory* does not specifically address medical or visitor-based uses such as hotels, indicating that lead agencies may develop their own thresholds for such land use types and allowing assessment on a case-by-case basis. The proposed hotel requires consideration of the project's intended visitor base and where those

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

The proposed hotel would be operated by Marriott under their “Fairfield Inn” line, which are self-described business hotels. The Fairfield Inn website states their goal is to provide “simple, straightforward, and stress-free experiences that the brand is known for.” These types of hotels are typically chosen out of convenience and proximity to the travelers’ destination, and are not considered a destination themselves, as opposed to a resort-style hotel which could be considered a destination. While larger resort hotels have the potential to generate interregional trips specifically for the purpose of visiting the hotel, this is not typically the case for business hotels. Further, there are several other existing hotels near Lakeshore Drive to the north of the project site, which indicates that future guests of the proposed hotel would likely have shifted their stay from one of the other nearby hotels. Finally, the project would be anticipated to generate predominantly business travelers whose travel patterns could reasonably be expected to be similar to employees, which have been identified as having a less-than-significant VMT impact. Given these characteristics, it is anticipated that there would be few to no net new hotel guest trips added to the Lake County region that would be exclusively attributable to the project. Accordingly, guests of the proposed hotel project would be expected to result in a less-than-significant VMT impact.

The same concept can be applied to the proposed medical uses, wherein the provision of a new medical facility alone would not create more sick people in the region or the demand for medical services. Instead, the proposed medical facilities would better serve the existing needs of the region and potentially reduce total VMT by providing medical services that patients currently must leave Lake County to obtain. The proposed project’s location near the geographic center of the most populated area of the region should also result in short trip lengths, which again may replace existing trips that are longer (thereby reducing VMT). Given the nature of the proposed mixed-use project and centralized location, it is reasonable to conclude that the medical patient component of the project would have a less-than-significant impact on VMT.

Significance Finding – The proposed project would be expected to have a less-than-significant impact on VMT based on VMT data included in the web-based VMTIndex tool, its centralized location near the center of the region’s largest housing supply, and the mixed-use nature of the project.

Safety Issues

The potential for the project to impact safety was evaluated in terms of the adequacy of sight distance and need for turn lanes at the project access points as well as the adequacy of stacking space in dedicated turn lanes at the study intersections to accommodate additional queuing due to the addition of project-generated trips. This section addresses the third bullet on the CEQA checklist which is whether the project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Site Access

As shown on the site plan, the project site would be accessed via several new driveways and intersections on Old Highway 53 and the proposed extension of 18th Avenue. Internal circulation would include the new streets of North and South Market Street, Airport Road, and Festival Lane. These streets would provide access to several parking lots throughout the site via private driveways. On-street parking would be provided on Market Street, Airport Road, and Festival Lane

Sight Distance

At unsignalized intersections a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Adequate time should be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed. Sight distances along Old Highway 53 at the proposed public street intersections with 18th Avenue, Airport Road, and South Market Street and along 18th Avenue at North Market Street 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 the approach travel speeds as the basis for determining the recommended sight distance and more time needed for making a left turn versus a right turn. Additionally, the stopping sight distance needed for a following driver to stop if there is a vehicle waiting or slowing to turn into a side street is evaluated based on stopping sight distance criterion and the approach speed on the major street.

Adequacy of sight lines were evaluated using a combination of field measurements and review of the site plan considering that the intersections are not yet constructed.

Old Highway 53 Intersections

The proposed intersections on Old Highway 53 at 18th Avenue, Airport Road, and South Market Street would all be stop-controlled on the minor street approaches and uncontrolled on Old Highway 53. For the posted speed limit of 35 mph on Old Highway 53, the minimum corner sight distance needed is 385 feet for left turns and 335 feet for right turns. Sight lines were field measured at each of the three intersection locations to extend 400 or more feet in each direction, which is adequate for the posted speed limit. Additionally, adequate stopping sight distances are available for following drivers to notice and react to a preceding motorist slowing to turn left or right into the minor streets, though it is only marginally available southbound approaching Airport Road; a left-turn lane would be constructed on Old Highway 53 at the intersection with 18th Avenue so motorists waiting to turn left would be able to do so in a dedicated lane at this location with minimal impact to through traffic.

While sight lines are currently clear, care should be taken to maintain unobstructed sight lines during design and construction of the proposed intersections and placement of signage, monuments, or other structures should be avoided within the sight triangles, which are denoted graphically in Plate 2. The Intersection Sight Distance (ISD) lengths should be based on corner sight distances of 385 feet for left turns and 335 for right turns.

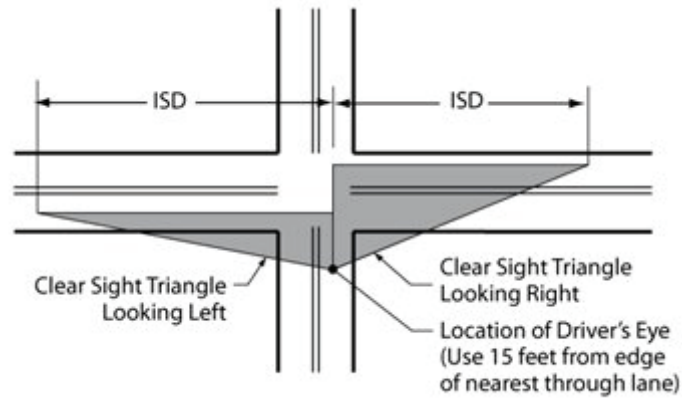


Plate 2 Vision Triangle Graphic

18th Avenue/North Market Street Intersection

The proposed intersection of 18th Avenue/North Market Street would be stop-controlled on the northbound North Market Street approach. While 18th Avenue does not have a posted speed limit, travel speeds are anticipated to be 25 to 30 mph so a design speed of 30 mph was used to evaluate the adequacy of sight distance at the proposed intersection. For speeds of 30 mph, the minimum corner sight distance needed is 330 feet for left turns and 285 feet for right turns. Based on a review of the project site plan, it is anticipated that sight lines would extend approximately 350 feet to the east and more than 400 feet to the west, which would be adequate to facilitate all turning movements for the anticipated travel speeds. Again, any roadside structures to be placed near the intersection should not obstruct sight lines.

Finding – Sight lines on Old Highway 53 and 18th Avenue are expected to be adequate to accommodate all turns into and out of the proposed intersections.

Recommendation – To maintain adequate sight lines, any new signage, monuments, or other structures should be kept out of the vision triangles at the access points.

Access Analysis

Turn Lane Warrants

To assess the need for left-turn lanes on Old Highway 53 at the proposed intersections with 18th Avenue, Airport Road, and South Market Street, warrants were 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.

To analyze the need for left-turn lanes, up to 60 percent of the total trips approaching the site from destinations to the north on Old Highway 53 were assumed at each access point (18th Avenue Extension, Airport Road, and South Market Street) to reflect the variability of day-to-day travel patterns. Using Future plus Project volumes for the Saturday peak hour, which represent worst-case conditions, it was determined that left-turn lanes would be warranted on Old Highway 53 at 18th Avenue Extension and South Market Street and nearly warranted at Airport Road. Right-turn lanes would be warranted on Old Highway 53 at Airport Road and South Market Street. Due to the rolling terrain on Old Highway 53 which can limit sight lines to stopped drivers waiting to turn left into the site, it is recommended that left-turn lanes be constructed on Old Highway 53 at all three access points even though volumes are slightly below the warrant threshold at Airport Road. Construction of a left-turn lane is only shown at 18th Avenue so the site plan will need to be updated to reflect turn lanes at the remaining two

intersections. Although right-turn lanes are warranted based on volumes at Airport Road and South Market Street, bike lanes are provided on Old Highway 53 so motorists can move into the bike lane to complete their right turns which effectively serves the same purpose as a right-turn lane. Therefore, dedicated right-turn lanes are not necessary. Rather than constructing right-turn lanes, it is recommended that dashed green bicycle conflict markings be installed in the bike lane for the last 100 feet approaching South Market Street, Airport Road, and 18th Avenue to heighten awareness of motorists to potential bicyclists.

Copies of the turn lane warrant spreadsheets are provided in Appendix E.

Finding – Based on volumes alone, left-turn lanes would be warranted on Old Highway 53 at 18th Avenue Extension and South Market Street and right-turn lanes warranted at Airport Road and South Market Street. Given the hilly terrain with limited sight lines and that volumes are almost at the threshold, a left-turn lane is also considered warranted at Airport Road.

Recommendation – To result in a less-than-significant impact to traffic safety, left-turn lanes should be installed on Old Highway 53 at 18th Avenue Extension, Airport Road, and South Market Street and dashed green bicycle conflict markings installed in the bike lane on Old Highway 53 for the last 100 feet approaching South Market Street, Airport Road, and 18th Avenue.

Queuing

Intersection Queuing

The City of Clearlake does not prescribe thresholds of significance regarding queue lengths. However, an increase in queue length due to project traffic was considered a potentially significant impact if the increase would cause the queue to extend out of a dedicated turn lane into a through traffic lane where moving traffic would be impeded, or if the back of queue were to extend into a visually restricted area, such as a blind corner.

Under each scenario, the projected 95th percentile queues in dedicated turn lanes at the study intersections were determined using the Vistro software. Table 11 summarizes the predicted queue lengths. Copies of the queuing projections are contained in the Vistro output in Appendix F.

Table 11 – 95th Percentile Queues

Study Intersection Turn Lane	Available Storage	95 th Percentile Queues											
		AM Peak Hour				PM Peak Hour				Saturday Peak Hour			
		E	E+P	F	F+P	E	E+P	F	F+P	E	E+P	F	F+P
1. Old Hwy 53/18 th Ave Ext SB Left Turn	100*	-	3	-	3	-	1	-	1	-	3	-	3
2. SR 53/18 th Ave NB Left Turn	675	1	61	64	144	0	27	61	63	0	71	40	84
SB Left Turn	720	18	49	37	75	8	20	36	37	4	19	13	22
EB Left Turn	100*	-	66	53	147	-	90	57	114	-	145	37	165
WB Left Turn	220*	-	45	12	65	-	26	11	31	-	12	4	14
WB Right Turn	220	7	-	-	-	5	-	-	-	1	-	-	-
3. Old Hwy 53/Airport Rd SB Left Turn	100*	-	2	-	2	-	2	-	2	-	4	-	5
4. Old Hwy 53/S Market St SB Left Turn	100*	-	2	-	2	-	1	-	1	-	3	-	3
WB Right Turn	50*	-	3	-	3	-	2	-	2	-	4	-	4
5. SR 53/Dam Rd-Old Hwy 53 NB Left Turn	570	89	287	175	336	95	334	237	414	50	287	129	353
SB Left Turn	760	84	120	206	251	45	73	167	214	40	80	118	174
EB Left Turn	150	23	147	73	227	17	125	92	179	11	136	55	170
EB Right Turn	150	71	238	165	291	34	254	46	346	18	261	49	317
WB Left Turn	140	66	91	171	204	51	76	192	224	34	65	116	163
WB Right Turn	255	77	132	216	272	59	104	245	289	28	80	147	210
With EB Right Turn Overlap													
NB Left Turn	570	-	241	-	282	-	269	-	318	-	245	-	265
SB Left Turn	760	-	102	-	214	-	60	-	165	-	68	-	123
EB Left Turn	150	-	129	-	177	-	107	-	139	-	119	-	129
EB Right Turn	150	-	135	-	183	-	134	-	202	-	128	-	163
WB Left Turn	140	-	79	-	172	-	64	-	186	-	57	-	121
WB Right Turn	255	-	121	-	251	-	93	-	255	-	74	-	178
6. Market St/Airport Rd NB Left Turn	100*	-	1	-	1	-	2	-	2	-	3	-	3
SB Left Turn	100*	-	2	-	2	-	6	-	6	-	10	-	10

Notes: 95th Percentile Queue based on Vistro output; all distances are measured in feet; E = Existing Conditions; E+P = Existing plus Project Conditions; F = Future Conditions; F+P = Future plus Project Conditions; * = Turn lane is proposed and turn lane length may be adjusted to accommodate queues; **Bold** text = queue length exceeds available storage; **Shaded** = with recommended improvements

As the eastbound left-turn lane at SR 53/18th Avenue does not currently exist and would be installed under project and/or future conditions, it is recommended that the turn lane be designed to provide at least 165 feet of storage space to accommodate 95th percentile queues.

The project would be expected to have a potentially significant impact on queuing under Existing plus Project volumes in the eastbound right-turn lane at SR 53/Dam Road-Old Highway 53. The installation of an eastbound right-turn overlap phase would be expected to reduce the eastbound right-turn queues and result in a less-than-significant impact.

Under Future plus Project volumes the 95th percentile queues at SR 53/Dam Road-Old Highway 53 would be expected to exceed the turn pocket lengths at multiple locations without and with the addition of project traffic. Queue lengths would be reduced, however, with the addition of an eastbound right-turn overlap phase as recommended for Existing plus Project Conditions. To accommodate projected volumes under Future Conditions, it is recommended that the eastbound left- and right-turn lanes be extended to at least 180 feet and 205 feet respectively. Additionally, the City should work with Caltrans to monitor queues on the westbound approach to SR 53/Dam Road-Old Highway 53 to determine if any future improvements are needed after construction of the planned roundabout at Dam Road/Dam Road Extension.

Finding – The project would have a potentially significant impact on queuing at SR 53/Dam Road-Old Highway 53 under Existing plus Project conditions. Queue increases under future volumes would not represent a significant impact as they can be addressed through future improvements.

Recommendation – The proposed eastbound left-turn lane at SR 53/18th Avenue should be designed with at least 165 feet of storage space. Other new turn lanes may be installed with 100 feet of storage space for left-turning traffic. To result in a less-than-significant impact on queuing, an eastbound right-turn overlap phase should be added at SR 53/Dam Road-Old Highway 53. It is recommended that the eastbound left-turn lane at SR 53/Dam Road-Old Highway 53 be extended to 180 feet and the eastbound right-turn lane be extended to 205 feet to address future queuing deficiencies.

Drive-Through Queuing

The 95th-percentile queue is generally applied as the target for acceptable on-site circulation. To assess the adequacy of the proposed stacking space for expected demand at drive-through restaurant uses, factors such as the queuing capacity, arrival rate, and service rate were considered. The arrival rate is defined as the number of patrons arriving at the facility per hour and was set to coincide with the peak inbound trip generation estimate for the Saturday peak hour; the Saturday peak hour is the hour with the highest trip generation for drive-through restaurant uses. As some customers would be expected to go inside the restaurant to order, it was conservatively assumed that 80 percent of customers would use the drive-through and 20 percent of customers would enter the restaurant.

The service rate for a fast-food restaurant drive-through is typically set at 60 vehicles per hour, or one customer every minute. For uses with two service points, the cumulative service rate would be 120 patrons per hour. The queuing capacity is measured on the site plan as the storage distance between the drive-through window and any parking spaces or the nearest intersection with a drive aisle. If the queuing capacity is exceeded, this indicates that the drive-through queue would block internal circulation or parking movements, although there may be alternate routes for drivers to circumvent the blocked location(s).

Based on the application of arrival and discharge rates, it was determined that the 95th percentile queues would be less than the proposed queuing capacity for each of the four drive-through restaurant uses. As a result, there would be no anticipated issues with queuing in the drive-through lanes blocking access to other parts of the site. Table 12 summarizes the results of the analysis. Spreadsheets summarizing the drive-through queuing calculations are provided in Appendix G.

Table 12 – Drive-Through Queuing Analysis

Size	Location	Arrival Rate*	# of Service Points	Queuing Capacity	95 th Percentile Queue
2.0 ksf	PD-1 North of 18 th Ave	45 veh/hr	1	6 veh	5 veh
2.0 ksf	PD-2 South of 18 th Ave	45 veh/hr	1	9 veh	7 veh
2.0 ksf	PD-2 South End	45 veh/hr	2	10 veh	2 veh
4.4 ksf	PD-3 South End	99 veh/hr	2	23 veh	15 veh

Notes: ksf = 1,000 square feet; veh = vehicles; * = Arrival rate is equal to 80% of Saturday peak hour inbound trips

Finding – As designed, the four proposed drive-through restaurant uses would have sufficient stacking space to accommodate the expected 95th percentile queues.

Pedestrian Safety

The collision history for the two existing study intersections was reviewed to determine any trends or patterns that may indicate a safety issue for pedestrians. During the five-year study period detailed previously, there were three fatal collisions involving pedestrians at SR 53/18th Avenue, as well as two serious injury collisions and one fatal collision at SR 53/ Dam Road-Old Highway 53.

At SR 53/18th Avenue, all the pedestrian-involved collisions occurred at nighttime and were considered to be the fault of the pedestrian for crossing outside of a marked or unmarked crosswalk. Each collision involved either a northbound or southbound through-moving driver on SR 53.

The pedestrian collisions at SR 53/Dam Road-Old Highway 53 all involved pedestrians crossing within crosswalks. One collision took place during the daytime and was attributed to an unknown collision factor. This collision involved a northbound right-turning driver and an eastbound pedestrian. The remaining two collisions occurred at nighttime; the first resulted in severe injury from a southbound through-moving driver colliding with an eastbound pedestrian. This collision was the fault of the driver and had a primary collision factor of a traffic signal and signs violation. The other collision was fatal and involved a southbound through-moving driver and a westbound pedestrian, which was reportedly caused by a pedestrian violation.

Most of the pedestrian collisions included a through-moving driver on SR 53, occurred at nighttime, and resulted in severe injury or fatality for the pedestrian. The proposed project includes a future bicycle and pedestrian overcrossing of SR 53 approximately midway between 18th Avenue and Dam Road-Old Highway 53. With comprehensive wayfinding signage directing pedestrians and bicyclists to the overcrossing, the proposed overcrossing would be expected to help mitigate the existing pedestrian safety issue by moving pedestrians out of conflict with high-speed traffic on SR 53. To allow pedestrians to better establish themselves in crosswalks at the intersections of SR 53 with 18th Avenue and Dam Road-Old Highway 53, it is recommended that Leading Pedestrian Intervals (LPIs) be programmed at all existing crosswalks, consistent with Caltrans' policy that LPIs be implemented at all new or modified traffic signals on state routes. It is also recommended that high visibility crosswalk markings be implemented along with advance limit lines to provide greater separation between motorists and pedestrians.

In addition to the crosswalks shown on the concept plan, it is recommended that a crosswalk be installed on the southern leg of the proposed Old Highway 53/18th Avenue Extension intersection like what is proposed at Old Highway 53/South Market Street. This would provide a dedicated crossing opportunity for residents of the homes on the west side of Old Highway 53 when walking to and from the project site. To result in better spacing between crossing opportunities and reduce exposure to vehicle conflicts, it is recommended that the proposed crossing on the east leg of the 18th Avenue/North Market Street intersection be shifted to the east, midway between the intersection and the first set of driveways, and combined with the crossing proposed on the west leg of the easternmost driveways.

Typically, a minimum of 20 pedestrians crossing within a single hour is needed to warrant an enhanced crossing device such as Rectangular Rapid Flashing Beacons (RRFBs) at an uncontrolled crossing location. Because the proposed crosswalks could all potentially serve 20 pedestrians within a single hour at buildout of the site, especially during events and peak shopping periods, it is recommended that RRFBs be incorporated as a design standard at all crosswalks where traffic on the major street is uncontrolled. It is also recommended that the existing uncontrolled crossing of Old Highway 53 adjacent to Clearlake Community School be upgraded with RRFBs so that connectivity is provided between the school site on the west side of Old Highway 53 and the proposed project site on the east side.

With construction of the pedestrian facilities shown on the site plan along with the recommendations in this report, the proposed project would be consistent with City policies related to pedestrian facilities, including the Lake County RTP/ATP and the SR 53 Corridor Study.

Finding – The proposed project would have a less-than-significant impact on pedestrian safety with incorporation of the recommended improvements identified below.

Recommendations – In addition to the proposed pedestrian facilities shown on the site plan, an enhanced pedestrian crossing should be constructed on the south leg of Old Highway 53/18th Avenue Extension, the proposed crosswalk on the east leg of 18th Avenue Extension/North Market Street should be shifted east and combined with the west leg crossing at the first set of driveways, and the new uncontrolled crossings to be built as part of the project should include RRFBs including the existing crossing on Old Highway 53 serving Clearlake Community School. In addition to LPIs, improvements at the signalized intersections of SR 53 with 18th Avenue and Dam Road-Old Highway 53 should consist of high visibility crosswalk markings and advance limit lines.

Bicyclist Safety

Two bicycle collisions were reported at SR 53/Dam Road-Old Highway 53 over the five-year study period. The first collision, which took place during the daytime, was attributed to improper turning by an eastbound right-turning driver and resulted in suspected minor injury to the bicyclist. The second collision reported was caused by a traffic signal and signs violation by the bicyclist, occurred during the nighttime, and resulted in fatality for the bicyclist. For this collision, the bicyclist was traveling westbound and the driver was traveling southbound. No clear trends could be identified for the bicycle crashes at SR 53/Dam Road-Old Highway 53, but it is anticipated that the proposed bicycle and pedestrian overcrossing would reduce the likelihood of bicycle collisions.

To improve connectivity and safety at SR 53/Dam Road it is recommended that the existing eastbound bike lane on Old Highway 53 be extended to the intersection and transitioned to the left side of the right-turn lane to be consistent with current design standards. The planned roundabout at the intersection of Dam Road/Dam Road Extension would result in dedicated off-street bicycle facilities on Dam Road to the east of the intersection and would connect to the existing Class II bike lanes on Old Highway 53 on the west side of the intersection, further improving safety. To improve safety at SR 53/18th Avenue, recommendations include striping Class II bike lanes on both 18th Avenue approaches and dashed green bicycle conflict markings extended through the intersection both eastbound and westbound. With incorporation of these recommendations, the project would be expected to have a less-than-significant impact on bicyclist safety.

Finding – The proposed project would have a less-than-significant impact on cyclist safety with incorporation of the recommended improvements identified below in addition to those shown on the site plan.

Recommendations – Class II bike lanes should be striped on the eastbound and westbound approaches at SR 53/18th Avenue and dashed green conflict markings extended through the intersection. Additionally, the existing eastbound bike lane on Old Highway 53 should be extended to the intersection with SR 53 and transitioned to the left side of the right-turn lane.

Significance Finding – With the implementation of recommendations identified in this report, the proposed project would not create any new hazards or introduce incompatible uses to the roadway system and would therefore have a less-than-significant impact on safety.

Recommendations – To achieve a less-than-significant impact on safety, the proposed project should include the following elements, in addition to those shown on the site plan:

- Any new signage, monuments, or other structures should be kept out of the vision triangles of drivers at the project access points on Old Highway 53 and 18th Avenue;
- Left turn lanes should be provided at each of the three proposed intersections on Old Highway 53;
- Dashed green bicycle conflict markings should be installed in the bike lane on Old Highway 53 for the last 100 feet approaching South Market Street, Airport Road, and 18th Avenue;
- The eastbound left-turn lane at SR 53/18th Avenue should have at least 165 feet of storage space;
- An eastbound right-turn overlap phase should be provided at SR 53/Dam Road-Old Highway 53. The eastbound approach should be widened so that the left-turn lane is extended to 180 feet and the right-turn lane extended to 205 feet to address future queuing deficiencies;
- An enhanced pedestrian crossing should be installed on the south leg of the Old Highway 53/18th Avenue Extension intersection;
- The crosswalk on the east leg of 18th Avenue Extension/North Market Street and the crosswalk on the west leg of the eastern driveways should be combined and relocated midway between the intersection and driveways;
- RRFBs should be installed at all proposed crosswalks of uncontrolled approaches;
- RRFBs should be provided at the existing crosswalk on Old Highway 53 at the Clearlake Community School;
- LPIs, high visibility crosswalk markings, and advance limit lines should be installed at the existing crosswalks at SR 53/18th Avenue and SR 53/Dam Road-Old Highway 53;
- Class II bike lanes should be installed on the eastbound and westbound approaches to SR 53/18th Avenue and dashed green conflict markings provided through the intersection; and
- The existing eastbound bike lane on Old Highway 53 should be extended to the intersection with SR 53 and transitioned lane to the left side of the right-turn lane.

Emergency Access

The final bullet on the CEQA checklist requires an evaluation as to whether the project would result in inadequate emergency access.

Adequacy of Site Access

The project site would be accessed via several new intersections and driveways on Old Highway 53, the proposed extension of 18th Avenue, and the proposed new streets of North Market Street, South Market Street, Airport Road, and Festival Lane. As a result, emergency responders would have multiple options for gaining access to the project site in an emergency. While the site plan is still preliminary, it is anticipated that all aspects of the site, including street and driveway widths and turning radii, would be designed in accordance with applicable standards; therefore, access would be expected to function acceptably for emergency response vehicles.

Off-Site Impacts

While the project would be expected to result in increased delays at nearby intersections, 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. It is noted that the proposed extension of 18th Avenue to Old Highway 53 would be expected to shift some trips away from the SR 53 intersections with Lakeshore Drive and Dam Road; therefore, reducing delay at these intersections and potentially improving emergency response times. Further, the new section of 18th Avenue would be a more direct route to many homes on the west side of SR 53 south of Lakeshore Drive and north of Dam Road so the emergency response times to these dwellings would likely be improved.

Significance Finding – Emergency access and on-site circulation are anticipated to function acceptably with incorporation of applicable design standards into the site layout, and traffic from the proposed project is expected to have a less-than-significant impact on emergency response times. The proposed extension of 18th Avenue has the potential to improve emergency response times to many dwellings on the west side of SR 53.

Conclusions and Recommendations

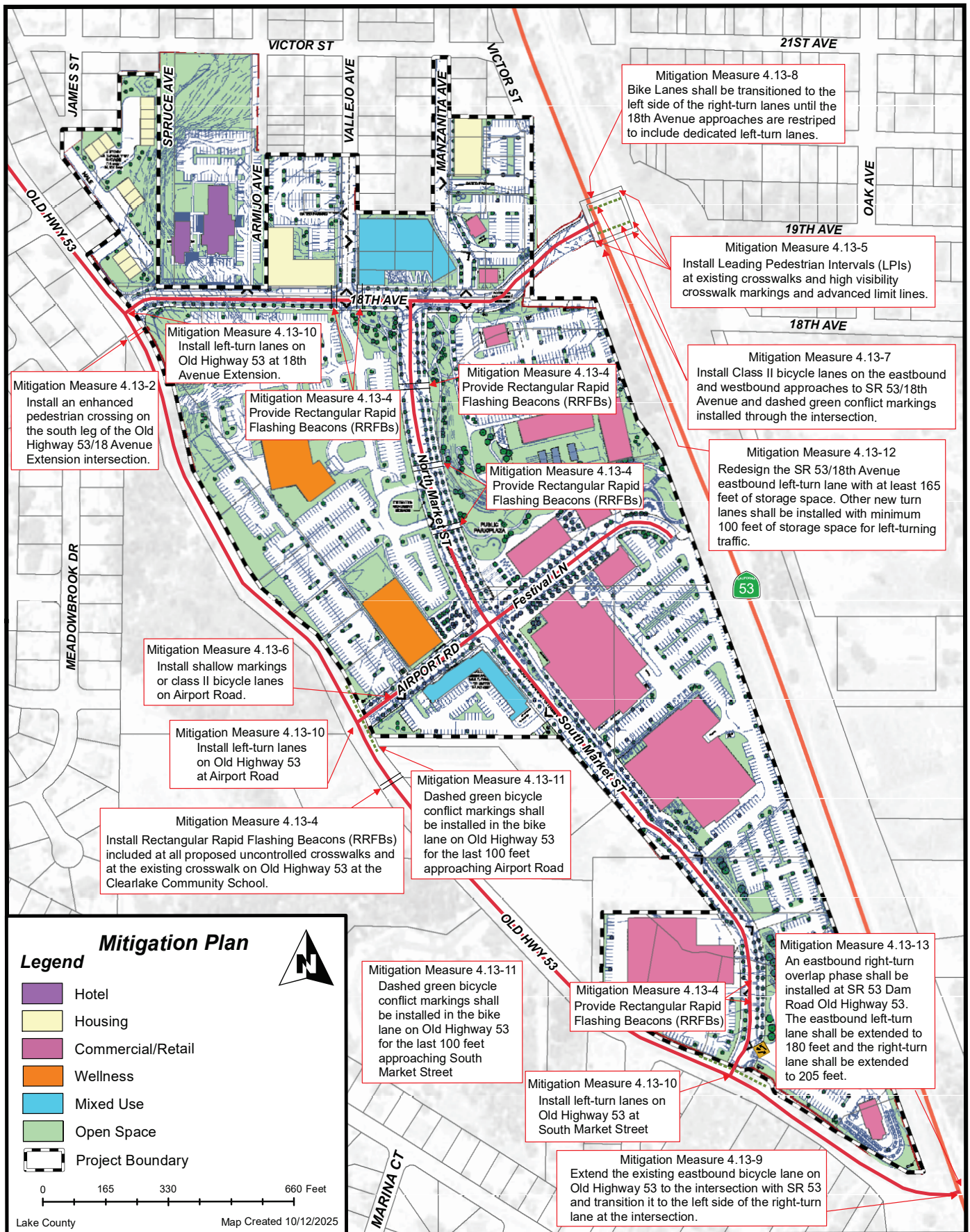
CEQA Findings

- The calculated collision rates for the intersections of SR 53/18th Avenue and SR 53/Dam Road-Old Highway 53 were determined to be lower than the statewide average rates. However, there were multiple fatal collisions involving pedestrians and/or bicyclists at both intersections.
- With the recommended improvements identified in this report, and relocation of the existing Route 10 bus stop to the north leg of the proposed Old Highway 53/18th Avenue intersection as proposed, the project would not conflict with any plans and policies for transportation facilities translating to a less-than-significant impact.
- The proposed project would have a less-than-significant impact on VMT due to its location in a low VMT-generating area, central location within the region, and the mixed-use nature of the project.
- The proposed project would have a less-than-significant impact on traffic safety with incorporation of the access recommendations identified in this report, including the need to maintain clear sight lines and provide turn lanes at project intersections, as well as the identified bicycle and pedestrian improvements.
- Emergency access and on-site circulation are anticipated to function acceptably with incorporation of applicable design standards into the site layout. Traffic from the proposed project is expected to have a less-than-significant impact on emergency response times, with potential improvement of response times to the dwellings on the west side of SR 53 due to the extension of 18th Avenue to Old Highway 53.

Recommended CEQA Mitigations

The recommended mitigations are summarized below and are shown on Figure 4.

- Install sharrow markings or Class II bicycle lanes on Airport Road.
- Incorporate a minimum of 290 bicycle parking spaces throughout the project site.
- Coordinate with Lake Transit Authority regarding the design of the relocated bus stop at Old Highway 53/18th Avenue to ensure the recommendations in the Passenger Facility Plan are incorporated.
- Position any new signage, monuments, or other structures out of the vision triangles of drivers at the access points to the project (Old Highway 53 at 18th Avenue, Airport Road, and South Market Street, as well as 18th Avenue at North Market Street).
- Install left-turn lanes on Old Highway 53 at 18th Avenue Extension, Airport Road, and South Market Street.
- Install dashed green bicycle conflict markings in the bike lane on Old Highway 53 for the last 100 feet approaching South Market Street, Airport Road, and 18th Avenue.
- Design the eastbound left-turn lane on the 18th Avenue approach to the intersection with SR 53 with at least 165 feet of storage space; this improvement may be deferred until the level of development triggers the need for the dedicated left-turn lane. Other new turn lanes may be installed with 100 feet of storage space for left-turning traffic.



Transportation Impact Study for the Clearlake Airport Redevelopment Area Project
Figure 4 – Mitigated Site Plan

- Install an eastbound right-turn overlap phase at SR 53/Dam Road-Old Highway 53. The eastbound left-turn lane shall be extended to 180 feet and the right-turn lane extended to 205 feet.
- Install an enhanced pedestrian crossing on the south leg of the Old Highway 53/18th Avenue Extension intersection.
- Install RRFBs at all proposed uncontrolled crosswalks and at the existing crosswalk on Old Highway 53 at the Clearlake Community School.
- Combine the proposed crosswalk on the east leg of 18th Avenue Extension/North Market Street with the crosswalk proposed on the west leg of the eastern driveways and relocate the new crossing midway between the intersection and driveways.
- Install LPIs, high visibility crosswalk markings, and advance limit lines at the existing crosswalks at SR 53/18th Avenue and SR 53/Dam Road-Old Highway 53.
- Install Class II bike lanes on the eastbound and westbound approaches to SR 53/18th Avenue and install dashed green conflict markings through the intersection. The bike lanes shall be transitioned to the left side of the right-turn lanes until the 18th Avenue approaches are restriped to include dedicated left-turn lanes.
- Extend the existing eastbound bike lane on Old Highway 53 to the intersection with SR 53 and transition the bike lane to the left side of the right-turn lane.

Study Participants and References

Study Participants

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Assistant Engineer	Nathan Sharafian, EIT
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CLE032



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Appendix A

Collision Rate Calculations



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Intersection Collision Rate Worksheet

Transportation Study for the Clearlake Airport Area Commercial Project EIR

Intersection # 1: SR 53 & 18th Ave

Date of Count: Thursday, September 5, 2024

Number of Collisions: 6

Number of Injuries: 4

Number of Fatalities: 3

Average Daily Traffic (ADT): 23600

Start Date: July 1, 2019

End Date: June 30, 2024

Number of Years: 5

Intersection Type: Four-Legged

Control Type: Signals

Area: Urban

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

$$\text{Collision Rate} = \frac{6}{23,600} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.14 c/mve	50.0%	66.7%
Statewide Average*	0.33 c/mve	0.6%	47.7%

Notes

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2022 Collision Data on California State Highways, Caltrans

Intersection # 2: SR 53 & Dam Rd

Date of Count: Thursday, September 5, 2024

Number of Collisions: 17

Number of Injuries: 16

Number of Fatalities: 2

Average Daily Traffic (ADT): 33000

Start Date: July 1, 2019

End Date: June 30, 2024

Number of Years: 5

Intersection Type: Four-Legged

Control Type: Signals

Area: Urban

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

$$\text{Collision Rate} = \frac{17}{33,000} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.28 c/mve	11.8%	94.1%
Statewide Average*	0.33 c/mve	0.6%	47.7%

Notes

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2022 Collision Data on California State Highways, Caltrans



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Appendix B

Derivation of Internal Capture Trip Generation Rates



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NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	CLE032			Organization:	W-Trans
Project Location:	Clearlake, CA			Performed By:	GR
Scenario Description:	Weekday			Date:	4/28/2025
Analysis Year:	2025			Checked By:	CN
Analysis Period:	AM Street Peak Hour			Date:	5/8/2025

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	820/945	224	ksf	386	213	173
Restaurant	933/934	12	ksf	549	288	261
Cinema/Entertainment				0		
Residential	215/221	250	du	94	22	72
Hotel	310	75	rms	35	19	16
All Other Land Uses ²				0		
				1,064	542	522

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	1.20	2%	2%	1.20	2%	2%
Restaurant	1.20	2%	2%	1.20	2%	2%
Cinema/Entertainment						
Residential	1.20	2%	2%	1.20	2%	2%
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		27	0	1	0
Restaurant	0	20		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	17	0		0
Hotel	0	2	1	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,270	647	623
Internal Capture Percentage	11%	11%	11%
External Vehicle-Trips ⁵	909	465	444
External Transit-Trips ⁶	22	11	11
External Non-Motorized Trips ⁶	22	11	11

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	9%	13%
Restaurant	13%	7%
Cinema/Entertainment	N/A	N/A
Residential	8%	21%
Hotel	5%	19%

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

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

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

⁴Enter 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.

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

⁶Person-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

Project Name:	CLE032
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.20	213	256	1.20	173	208
Restaurant	1.20	288	346	1.20	261	313
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.20	22	26	1.20	72	86
Hotel	1.00	19	19	1.00	16	16

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	60		27	0	29	0
Restaurant	97	44		0	13	9
Cinema/Entertainment	0	0	0		0	0
Residential	2	1	17	0		0
Hotel	12	2	1	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		82	80	0	0	0
Retail	0		173	0	1	0
Restaurant	0	20		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	0	44	69	0		0
Hotel	0	10	21	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	23	233	256	186	5	5
Restaurant	45	301	346	241	6	6
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	24	26	20	0	0
Hotel	1	18	19	18	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	28	180	208	143	4	4
Restaurant	22	291	313	233	6	6
Cinema/Entertainment	0	0	0	0	0	0
Residential	18	68	86	55	1	1
Hotel	3	13	16	13	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

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

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	CLE032	Organization:	W-Trans		
Project Location:	Clearlake, CA	Performed By:	GR		
Scenario Description:	Weekday	Date:	4/28/2025		
Analysis Year:	2025	Checked By:	CN		
Analysis Period:	PM Street Peak Hour	Date:	5/8/2025		

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	820/945	224	ksf	985	479	506
Restaurant	933/934	12	ksf	409	211	198
Cinema/Entertainment				0		
Residential	215/221	233	du	100	61	39
Hotel	310	75	rms	44	23	21
All Other Land Uses ²				0		
				1,538	774	764

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	1.20	2%	2%	1.20	2%	2%
Restaurant	1.20	2%	2%	1.20	2%	2%
Cinema/Entertainment						
Residential	1.20	2%	2%	1.20	2%	2%
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						
Restaurant						
Cinema/Entertainment						
Residential						
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		73	0	34	4
Restaurant	0	98		0	12	16
Cinema/Entertainment	0	0	0		0	0
Residential	0	20	10	0		1
Hotel	0	3	13	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,837	924	913
Internal Capture Percentage	31%	31%	31%
External Vehicle-Trips ⁵	1,017	512	505
External Transit-Trips ⁶	25	13	12
External Non-Motorized Trips ⁶	25	13	12

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	21%	18%
Restaurant	38%	53%
Cinema/Entertainment	N/A	N/A
Residential	63%	66%
Hotel	91%	76%

¹ Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , 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 <i>Trip Generation Manual</i>).
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

Project Name:	CLE032
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.20	479	575	1.20	506	607
Restaurant	1.20	211	253	1.20	198	238
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.20	61	73	1.20	39	47
Hotel	1.00	23	23	1.00	21	21

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	12		176	24	158	30
Restaurant	7	98		19	43	17
Cinema/Entertainment	0	0	0		0	0
Residential	2	20	10	0		1
Hotel	0	3	14	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		46	5	0	3	0
Retail	0		73	0	34	4
Restaurant	0	288		0	12	16
Cinema/Entertainment	0	23	8		3	0
Residential	0	58	35	0		3
Hotel	0	12	13	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	121	454	575	363	9	9
Restaurant	96	157	253	126	3	3
Cinema/Entertainment	0	0	0	0	0	0
Residential	46	27	73	21	1	1
Hotel	21	2	23	2	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	111	496	607	397	10	10
Restaurant	126	112	238	90	2	2
Cinema/Entertainment	0	0	0	0	0	0
Residential	31	16	47	13	0	0
Hotel	16	5	21	5	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

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

Appendix C

Detailed Trip Generation Calculations





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Lot	Name	Number of Units	Units	LU #	Land Use No./Type	Daily Total Trips	AM Peak Period			PM Peak Period		
							Total Trips	In (Trips)	Out (Trips)	Total Trips	In (Trips)	Out (Trips)
PD-1	Hale Townhomes	14	du	215	Single Family Attached Housing	101	7	2	5	8	5	3
	Airport Hotel	75	rms	310	Hotel	599	35	19	16	44	23	21
	18th Ave Multi-Family	60	du	221	Multi-Family Housing (Mid-Rise) Not Close to Rail Transit	272	22	5	17	23	14	9
	Mixed-Use Multi-Family	76	du	221	Multi-Family Housing (Mid-Rise) Not Close to Rail Transit	345	28	6	22	30	18	12
	Mixed-Use Commercial	4	ksf	820	Shopping Center (>150k)	148	3	2	1	14	7	7
	Manzanita Multi-Family	46	du	221	Multi-Family Housing (Mid-Rise) Not Close to Rail Transit	209	17	4	13	18	11	7
	In-Line Fast Food Restaurant	2	ksf	933	Fast-Food Restaurant without Drive-Through Window	901	86	50	36	66	33	33
	Drive Through Fast Food Restaurant	2	ksf	934	Fast-Food Restaurant with Drive-Through Window	935	89	46	43	66	34	32
	Chik-n-Pickle	20	ksf	820	Fast-Food Restaurant with Drive-Through Window	935	89	46	43	66	34	32
	Park/Public Plaza	4.3	acres	411	Shopping Center (>150k)	740	17	10	7	68	33	35
PD-2	Market Food Hall	12	ksf	820	Public Parks	3	0	0	0	0	0	0
	Flex/Event Space	6	ksf	820	Shopping Center (>150k)	444	10	6	4	41	20	21
	Festival Lane Commercial	6	ksf	820	Shopping Center (>150k)	222	5	3	2	20	10	10
	South Market St Commercial 1	62.4	ksf	820	Shopping Center (>150k)	222	5	3	2	20	10	10
	South Market St Commercial 2	62	ksf	820	Shopping Center (>150k)	2309	52	32	20	212	102	110
	Drive Through Fast Food Restaurant	2	ksf	820	Shopping Center (>150k)	2295	52	32	20	211	101	110
	Airport Rd Mixed-Use Multi-Family	54	du	221	Fast-Food Restaurant with Drive-Through Window	935	89	46	43	66	34	32
	Wellness Office Building	67.5	ksf	720	Multi-Family Housing (Mid-Rise) Not Close to Rail Transit	245	20	5	15	21	13	8
	Future Wellness Facility	70	ksf	610	Medical-Dental Office Building - Stand-Alone	2430	209	165	44	265	80	185
	Commercial/Retail	40.6	ksf	820	Hospital	754	57	38	19	60	21	39
PD-3	Auto Fueling/Potential Truck Fueling	5	ksf	945	Shopping Center (>150k)	1503	34	21	13	138	66	72
	Drive Through Fast Food Restaurant	4.4	ksf	934	Shopping Center (>150k)	207	5	3	2	19	9	10
					Convenience Store/Gas Station - VFP (2-8)	3121	203	101	102	242	121	121
					Fast-Food Restaurant with Drive-Through Window	2057	196	100	96	145	76	69
Total						21,932	1,330	745	585	1,863	875	988

Internal Capture												
Total Retail/Commercial	11,211	386	213	173	985	479	506					
	-1688	-41	-19	-22	-192	-101	-91					
Total Restaurant	5,763	549	288	261	409	211	198					
	-1592	-55	-37	-18	-185	-80	-105					
Total Residential	1,172	94	22	72	100	61	39					
	-481	-17	-2	-15	-64	-38	-26					
Total Hotel	599	35	19	16	44	23	21					
	-286	-4	-1	-3	-37	-21	-16					
Total Medical	3184	266	203	63	325	101	224					
	-220	-13	-10	-3	-29	-9	-20					
Other	3	0	0	0	0	0	0					
SUBTOTAL	17,665	1,200	676	524	1,356	626	730					

Daily	AM	PM	Pass By Trips	
-15%	0%	-29%	Pass-by Commercial	-1,381 0 0 0 -230 -110 -120
-53%	-50%	-55%	Pass-by Restaurant	-2,190 -247 -126 -122 -123 -72 -51
-58%	-60%	-56%	Pass-by Gasoline	-1,810 -122 -61 -61 -136 -68 -68
NET TOTAL TRIPS				12,284 831 490 341 867 377 491

Lot	Name	Number of Units	Units	LU #	Land Use No./Type	Saturday Daily	Saturday Peak		
						Total Trips	Total Trips	In (Trips)	Out (Trips)
PD-1	Hale Townhomes	14	du	215	Single Family Attached Housing	123	8	4	4
	Airport Hotel	75	rms	310	Hotel	605	54	30	24
	18th Ave Multi-Family	60	du	221	Multifamily Housing (Mid-Rise) Not Close to Rail Transit	274	23	12	11
	Mixed-Use Multi-Family	76	du	221	Multifamily Housing (Mid-Rise) Not Close to Rail Transit	347	30	15	15
	Mixed-Use Commercial	4	ksf	820	Shopping Center (>150k)	186	18	9	9
	Manzanita Multi-Family	46	du	221	Multifamily Housing (Mid-Rise) Not Close to Rail Transit	210	18	9	9
	In-Line Fast Food Restaurant	2	ksf	933	Fast-Food Restaurant without Drive-Through Window	1392	109	54	55
	Drive Through Fast Food Restaurant	2	ksf	934	Fast-Food Restaurant with Drive-Through Window	1232	111	56	55
	Drive Through Fast Food Restaurant	2	ksf	934	Fast-Food Restaurant with Drive-Through Window	1232	111	56	55
	Chik-n-Pickle	20	ksf	820	Shopping Center (>150k)	932	88	46	42
PD-2	Park/Public Plaza	4.3	acres	411	Public Parks	526	66	31	35
	Market Food Hall	12	ksf	820	Shopping Center (>150k)	559	53	27	26
	Flex/Event Space	6	ksf	820	Shopping Center (>150k)	280	26	14	12
	Festival Lane Commercial	6	ksf	820	Shopping Center (>150k)	280	26	14	12
	South Market St Commercial 1	62.4	ksf	820	Shopping Center (>150k)	2908	275	143	132
	South Market St Commercial 2	62	ksf	820	Shopping Center (>150k)	2889	273	142	131
	Drive Through Fast Food Restaurant	2	ksf	934	Fast-Food Restaurant with Drive-Through Window	1232	111	56	55
	Airport Rd Mixed-Use Multi-Family	54	du	221	Multifamily Housing (Mid-Rise) Not Close to Rail Transit	247	21	11	10
	Wellness Office Building	67.5	ksf	720	Medical-Dental Office Building - Stand-Alone	930	204	116	88
	Future Wellness Facility	70	ksf	610	Hospital	963	138	65	73
PD-3	Commercial/Retail	40.6	ksf	820	Shopping Center (>150k)	1892	179	93	86
	Retail	5.6	ksf	820	Shopping Center (>150k)	261	25	13	12
	Auto Fueling/Polnetrial Truck Fueling	5	ksf	945	Convenience Store/Gas Station - VFP (2-8)	1308	85	43	42
	Drive Through Fast Food Restaurant	4.4	ksf	934	Fast-Food Restaurant with Drive-Through Window	2711	243	124	119
Total						23,519	2,295	1,183	1,112

Internal Capture			
Total Retail/Commercial	11,495	1,048	544
	-1261	-115	-49
Total Restaurant	7,799	685	346
	-786	-69	-45
Total Residential	1,201	100	51
	-168	-14	-4
Total Hotel	605	54	30
	-78	-7	-2
Total Medical	1893	342	181
	-94	-17	-9
Other	526	66	31
SUBTOTAL	21,132	2,073	1,074
	999		

Daily	Peak	Pass By Trips
-10%	-10%	Pass-by Commercial
		-1,023
-53%	-53%	Pass-by Restaurant
		-3,682
-58%	-58%	Pass-by Gasoline
		-759
NET TOTAL TRIPS		15,668
		1,607
		842
		765

Appendix D

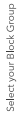
VMTIndex Screening Tool Output



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On the map, use the magnifying glass or bookmark to find your area of interest -

Select a single or multiple filters to create a subset of block groups VMT below or above regional VMT averages. Regions are jurisdictionally based: City / Unincorporated County (UC), County, or MPO.



If unselected all block groups in the mapview will list

НВХ: 21.1, НВУУ: 13.1



Find Your VMT

On the map, use the magnifying glass or bookmark to find your area of interest -

Search

Bookmark

Select

Use the selector to select and view block group VMT values.

Select

Multiple

Regional Filters

Select a single or multiple filters to create a subset of block groups VMT below or above regional VMT averages. Regions are jurisdictionally based: City / Unincorporated County (UC), County, or MPO.

HBX Filter by City / Uninc County

Below or above City VMT average

HBW Filter by City / Uninc County

Below or above City VMT average

HBX Filter by County

Below or above County VMT average

HBW Filter by County

Below or above County VMT average

HBX Filter by MPO

Below or above MPO VMT average

HBW Filter by MPO

Below or above MPO VMT average

Lower Lake

Search

Magnifying Glass

Bookmark

Select your Block Group

Your Block Group Data

If unselected all block groups in the mapview will list

Block Group: 060330007022

HBX VMT: 24.0

Higher than the City average

0 - 15 % below the County average

N/A

Higher than the State average

HBW VMT: 17.9

Higher than the City average

Higher than the County average

N/A

Higher than the State average

City: Clearlake

HBX VMT: 20.3, HBW VMT: 11.9

County: Lake

HBX VMT: 27.1, HBW VMT: 15.4

MPO: N/A

HBX VMT: , HBW VMT:

Statewide VMT Averages:

HBX: 21.1, HBW: 15.1

Jurisdiction (Resident HBX)

Vehicle Miles Traveled

24

20.3

27.1

City

County

MPO

Jurisdiction (Employee HBW)

Vehicle Miles Traveled

17.9

11.9

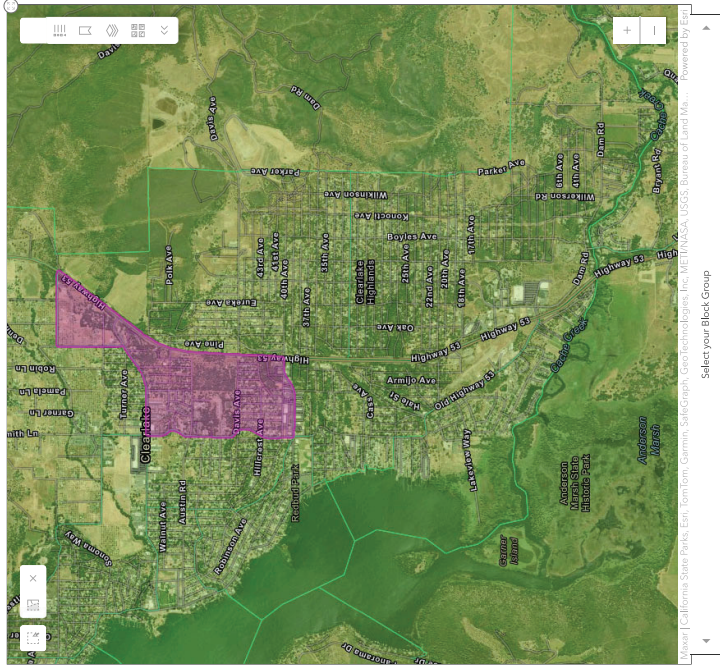
15.4

City

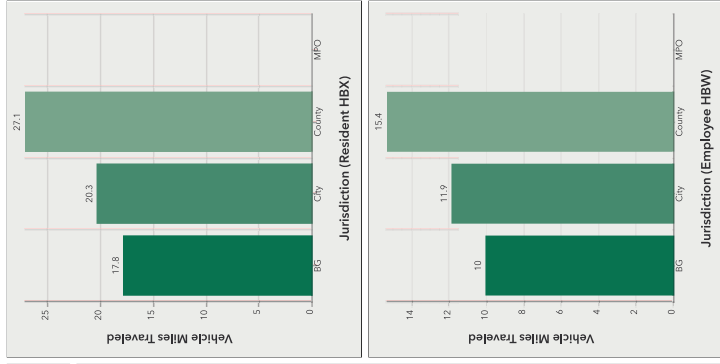
County

MPO

Find Your VMT On the map, use the magnifying glass or bookmark to find your area of interest -   Use the selector to select and view block group VMT values. 	Regional Filters <u>Select a single or multiple filters</u> to create a subset of filters to view VMT below or above regional VMT averages. Regions are <i>jurisdictionally based</i>: City / <i>unincorporated County</i> (UC), County, or MPO.	HBX Filter by City / Uninc County Below or above City VMT average	HBW Filter by City / Uninc County Below or above City VMT average	HBX Filter by County Below or above County VMT average	HBW Filter by County Below or above County VMT average	HBX Filter by MPO Below or above MPO VMT average	HBW Filter by MPO Below or above MPO VMT average
--	---	--	--	---	---	---	---



Your Block Group Data	
If unselected, all block groups in the mapview will list	
Block Group: 060330008021	
HBX VMT: 17.8	
0 - 15 % below the City average	
≥ 15% below the County average	
N/A	
≥ 15% below the State average	
HBW VMT: 10.0	
≥ 15% below the City average	
≥ 15% below the County average	
N/A	
≥ 15% below the State average	
City: Clearlake	
HBX VMT: 20.3 , HBW VMT: 11.9	
County: Lake	
HBX VMT: 27.1 , HBW VMT: 15.4	
MPO: N/A	
HBX VMT: , HBW VMT:	
Statewide VMT Averages:	
HBX: 21.1 , HBW: 15.1	



On the map, use the magnifying glass or bookmark to find your area of interest -

Select a single or multiple filters to create a subset of block groups VMT below or above regional VMT averages. Regions are jurisdictionally based: City / Unincorporated County (UC), County, or MPO.

HBW Filter by MPO
Below or above MPO VMT average



If unselected all block groups in the mapview will list

HBX VMT: 13.4

≥ 15% below the City average

≥ 15% below the County average

N/A

 $\geq 15\%$ below t

HBW VMT: 7.4

≥ 15% below the City average

≥ 15% below the County average

N/A

≥ 15% below the State average

City: Clearlake

HBX VMT: 20.3, HBW VMT: 11.9

County: Lake

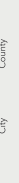
HBX VMI: 27.1, HBW VMI: 15.4

MPO: N/A

HBX VMI: HBW VMI:

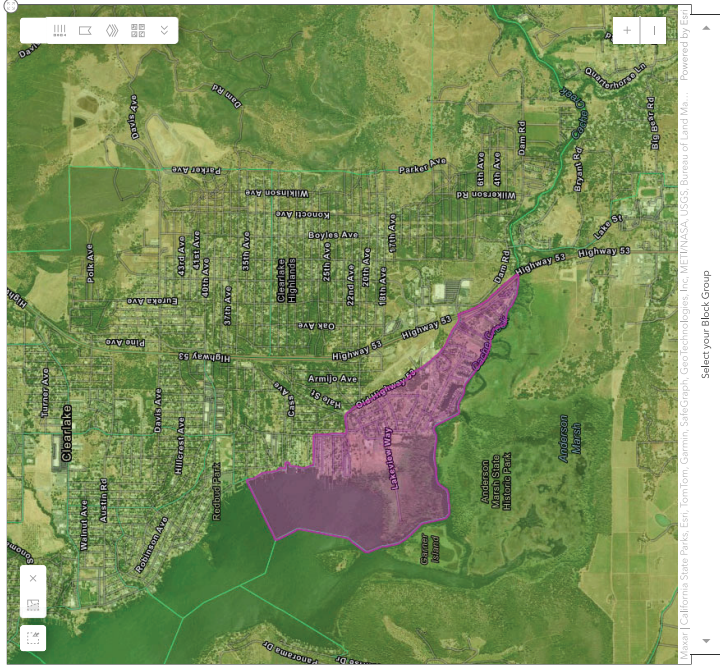
Statewide VMI Average

НВХ: 21.1, НВУУ: 13.1



On the map, use the magnifying glass or bookmark to find your area of interest -

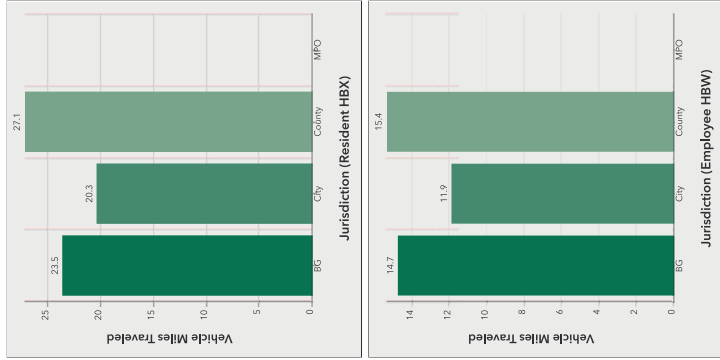
Select a single or multiple filters to create a subset of block groups VMT below or above regional VMT averages. Regions are jurisdictionally based: City / Unincorporated County (UC), County, or MPO.



If unselected all block groups in the mapview will list

If unselected all block groups in the mapview will list

ИВЛ: 21.1, ИВВ: 13.1





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Appendix E

Turn Lane Warrants Spreadsheets



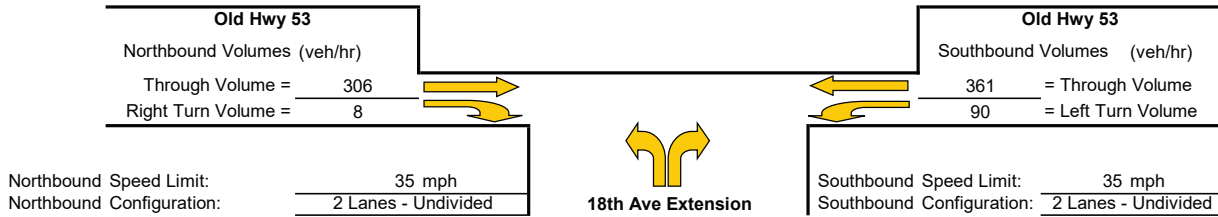
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Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Old Hwy 53/18th Ave Extension
Study Scenario: Saturday Future plus Project

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = 990.1
Advancing Volume Va = 314
If $AV < Va$ then warrant is met No

Right Turn Lane Warranted: NO

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -
Advancing Volume Va = 314
If $AV < Va$ then warrant is met -

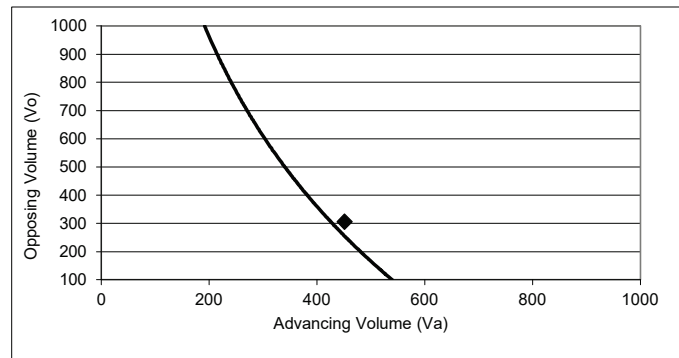
Right Turn Taper Warranted: NO

Southbound Left Turn Lane Warrants

Percentage Left Turns %lt 20.0 %

Advancing Volume Threshold AV 425 veh/hr

If $AV < Va$ then warrant is met



Study Intersection

Two lane roadway warrant threshold for: 35 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: YES

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

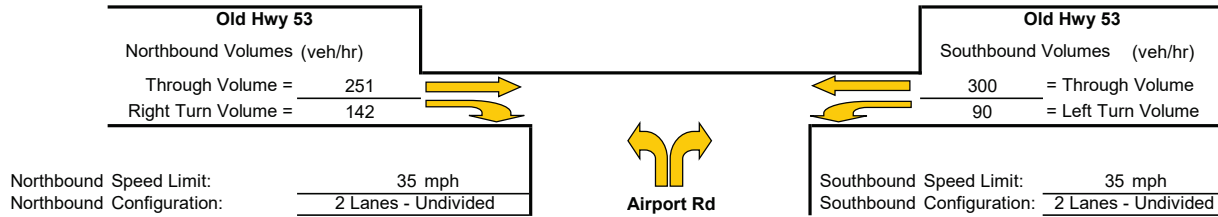
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Old Hwy 53/Airport Rd

Study Scenario: Saturday Future plus Project

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -15.2

Advancing Volume Va = 393

If $AV < Va$ then warrant is met Yes

Right Turn Lane Warranted: YES

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

N/A

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -

Advancing Volume Va = -

If $AV < Va$ then warrant is met -

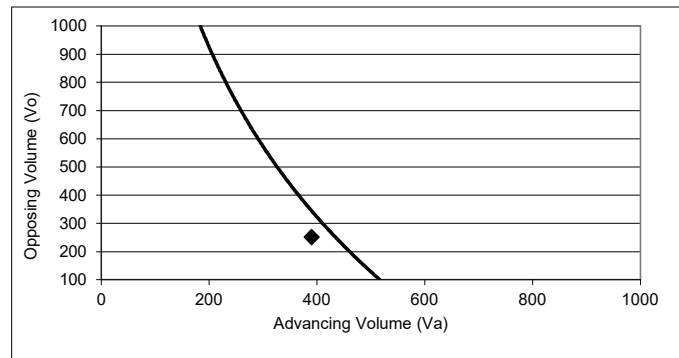
Right Turn Taper Warranted: N/A

Southbound Left Turn Lane Warrants

Percentage Left Turns %lt 23.1 %

Advancing Volume Threshold AV 434 veh/hr

If $AV < Va$ then warrant is met



Study Intersection

Two lane roadway warrant threshold for: 35 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

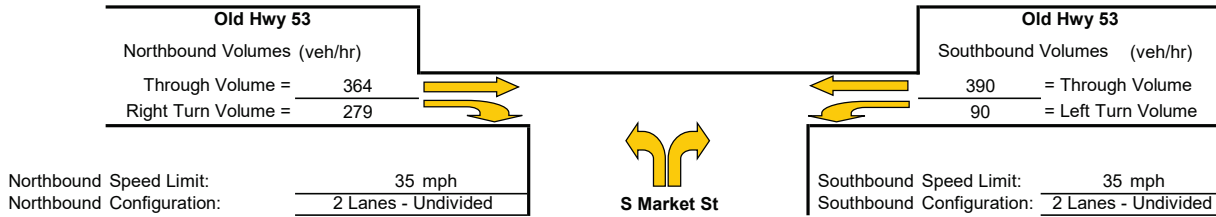
Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Old Hwy 53/S Market St

Study Scenario: Saturday Future plus Project

Direction of Analysis Street: North/South

Cross Street Intersects: From the East



Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = -1042.9

Advancing Volume Va = 643

If $AV < Va$ then warrant is met Yes

Right Turn Lane Warranted: YES

Northbound Right Turn Taper Warrants

(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

N/A

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = -

Advancing Volume Va = -

If $AV < Va$ then warrant is met -

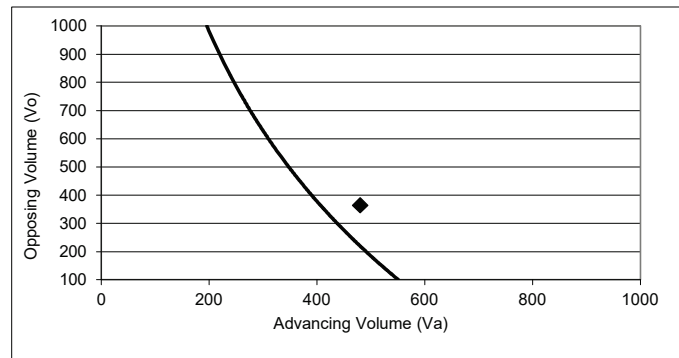
Right Turn Taper Warranted: N/A

Southbound Left Turn Lane Warrants

Percentage Left Turns %lt 18.8 %

Advancing Volume Threshold AV 407 veh/hr

If $AV < Va$ then warrant is met



Study Intersection

Two lane roadway warrant threshold for: 35 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: YES

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.



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Appendix F

Intersection Queuing Calculations



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Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 6.9
Level Of Service: A
Volume to Capacity (v/c): 0.371

Intersection Setup

Name	SR 53			18th Ave		
Approach	Northbound			Eastbound		
Lane Configuration	T T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	675.00	100.00	720.00	100.00	100.00	100.00
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00		55.00	30.00		30.00
Grade [%]	0.00		0.00	0.00		0.00
Curb Present	No		No	No		No
Crosswalk	Yes		Yes	Yes		Yes

Volumes

Name	SR 53			SR 53			18th Ave			18th Ave		
Base Volume Input [veh/h]	4	721	86	98	806	0	1	0	3	77	4	86
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	8	0	0	0	0	0	2	0	0	54
Total Hourly Volume [veh/h]	4	721	78	98	806	0	1	0	1	77	4	32
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	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	203	22	28	226	0	0	0	0	22	1	9
Total Analysis Volume [veh/h]	4	810	88	110	906	0	1	0	1	87	4	36
Presence of On-Street Parking	No	No	No	No	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_db, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Protect	Permis	Protect	Permis	Protect	Permis	Protect	Permis	Protect	Permis	Protect	Permis
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0	0	0
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	-	-	-	-	-	-	-	-
Lead / Lag	7	8	0	7	8	0	0	7	0	0	7	0	7	0
Minimum Green [s]	20	50	0	20	50	0	0	20	0	0	20	0	20	0
Maximum Green [s]	3.2	5.0	0.0	3.2	5.0	0.0	0.0	3.2	0.0	0.0	3.2	0.0	3.2	0.0
Amber [s]	2.0	1.5	0.0	2.0	1.5	0.0	0.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0
All red [s]	26	57	0	26	57	0	0	36	0	0	36	0	36	0
Split [s]	1.5	3.4	0.0	1.5	3.4	0.0	0.0	1.5	0.0	0.0	1.5	0.0	1.5	0.0
Vehicle Extension [s]	0	7	0	0	7	0	0	7	0	0	7	0	7	0
Walk [s]	0	26	0	0	17	0	0	23	0	0	23	0	23	0
Pedestrian Clearance [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	0.0	0.0
Delayed Vehicle Green [s]	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Rest in Walk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H1, Start-Up Lost Time [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	0.0	0.0
t2, Clearance Lost Time [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	0.0	0.0
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No	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	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	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	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	C	C	R
C, Cycle Length [s]	36	36	36	36	36	36	36	36	36	36	36
L, Total Lost Time per Cycle [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[1, p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g, l, Effective Green Time [s]	5	16	16	10	20	20	20	10	10	10	10
g / C, Green / Cycle	0.15	0.44	0.44	0.27	0.56	0.56	0.56	0.28	0.28	0.28	0.28
(v / s,) Volume / Saturation Flow Rate	0.00	0.24	0.25	0.06	0.24	0.24	0.00	0.00	0.06	0.06	0.02
s, saturation flow rate [veh/h]	1781	1870	1798	1781	1870	1870	1870	1517	1435	1589	1589
c, Capacity [veh/h]	269	828	796	487	1057	1057	579	601	451	601	451
d1, Uniform Delay [s]	13.12	7.46	7.47	10.21	4.53	4.53	9.33	9.33	9.33	9.33	9.33
k, delay calibration	0.04	0.13	0.13	0.04	0.13	0.13	0.04	0.04	0.04	0.04	0.04
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
d2, Incremental Delay [s]	0.01	0.67	0.71	0.09	0.32	0.32	0.00	0.04	0.04	0.03	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.01	0.55	0.55	0.23	0.43	0.43	0.00	0.15	0.15	0.08	0.08
d, Delay for Lane Group [s/veh]	13.12	8.13	8.18	10.30	4.85	4.85	9.33	9.97	9.97	9.56	9.56
Lane Group LOS	B	A	A	B	A	A	A	A	A	A	A
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/in]	0.02	1.11	1.09	0.40	0.31	0.31	0.01	0.43	0.16	0.43	0.16
50th-Percentile Queue Length [ft/in]	0.47	27.87	27.14	9.92	7.70	7.70	0.22	10.66	4.07	10.66	4.07
95th-Percentile Queue Length [veh/in]	0.03	2.01	1.95	0.71	0.55	0.55	0.02	0.77	0.77	0.77	0.29
95th-Percentile Queue Length [ft/in]	0.84	50.16	48.85	17.86	13.85	13.85	0.40	19.19	19.19	19.19	7.32

Movement, Approach, & Intersection Results

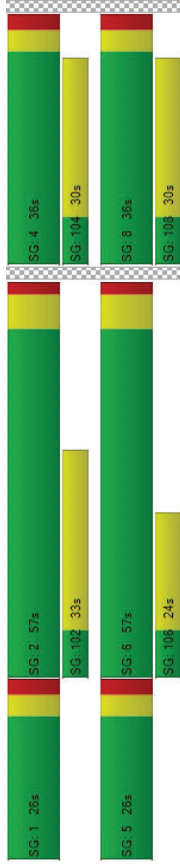
[illegible]

Other Modes

g_walk.m, Effective Walk Time [s]							11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]							0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]							0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]							878	878	878	878
L_p.int, Pedestrian LOS Score for Intersection							3.061	2.931	1.668	2.087
Crosswalk LOS										
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]							2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]							2789	2789	1701	1701
d_b, Bicycle Delay [s]							2.82	2.82	0.41	0.41
L_b.int, Bicycle LOS Score for Intersection							2.310	2.398	1.566	1.858
Bicycle LOS										
							B	B	A	A

Sequence

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



Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Signalized	Delay (sec / veh):	24.6
HCM 6th Edition	Level Of Service:	C
15 minutes	Volume to Capacity (v/c):	0.47

Intersection Setup

Name	SR 53				SR 53				Old Hwy 53				Dam Rd	
	Northbound				Southbound				Eastbound				Westbound	
Approach	זוהר				זוהר				זוהר				זוהר	
Lane Configuration	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	Left	Thru	Right
Turning Movement														
Lane Width [ft]	1	0	0		2	0	0		1	0	1	1	0	1
No. of Lanes in Entry Pocket														
Entry Pocket Length [ft]	570.00	100.00	100.00		760.00	100.00	100.00		150.00	100.00	100.00	110.00	140.00	250.00
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]	55.00				55.00				35.00			35.00		
Grade [%]	0.00				0.00				0.00			0.00		
Curb Present	No				No				No			No		
Crosswalk	Yes				Yes				Yes			Yes		

Volumes

Name	SR 53			SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	104	583	235	227	31	23	147	180	160	107	202				
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				
Heavy Vehicles Percentage [%]	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				
In-Process Volume [veh/h]	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				
Diverged Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0				
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0				
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0				
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0				
Right Turn on Red Volume [veh/h]	0	0	14	0	0	0	0	83	0	0	40				
Total Hourly Volume [veh/h]	104	583	221	227	641	21	23	147	97	160	162				
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700				
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				
Total 15-Minute Volume [veh/h]	30	168	64	65	184	6	7	42	28	46	31				
Total Analysis Volume [veh/h]	120	670	254	261	737	24	28	169	111	184	123				
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No				
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0				
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0				
v_d_o, Outbound Pedestrian Volume crossing major street	0	0	0	0	0	0	3	0	0	0	0				
v_d_i, Inbound Pedestrian Volume crossing major street [	3	0	0	0	0	0	0	0	0	0	0				
v_o_o, Outbound Pedestrian Volume crossing minor stre	1	0	0	0	0	0	0	0	0	0	1				
v_o_i, Inbound Pedestrian Volume crossing minor street [	0	0	0	0	0	0	0	0	0	0	0				
v_ab, Corner Pedestrian Volume [ped/h]	0	0	0	0	0	0	0	0	0	0	0				
Bicycle Volume [bicycles/h]	0	0	0	0	0	0	2	0	0	0	1				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

[illegible]

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	R	C	R
C, Cycle Length [s]	67	67	67	67	67	67	67	67	67	67	67	67	67
L, Total Lost Time per Cycle [s]	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.20	6.50	5.20	6.50	5.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	4.50	3.20	4.50	0.00
g, l, Effective Green Time [s]	6	21	21	8	23	23	2	11	11	11	5	14	27
g / C, Green / Cycle	0.09	0.31	0.31	0.12	0.34	0.34	0.03	0.16	0.16	0.08	0.21	0.41	0.41
(v / s), Volume / Saturation Flow Rate	0.07	0.26	0.26	0.08	0.20	0.20	0.01	0.09	0.07	0.05	0.07	0.12	0.12
s, saturation flow rate [veh/h]	1781	1870	1696	3459	1870	1849	1781	1870	1657	3459	1870	1577	1577
c, Capacity [veh/h]	158	579	525	401	629	622	52	297	247	279	394	645	645
d1, Uniform Delay [s]	29.90	21.60	21.61	28.40	18.59	18.59	32.14	26.12	25.55	29.99	22.41	13.25	13.25
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00
d2, Incremental Delay [s]	7.19	3.28	3.63	1.79	0.95	0.96	7.42	1.71	1.27	2.66	0.45	0.24	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.84	0.84	0.65	0.61	0.61	0.50	0.57	0.45	0.66	0.31	0.29	0.29
d, Delay for Lane Group [s/veh]	37.08	24.88	25.24	30.20	19.54	19.55	39.56	27.83	26.82	32.05	22.85	13.50	13.50
Lane Group LOS	D	C	C	C	B	B	D	C	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/m]	1.98	6.31	5.78	1.86	4.18	4.13	0.50	2.47	1.58	1.46	1.57	1.70	1.70
50th-Percentile Queue Length [ft/m]	49.55	157.64	144.42	46.41	104.44	103.34	12.53	61.79	39.61	36.60	39.35	42.57	42.57
95th-Percentile Queue Length [veh/m]	3.57	10.42	9.72	3.34	7.52	7.44	0.80	4.45	2.85	2.64	2.83	3.07	3.07
95th-Percentile Queue Length [ft/m]	89.19	260.59	242.96	83.54	188.00	186.01	22.56	111.22	71.29	65.88	70.83	76.63	76.63

Movement, Approach, & Intersection Results

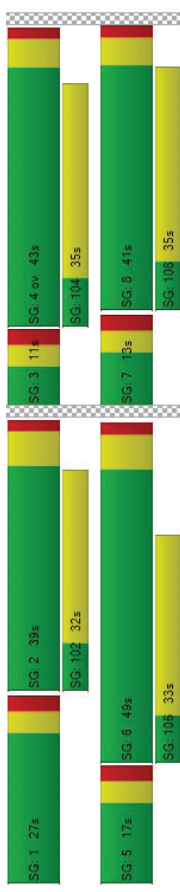
d_M, Delay for Movement [s/veh]	37.08	24.88	25.24	30.20	19.55	19.55	27.83	26.82	32.05	22.85	13.50	13.50
Movement LOS	D	C	C	C	B	B	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	26.43				22.27		28.46				22.98	
Approach LOS	C				C		C				C	
d_I, Intersection Delay [s/veh]					24.57							
Intersection LOS					C							
Intersection V/C					0.478							

Other Modes

g, Walk, mt, Effective Walk Time [s]	11.0				11.0							11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00				0.00							0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00				0.00							0.00
d_p, Pedestrian Delay [s]	23.41				23.41							23.41
l_p.int, Pedestrian LOS Score for Intersection	3.080				3.033							2.727
Crosswalk LOS	C				C							B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000							2000
c_b, Capacity of the bicycle lane [bicycles/h]	1268				970							1116
d_b, Bicycle Delay [s]	4.48				8.89							6.55
l_b.int, Bicycle LOS Score for Intersection	2.432				2.411							2.439
Bicycle LOS	B				B							B

Sequence

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



Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 5.9
Level Of Service: A
Volume to Capacity (v/c): 0.333

Intersection Setup

Name	SR 53			18th Ave		
Approach	Northbound			Eastbound		
Lane Configuration	T T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	675.00	100.00	720.00	100.00	100.00	100.00
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00		55.00	30.00		30.00
Grade [%]	0.00		0.00	0.00		0.00
Curb Present	No		No	No		No
Crosswalk	Yes		Yes	Yes		Yes

Volumes

Name	SR 53			SR 53			18th Ave			18th Ave		
Base Volume Input [veh/h]	2	854	55	52	729	0	1	1	0	58	0	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	1	0	0	0	0	0	0	0	0	39
Total Hourly Volume [veh/h]	2	854	54	52	729	0	1	1	0	58	0	27
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	225	14	14	192	0	0	0	0	15	0	7
Total Analysis Volume [veh/h]	2	899	57	55	767	0	1	1	0	61	0	28
Presence of On-Street Parking	No	No	No	No	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_db, Outbound Pedestrian Volume crossing major street	0			0			1			1		
v_di, Inbound Pedestrian Volume crossing major street	1			1			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Protect	Permis	Protect	Permis	Protect	Permis	Protect	Permis	Protect	Permis
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Lead / Lag	7	8	0	7	8	0	0	7	0	0	7	0
Minimum Green [s]	20	50	0	20	50	0	0	20	0	0	20	0
Maximum Green [s]	3.2	5.0	0.0	3.2	5.0	0.0	0.0	3.2	0.0	0.0	3.2	0.0
Amber [s]	2.0	1.5	0.0	2.0	1.5	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	26	57	0	26	57	0	0	36	0	0	36	0
Split [s]	1.5	3.4	0.0	1.5	3.4	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Vehicle Extension [s]	0	7	0	0	7	0	0	7	0	0	7	0
Walk [s]	0	26	0	0	17	0	0	23	0	0	23	0
Pedestrian Clearance [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
Delayed Vehicle Green [s]	No	No	No	No	No	No	No	No	No	No	No	No
Rest in Walk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H1, Start-Up Lost Time [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
t2, Clearance Lost Time [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
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	C	R
C, Cycle Length [s]	33	33	33	33	33	33	33	33	33	33
L, Total Lost Time per Cycle [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[1, p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g, I, Effective Green Time [s]	5	16	16	8	18	18	9	9	9	9
g / C, Green / Cycle	0.16	0.48	0.48	0.24	0.56	0.56	0.28	0.28	0.28	0.28
(v / s), Volume / Saturation Flow Rate	0.00	0.26	0.26	0.03	0.21	0.21	0.00	0.04	0.04	0.02
s, saturation flow rate [veh/h]	1781	1870	1826	1781	1870	1870	1647	1414	1588	1588
c, Capacity [veh/h]	287	892	871	432	1044	1044	625	614	446	446
d1, Uniform Delay [s]	11.67	6.11	6.12	9.81	4.07	4.07	8.58	8.96	8.73	8.73
k, delay calibration	0.04	0.13	0.13	0.04	0.13	0.13	0.04	0.04	0.04	0.04
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]	0.00	0.60	0.62	0.05	0.25	0.25	0.00	0.03	0.02	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.01	0.54	0.54	0.13	0.37	0.37	0.00	0.10	0.06	0.06
d, Delay for Lane Group [s/veh]	11.68	6.71	6.74	9.86	4.32	4.32	8.58	8.98	8.75	8.75
Lane Group LOS	B	A	A	A	A	A	A	A	A	A
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/in]	0.01	0.66	0.65	0.17	0.09	0.09	0.01	0.24	0.11	0.11
50th-Percentile Queue Length [ft/in]	0.19	16.38	16.16	4.29	2.25	2.25	0.19	6.02	2.71	2.71
95th-Percentile Queue Length [veh/in]	0.01	1.18	1.16	0.31	0.16	0.16	0.01	0.43	0.20	0.20
95th-Percentile Queue Length [ft/in]	0.34	29.49	29.08	7.73	4.05	4.05	0.34	10.84	4.88	4.88

Movement, Approach, & Intersection Results

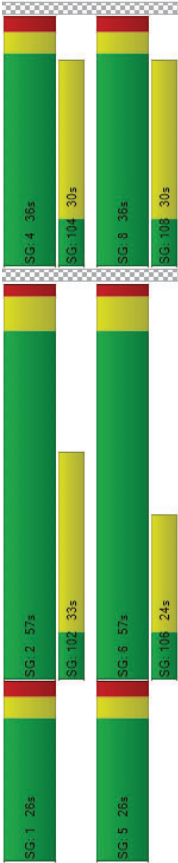
d.M. Delay for Movement [s/veh]	11.68	6.72	6.74	9.86	4.32	4.32	6.58	6.58	6.58	6.58	6.58	6.58	6.75
Movement LOS	B	A	A	A	A	A	A	A	A	A	A	A	A
d.A. Approach Delay [s/veh]	6.74	A	A	4.69	A	A	6.58	A	A	A	A	8.91	
Approach LOS	A	A	A	A	A	A	A	A	A	A	A	A	
d.J. Intersection Delay [s/veh]					A	5.94							
Intersection LOS						A							
Intersection V/C						0.333							

Other Modes

g. Walk/mt. Effective Walk Time [s]	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/veh]	29764.55	30218.12	30218.12	30218.12	30218.12	30218.12	30218.12	30218.12	30218.12	30218.12	30218.12	30218.12	30218.12
d.p. Pedestrian Delay [s]	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34
L.p.int. Pedestrian LOS Score for Intersection	2.964	2.878	2.878	2.878	2.878	2.878	2.878	2.878	2.878	2.878	2.878	2.878	2.878
Crosswalk LOS	C	C	C	C	C	C	C	C	C	C	C	C	C
s_b. Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
c_b. Capacity of the bicycle lane [bicycles/h]	3060	3060	3060	3060	3060	3060	3060	3060	3060	3060	3060	3060	3060
d_b. Bicycle Delay [s]	4.64	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63
L_b.int. Bicycle LOS Score for Intersection	2.351	2.238	2.238	2.238	2.238	2.238	2.238	2.238	2.238	2.238	2.238	2.238	2.238
Bicycle LOS	B	B	B	B	B	B	B	B	B	B	B	B	B

Sequence

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



Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.389

Intersection Setup

Name	SR 53	SR 53	SR 53	Old Hwy 53	Dam Rd
Approach	Northbound	Southbound	Eastbound	Westbound	
Lane Configuration	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right
Turning Movement	12.00 12.00 12.00	12.00 12.00 12.00	12.00 12.00 12.00	12.00 12.00 12.00	12.00 12.00 12.00
Lane Width [ft]	12.00 12.00 12.00	12.00 12.00 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	2 0 0	1 0 1	1 0 1	1 0 1
Entry Pocket Length [ft]	570.00 100.00 100.00	760.00 100.00 100.00	150.00 100.00 100.00	110.00 140.00 100.00	250.00 100.00 100.00
No. of Lanes in Exit Pocket	0 0 0	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	0.00 0.00 0.00
Speed [mph]	55.00	55.00	35.00	35.00	35.00
Grade [%]	0.00	0.00	0.00	0.00	0.00
Curb Present	No	No	No	No	No
Crosswalk	Yes	Yes	Yes	Yes	Yes

Volumes

[illegible]

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
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

[illegible]

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	R	C	L	C	R	R	C	R
C, Cycle Length [s]	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61
L, Total Lost Time per Cycle [s]	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.60	5.60	5.20	5.60	5.20	5.60	5.20	5.60	5.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.60	3.60	3.20	3.60	3.20	3.60	3.20	3.60	0.00
g, l, Effective Green Time [s]	7	18	18	6	17	17	2	10	10	10	5	13	13	25	25	25	25
g / C, Green / Cycle	0.11	0.29	0.29	0.10	0.28	0.28	0.02	0.16	0.16	0.16	0.08	0.21	0.40	0.40	0.40	0.40	0.40
s, saturation flow rate [veh/h]	0.08	0.24	0.24	0.05	0.18	0.18	0.01	0.05	0.04	0.05	0.05	0.06	0.10	0.10	0.10	0.10	0.10
c, Capacity [veh/h]	1781	1870	1760	3459	1870	1848	1781	1870	1584	1584	3459	1870	1588	1588	1588	1588	1588
d1, Uniform Delay [s]	28.45	20.03	20.07	26.01	19.03	19.03	29.44	22.74	22.43	27.34	20.07	12.10	12.10	12.10	12.10	12.10	12.10
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.89	3.00	3.27	0.99	1.20	1.22	7.60	0.63	0.50	2.17	0.34	0.21	0.21	0.21	0.21	0.21	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.82	0.82	0.47	0.62	0.62	0.47	0.33	0.25	0.60	0.26	0.26	0.25
d, Delay for Lane Group [s/veh]	32.33	23.04	23.33	27.00	20.24	20.25	37.04	23.37	22.93	29.51	20.41	12.31	12.31
Lane Group LOS	C	C	C	C	C	C	D	C	C	C	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/m]	2.11	5.16	4.92	1.00	3.46	3.42	0.38	1.21	0.76	1.12	1.15	1.31	1.31
50th-Percentile Queue Length [ft/m]	52.69	128.95	122.98	25.07	86.42	85.49	9.47	30.35	19.10	28.12	28.82	32.64	32.64
95th-Percentile Queue Length [veh/m]	3.79	8.88	8.56	1.81	6.22	6.16	0.68	2.19	1.38	2.02	2.07	2.35	2.35
95th-Percentile Queue Length [ft/m]	94.84	222.06	213.92	45.13	155.55	153.89	17.05	54.63	34.38	50.61	51.87	58.76	58.76

Movement, Approach, & Intersection Results

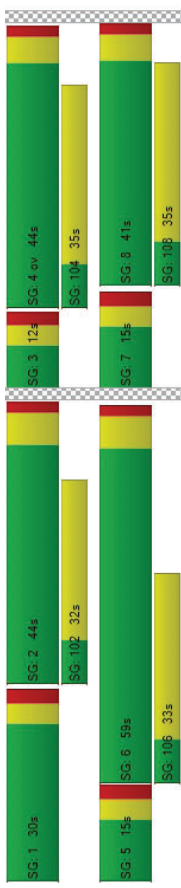
d, M, Delay for Movement [s/veh]	32.33	23.15	23.33	27.00	20.24	20.25	37.04	23.37	22.93	29.51	20.41	12.31	12.31
Movement LOS	C	C	C	C	C	C	D	C	C	C	C	C	B
d, A, Approach Delay [s/veh]	24.51				21.57		24.79					20.71	
Approach LOS	C				C		C					C	
d, I, Intersection Delay [s/veh]							22.88						
Intersection LOS							C						
Intersection V/C							0.389						

Other Modes

g, Walk, mt, Effective Walk Time [s]	11.0				11.0							11.0	
M, corner, Corner Circulation Area [ft ² /ped]	0.00				0.00							0.00	
M, CW, Crosswalk Circulation Area [ft ² /ped]	0.00				0.00							0.00	
d, p, Pedestrian Delay [s]	20.50				20.50		20.50					20.50	
l, p, int, Pedestrian LOS Score for Intersection	3.009				2.970		2.403					2.651	
Crosswalk LOS	C				C		B					B	
s, b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000		2000					2000	
c, b, Capacity of the bicycle lane [bicycles/h]	1721				1229		1160					1259	
d, b, Bicycle Delay [s]	0.59				4.53		5.38					4.19	
l, b, int, Bicycle LOS Score for Intersection	2.413				2.243		2.018					2.324	
Bicycle LOS	B				B		B					B	

Sequence

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



Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 4.1
Level Of Service: A
Volume to Capacity (v/c): 0.211

Intersection Setup

Name	SR 53			18th Ave		
Approach	Northbound			Eastbound		
Lane Configuration	TTL			TTL		
Turning Movement	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	675.00	100.00	720.00	100.00	100.00	100.00
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Speed [mph]	55.00	55.00	55.00	30.00	30.00	30.00
Grade [%]	0.00	0.00	0.00	0.00	0.00	0.00
Curb Present	No	No	No	No	No	No
Crosswalk	Yes	Yes	Yes	Yes	Yes	Yes

Volumes

Name	SR 53			18th Ave			18th Ave		
Base Volume Input [veh/h]	2	568	44	42	580	3	0	3	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	3	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	568	41	42	580	3	0	3	23
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	146	11	11	149	1	0	1	6
Total Analysis Volume [veh/h]	2	586	42	43	598	3	0	3	24
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [h]	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [h]	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing major street	0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0		
Bicycle Volume [bicycles/h]	0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Protect	Permis	Protect	Permis	Protect	Permis	Protect	Permis	Protect	Permis
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Lead / Lag	7	8	0	7	8	0	0	7	0	0	7	0
Minimum Green [s]	20	50	0	20	50	0	0	20	0	0	20	0
Maximum Green [s]	3.2	5.0	0.0	3.2	5.0	0.0	0.0	3.2	0.0	0.0	3.2	0.0
Amber [s]	2.0	1.5	0.0	2.0	1.5	0.0	0.0	2.0	0.0	0.0	2.0	0.0
All red [s]	26	57	0	26	57	0	0	36	0	0	36	0
Split [s]	1.5	3.4	0.0	1.5	3.4	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Vehicle Extension [s]	0	7	0	0	7	0	0	7	0	0	7	0
Walk [s]	0	26	0	0	17	0	0	23	0	0	23	0
Pedestrian Clearance [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
Delayed Vehicle Green [s]	No	No	No	No	No	No	No	No	No	No	No	No
Rest in Walk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H1, Start-Up Lost Time [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
t2, Clearance Lost Time [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
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	C	C	R
C, Cycle Length [s]	28	28	28	28	28	28	28	28	28	28	28
L, Total Lost Time per Cycle [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g,I, Effective Green Time [s]	5	15	15	7	16	16	16	7	7	7	7
g / C, Green / Cycle	0.19	0.51	0.51	0.26	0.58	0.58	0.58	0.23	0.23	0.23	0.23
(v / s) , Volume / Saturation Flow Rate	0.00	0.17	0.17	0.02	0.16	0.16	0.16	0.00	0.00	0.00	0.00
s, saturation flow rate [veh/h]	1781	1870	1826	1781	1870	1867	1867	1718	1410	1589	373
c, Capacity [veh/h]	333	951	929	458	1082	1080	1080	528	582	582	373
d1, Uniform Delay [s]	9.47	4.16	4.17	8.09	3.03	3.03	3.03	8.42	8.54	8.54	8.41
k, delay calibration	0.04	0.13	0.13	0.04	0.13	0.13	0.13	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.24	0.25	0.03	0.16	0.16	0.16	0.00	0.01	0.01	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.01	0.33	0.33	0.09	0.28	0.28	0.28	0.01	0.04	0.01	0.01
d, Delay for Lane Group [s/veh]	9.47	4.40	4.41	8.13	3.19	3.19	3.19	8.42	8.55	8.42	8.42
Lane Group LOS	A	A	A	A	A	A	A	A	A	A	A
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.01	0.06	0.06	0.09	0.05	0.05	0.05	0.02	0.08	0.01	0.01
50th-Percentile Queue Length [ft/ln]	0.13	1.58	1.58	2.15	1.21	1.21	1.21	0.49	1.98	0.33	0.33
95th-Percentile Queue Length [veh/ln]	0.01	0.11	0.11	0.15	0.09	0.09	0.09	0.04	0.14	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.23	2.84	2.85	3.87	2.18	2.18	2.18	0.88	3.56	0.59	0.59

Movement, Approach, & Intersection Results

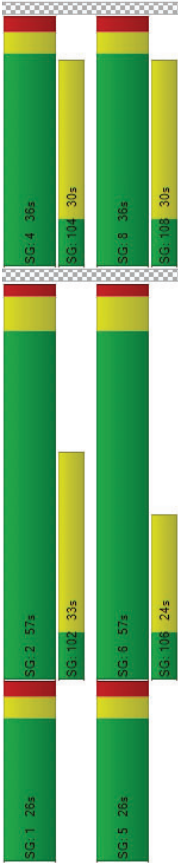
d.M. Delay for Movement [s/veh]	9.47	4.41	4.41	8.13	3.19	3.19	8.42	8.42	8.42	8.55	8.55	8.42
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
d.A. Approach Delay [s/veh]	4.42				3.52		8.42			8.53		
Approach LOS	A				A		A			A		
d.J. Intersection Delay [s/veh]					A		4.09					
Intersection LOS							A					
Intersection V/C							0.211					

Other Modes

g. Walk/mt. Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M. corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M. CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d.p. Pedestrian Delay [s]	5.35			5.35			5.35			5.35		
L.p.int. Pedestrian LOS Score for Intersection	2.713			2.679			1.645			1.968		
Crosswalk LOS	B			B			A			A		
s.b. Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c.b. Capacity of the bicycle lane [bicycles/h]	3550			3550			2165			2165		
d.b. Bicycle Delay [s]	8.55			8.55			0.10			0.10		
L.b.int. Bicycle LOS Score for Intersection	2.062			2.091			1.570			1.667		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Control Type:	Signalized	Delay (sec / veh):	20.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.291

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	זר			זר			זר			זר		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	88	366	147	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverged Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	32	0	0	0	8	0	0	76	0	80
Total Hourly Volume [veh/h]	88	366	115	175	415	20	16	113	42	137	91	119
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	22	93	29	45	106	5	4	29	11	35	23	30
Total Analysis Volume [veh/h]	90	373	117	179	423	20	16	115	43	140	93	121
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v _{do} , Outbound Pedestrian Volume crossing major street	1			2			0			0		
v _{di} , Inbound Pedestrian Volume crossing major street [	0			0			1			2		
v _{co} , Outbound Pedestrian Volume crossing minor stre	0			0			0			0		
v _{ci} , Inbound Pedestrian Volume crossing minor street[	0			0			0			0		
v _{ab} , Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

[illegible]

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	51	51	51	51	51	51	51	51	51	51	51	51
L, Total Lost Time per Cycle [s]	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.60	5.20	5.60	5.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	3.60	3.60	3.20	3.60	0.00
g, I, Effective Green Time [s]	4	10	10	5	11	11	1	9	9	4	12	23
g / C, Green / Cycle	0.07	0.20	0.20	0.09	0.22	0.22	0.02	0.18	0.18	0.09	0.25	0.45
(v / s), I Volume / Saturation Flow Rate	0.05	0.14	0.14	0.05	0.12	0.12	0.01	0.06	0.03	0.04	0.05	0.08
s, saturation flow rate [veh/h]	1781	1870	1720	3459	1870	1836	1781	1870	1587	3459	1870	1588
c, Capacity [veh/h]	128	371	341	315	407	400	37	340	288	297	462	712
d1, Uniform Delay [s]	23.04	18.87	18.91	22.12	17.64	17.65	24.58	18.12	17.48	22.11	15.16	8.37
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.86	2.23	2.52	1.61	1.15	1.18	8.03	0.59	0.24	1.17	0.21	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.70	0.68	0.69	0.57	0.55	0.55	0.44	0.34	0.15	0.47	0.20	0.17
d, Delay for Lane Group [s/veh]	29.90	21.10	21.43	23.73	18.79	18.84	32.61	18.71	17.71	23.28	15.37	8.48
Lane Group LOS	C	C	C	C	B	B	C	B	B	C	B	A
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/m]	1.10	2.36	2.23	0.90	1.90	1.88	0.25	1.09	0.39	0.76	0.76	0.63
50th-Percentile Queue Length [ft/m]	27.52	59.00	55.71	22.44	47.47	46.92	6.34	27.14	9.77	18.99	19.01	15.80
95th-Percentile Queue Length [veh/m]	1.98	4.25	4.01	1.62	3.42	3.38	0.46	1.95	0.70	1.37	1.37	1.14
95th-Percentile Queue Length [ft/m]	49.54	106.20	100.28	40.40	85.45	84.46	11.42	48.86	17.58	34.18	34.22	28.43

Movement, Approach, & Intersection Results

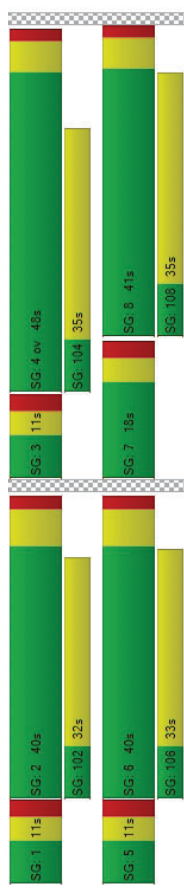
d, M, Delay for Movement [s/veh]	29.90	21.21	21.43	23.73	18.81	18.84	32.61	18.71	17.71	23.28	15.37	8.48
Movement LOS	C	C	C	C	B	B	C	B	B	C	B	A
d, A, Approach Delay [s/veh]	22.60				20.23			19.74			16.14	
Approach LOS	C				C			B			B	
d, I, Intersection Delay [s/veh]					20.14							
Intersection LOS					C							
Intersection V/C					0.291							

Other Modes

g, Walk, mt, Effective Walk Time [s]	11.0				11.0			11.0				11.0
M, corner, Corner Circulation Area [ft ² /ped]	0.00				0.00			0.00				0.00
M, CW, Crosswalk Circulation Area [ft ² /ped]	0.00				0.00			0.00				0.00
d, p, Pedestrian Delay [s]	15.52				15.52			15.52				15.52
I, p, int, Pedestrian LOS Score for Intersection	2.775				2.795			2.338				2.700
Crosswalk LOS	C				C			B				B
s, b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000			2000				2000
c, b, Capacity of the bicycle lane [bicycles/h]	1323				1323			1398				1675
d, b, Bicycle Delay [s]	2.90				2.90			2.29				0.67
I, b, int, Bicycle LOS Score for Intersection	2.065				2.079			1.972				2.276
Bicycle LOS	B				B			A				B

Sequence

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



Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 14.7
Level Of Service: B
Volume to Capacity (v/c): 0.525

Intersection Setup

Name	SR 53			SR 53			18th Ave		
Approach	Northbound			Southbound			Eastbound		
Lane Configuration	T T T			T T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	1	0
Entry Pocket Length [ft]	675.00	100.00	100.00	720.00	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
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00		
Grade [%]	0.00			0.00			0.00		
Curb Present	No			No			No		
Crosswalk	Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			18th Ave			18th Ave		
Base Volume Input [veh/h]	123	868	15	70	1028	90	90	20	118	20	25	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	8	0	0	0	0	0	2	0	0	54
Total Hourly Volume [veh/h]	123	868	7	70	1028	90	90	20	116	20	25	26
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	244	2	20	288	25	25	6	33	6	7	7
Total Analysis Volume [veh/h]	138	975	8	79	1155	101	101	22	130	22	28	29
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0			0			0			0		
v_dli, Inbound Pedestrian Volume crossing	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_cil, Inbound Pedestrian Volume crossing	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	145
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss
Signal Group	5	2	0	1	6	0	7	4
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-
Minimum Green [s]	7	8	0	7	8	0	7	0
Maximum Green [s]	21	50	0	21	50	0	21	31
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	3.2
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	2.0
Split [s]	26	57	0	26	57	0	26	36
Vehicle Extension [s]	1.5	3.4	0.0	1.5	3.4	0.0	3.0	1.5
Walk [s]	0	7	0	0	7	0	0	7
Pedestrian Clearance [s]	0	26	0	0	17	0	0	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest in Walk	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes	No	No	Yes	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
Detector Length [ft]	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

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	L	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I1, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g, I, Effective Green Time [s]	12	29	29	10	28	28	11	13	7	9		
g / C, Green / Cycle	0.19	0.48	0.48	0.17	0.46	0.46	0.18	0.22	0.12	0.16		
(v / s), Volume / Saturation Flow Rate	0.08	0.26	0.26	0.04	0.34	0.34	0.06	0.09	0.01	0.03		
s, saturation flow rate [veh/h]	1781	1870	1864	1781	1870	1818	1781	1625	1781	1716		
c, Capacity [veh/h]	344	906	903	309	869	845	326	356	220	274		
d1, Uniform Delay [s]	21.07	10.77	10.77	21.34	12.95	12.98	21.12	20.08	23.22	21.81		
k, delay calibration	0.04	0.13	0.13	0.04	0.13	0.13	0.11	0.04	0.11	0.04		
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]	0.28	0.59	0.60	0.16	1.41	1.47	0.54	0.30	0.20	0.14		
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
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	0.40	0.54	0.54	0.26	0.73	0.73	0.31	0.43	0.10	0.21		
d, Delay for Lane Group [s/veh]	21.35	11.36	11.37	21.50	14.36	14.44	21.65	20.38	23.41	21.95		
Lane Group LOS	C	B	B	C	B	B	C	C	C	C		
Critical Lane Group	Yes	No	No	No	No	No	Yes	Yes	Yes	No		
50th-Percentile Queue Length [veh/ln]	1.42	3.16	3.16	0.81	5.00	4.90	1.19	1.71	0.27	0.66		
50th-Percentile Queue Length [ft/ln]	35.56	79.12	78.93	20.30	125.01	122.54	29.67	42.82	6.77	16.51		
95th-Percentile Queue Length [veh/ln]	2.56	5.70	5.68	1.46	8.67	8.53	2.14	3.08	0.49	1.19		
95th-Percentile Queue Length [ft/ln]	64.01	142.42	142.07	36.54	216.69	213.31	53.41	77.07	12.19	29.72		

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.35	11.36	11.37	21.50	14.39	14.44	21.65	20.38	20.38	23.41	21.95	21.95
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	14.82	12.59			14.82		20.89			22.35		
Approach LOS		B			B		C			C		
d_I, Intersection Delay [s/veh]						14.69						
Intersection LOS						B						
Intersection V/C						0.525						

Other Modes

g_Walk,mt, Effective Walk Time [s]	11.0		11.0		11.0						11.0	
M_corner, Corner Circulation Area [ft²/ped]	0.00		0.00		0.00		0.00				0.00	
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00		0.00		0.00		0.00				0.00	
d_p, Pedestrian Delay [s]	19.80		19.80		19.80		19.80			19.80		
I_p,Int, Pedestrian LOS Score for Intersection	3.160		3.168		3.168		2.090			2.075		
Crosswalk LOS	C		C		C		B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1696		1696		1696		1034			1034		
d_b, Bicycle Delay [s]	0.69		0.69		0.69		6.94			6.94		
I_b,Int, Bicycle LOS Score for Intersection	2.491		2.661		2.661		1.960			1.779		
Bicycle LOS	B		B		B		A			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-
SG 1 26s												
SG 2 57s												
SG 3 26s												
SG 4 30s												
SG 5 26s												
SG 6 57s												
SG 7 26s												
SG 8 36s												
SG 9 24s												
SG 10 30s												

Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 34.0
Level Of Service: C
Volume to Capacity (v/c): 0.623

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTL			TTL			TTL			TTL		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	140	615	277	396	715	55	50	170	220	282	143	341
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	14	0	0	10	0	0	83	0	0	40
Total Hourly Volume [veh/h]	140	615	263	396	715	45	50	170	137	282	143	301
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	177	76	114	205	13	14	49	39	81	41	86
Total Analysis Volume [veh/h]	161	707	302	455	822	52	57	195	157	324	164	346
Presence of On-Street Parking	No	No	No	No	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	0	0	0	3	0	0	0	0
v_di, Inbound Pedestrian Volume crossing	3	0	0	0	0	0	0	0	0	0	0	0
v_co, Outbound Pedestrian Volume crossing	1	0	0	0	0	0	0	0	0	0	0	0
v_ci, Inbound Pedestrian Volume crossing	0	0	0	0	0	0	0	0	0	0	1	0
v_ab, Corner Pedestrian Volume [ped/h]	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle Volume [bicycles/h]	0	0	0	0	0	0	0	2	0	0	0	1

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

[illegible]

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group		L	C	94	C	L	C	94	C	L	C	94	C	R
C, Cycle Length [s]		520	6.50	6.50	5.20	6.50	6.50	5.20	5.60	5.60	5.20	5.60	5.60	94
L, Total Lost Time per Cycle [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.20
l1.p, Permitted Start-Up Lost Time [s]		3.20	4.50	4.50	3.20	4.50	4.50	3.20	3.60	3.60	3.20	3.60	3.60	0.00
l2, Clearance Lost Time [s]		10	30	30	17	37	37	4	13	13	11	20	43	43
g.l, Effective Green Time [s]		0.11	0.32	0.32	0.19	0.40	0.40	0.04	0.14	0.14	0.12	0.22	0.46	0.46
g / C, Green / Cycle		0.09	0.28	0.28	0.13	0.24	0.24	0.03	0.10	0.10	0.09	0.09	0.22	0.22
(v / s) , Volume / Saturation Flow Rate		1781	1870	1662	3459	1870	1831	1781	1870	1555	3459	1870	1579	1579
s, saturation flow rate [veh/h]		195	598	538	640	739	724	74	262	218	405	403	726	726
c, Capacity [veh/h]		41.23	30.53	30.59	36.18	22.63	22.65	44.92	39.06	38.83	40.70	31.90	17.64	17.64
d1, Uniform Delay [s]		0.11	0.13	0.13	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
k, delay calibration		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
l, Upstream Filtering Factor		8.44	5.57	6.43	1.48	0.77	0.80	15.61	4.18	4.45	3.69	0.66	0.49	0.49
d2, Incremental Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d3, Initial Queue Delay [s]		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.82	0.89	0.89	0.71	0.60	0.60	0.77	0.74	0.72	0.80	0.41	0.48	0.48
d, Delay for Lane Group [s/veh]		49.68	36.10	37.02	37.66	23.40	23.44	60.53	43.24	43.28	44.39	32.56	18.12	18.12
Lane Group LOS		D	D	D	D	C	C	E	D	D	D	C	B	B
Critical Lane Group		No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/m]		3.88	11.15	10.22	4.68	7.00	6.88	1.62	4.54	3.66	3.79	3.21	4.99	4.99
50th-Percentile Queue Length [ft/m]		97.05	278.86	255.54	117.01	174.88	171.97	40.44	113.50	91.48	94.84	80.37	124.76	124.76
95th-Percentile Queue Length [veh/m]		6.99	16.63	15.46	8.23	11.33	11.18	2.91	8.03	6.59	6.83	5.79	8.65	8.65
95th-Percentile Queue Length [ft/m]		174.70	415.80	386.62	205.71	283.32	279.51	72.80	200.86	164.66	170.70	144.66	216.35	216.35

Movement, Approach, & Intersection Results

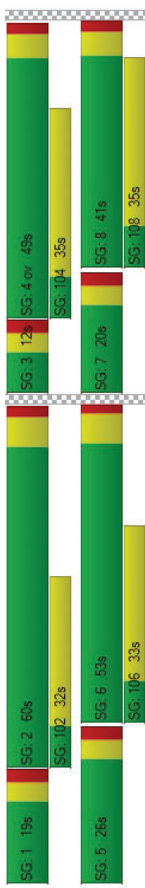
d.M, Delay for Movement [s/veh]		49.68	36.33	37.02	37.66	23.42	23.44	60.53	43.24	43.28	44.39	32.56	18.12	18.12
Movement LOS		D	D	D	D	C	C	E	D	D	D	C	C	B
d.A, Approach Delay [s/veh]			38.35			26.30			45.67			31.17		
Approach LOS			D			C			D			C		
d.I, Intersection Delay [s/veh]								33.98						
Intersection LOS								C						
Intersection VC								0.623						

Other Modes

g.WalkInt, Effective Walk Time [s]		11.0				11.0								11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00				0.00								0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00				0.00								0.00
d.p, Pedestrian Delay [s]		36.87				36.87								36.87
I.p.int, Pedestrian LOS Score for Intersection		3.241				3.211			2.501			2.861		2.861
Crosswalk LOS		C				C			B			C		C
s.b, Saturation Flow Rate of the bicycle lane		2000				2000			2000			2000		2000
c.b, Capacity of the bicycle lane [bicycles/h]		984				1133			749			919		919
d.b, Bicycle Delay [s]		12.18				8.86			18.49			13.81		13.81
I.b.int, Bicycle LOS Score for Intersection		2.536				2.664			2.371			3.002		3.002
Bicycle LOS		B				B			B			C		C

Sequence

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



Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 15.1
Level Of Service: B
Volume to Capacity (v/c): 0.495

Intersection Setup

Name	SR 53			18th Ave		
Approach	Northbound			Eastbound		
Lane Configuration	T T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1
Entry Pocket Length [ft]	675.00	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]	55.00			30.00		
Grade [%]	0.00			0.00		
Curb Present	No			No		
Crosswalk	Yes			Yes		

Volumes

Name	SR 53			SR 53			18th Ave			18th Ave		
Base Volume Input [veh/h]	135	966	15	80	936	110	110	25	135	20	20	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	1	0	0	0	0	0	0	0	0	39
Total Hourly Volume [veh/h]	135	966	14	80	936	110	110	25	135	20	20	41
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	259	4	21	246	29	29	7	36	5	5	11
Total Analysis Volume [veh/h]	142	1038	15	84	985	116	116	26	142	21	21	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0			0			1			1		
v_di, Inbound Pedestrian Volume crossing	1			1			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	145
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss
Signal Group	5	2	0	1	6	0	7	4
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-
Minimum Green [s]	7	8	0	7	8	0	7	0
Maximum Green [s]	21	50	0	21	50	0	21	31
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	3.2
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	2.0
Split [s]	26	57	0	26	57	0	26	36
Vehicle Extension [s]	1.5	3.4	0.0	1.5	3.4	0.0	3.0	1.5
Walk [s]	0	7	0	0	7	0	0	7
Pedestrian Clearance [s]	0	26	0	0	17	0	0	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest in Walk	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes	No	No	Yes	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
Detector Length [ft]	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

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	L	C
C, Cycle Length [s]	57	57	57	57	57	57	57	57	57	57	57
L, Total Lost Time per Cycle [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I1, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g, I, Effective Green Time [s]	11	25	25	10	24	24	11	14	14	7	10
g / C, Green / Cycle	0.20	0.45	0.45	0.18	0.43	0.43	0.20	0.24	0.24	0.13	0.17
s, saturation flow rate [veh/h]	0.08	0.28	0.28	0.05	0.30	0.30	0.07	0.10	0.10	0.01	0.04
c, Capacity [veh/h]	1781	1870	1859	1781	1870	1802	1781	1626	1781	1670	291
d1, Uniform Delay [s]	19.72	12.08	12.09	19.98	13.26	13.27	19.73	18.21	21.98	20.20	20.20
k, delay calibration	0.04	0.13	0.13	0.04	0.13	0.13	0.11	0.04	0.11	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.92	0.92	0.15	1.30	1.36	0.56	0.27	0.18	0.14	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.40	0.63	0.63	0.26	0.70	0.70	0.33	0.43	0.43	0.09	0.22
d, Delay for Lane Group [s/veh]	19.98	13.00	13.01	20.13	14.56	14.63	20.29	18.49	22.16	20.34	20.34
Lane Group LOS	B	B	B	C	B	B	C	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	No	Yes	Yes	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.35	3.66	3.65	0.80	4.29	4.15	1.27	1.73	0.24	0.69	0.69
50th-Percentile Queue Length [ft/ln]	33.71	91.56	91.20	19.91	107.19	103.82	31.78	43.18	6.06	17.16	17.16
95th-Percentile Queue Length [veh/ln]	2.43	6.59	6.57	1.43	7.68	7.48	2.29	3.11	0.44	1.24	1.24
95th-Percentile Queue Length [ft/ln]	60.68	164.81	164.16	35.84	192.09	186.88	57.20	77.73	10.92	30.89	30.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.98	13.01	13.01	20.13	14.59	14.63	20.29	18.49	18.49	22.16	20.34	20.34
Movement LOS	B	B	B	C	B	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	13.83	14.99										
Approach LOS	B	B										
d_I, Intersection Delay [s/veh]	15.10											
Intersection LOS	B											
Intersection V/C	0.495											

Other Modes

g_Walk,mt, Effective Walk Time [s]	11.0	11.0	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	16269.29	17318.19	17318.19	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	18.47	18.47	18.47	18.47	18.47	18.47
I_p,Int, Pedestrian LOS Score for Intersection	3.113	3.140	3.140	2.097	2.097	2.051
Crosswalk LOS	C	C	C	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1778	1778	1778	1085	1085	1085
d_b, Bicycle Delay [s]	0.35	0.35	0.35	5.95	5.95	5.95
I_b,Int, Bicycle LOS Score for Intersection	2.546	2.537	2.537	2.028	2.028	1.764
Bicycle LOS	B	B	B	B	B	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-
SG 1 26s	SG 2 57s	SG 3 26s	SG 4 36s	SG 5 26s	SG 6 57s	SG 7 26s	SG 8 36s	SG 9 26s	SG 10 36s	SG 11 26s	SG 12 33s	SG 13 24s	SG 14 30s
SG 5 26s	SG 6 57s	SG 7 26s	SG 8 36s	SG 9 26s	SG 10 36s	SG 11 26s	SG 12 33s	SG 13 24s	SG 14 30s	SG 15 26s	SG 16 33s	SG 17 24s	SG 18 30s

Intersection Level Of Service Report

Intersection 6: SR 53/Dam Rd

Control Type: Signalized

Analysis Method: HCM 6th Edition

Analysis Period: 15 minutes

Delay (sec / veh): 35.1

Level Of Service: D

Volume to Capacity (v/c): 0.637

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3L			3L			3L			3L		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name		SR 53						SR 53						Old Hwy 53						Dam Rd					
Base Volume Input (veh/h)		215	685	348	1,000	1,000	1,000	341	685	65	70	165	140	338	165	381									
Base Volume Adjustment Factor		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Heavy Vehicles Percentage [%]		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Growth Factor		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
In-Process Volume (veh/h)		0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0
Diversed Trips (veh/h)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips (veh/h)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume (veh/h)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume (veh/h)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume (veh/h)		0	0	13	0	0	0	5	0	0	0	0	95	0	0	38									
Total Hourly Volume (veh/h)		215	685	335	341	685	60	70	165	45	338	165	343												
Peak Hour Factor		0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	
Other Adjustment Factor		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
Total 15-Minute Volume (veh/h)		57	180	88	90	180	16	18	43	12	89	43	90												
Total Analysis Volume (veh/h)		226	721	353	359	721	63	74	174	47	356	174	361												
Presence of On-Street Parking		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	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	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	0	0	0	0	0	0	0	0	0	0	0	0
v_o, Outbound Pedestrian Volume crossing		0						1						2						1					
v_d, Inbound Pedestrian Volume crossing		2						1						0						1					
v_o, Outbound Pedestrian Volume crossing		0						0						0						0					
v_i, Inbound Pedestrian Volume crossing		0						0						0						0					
v_ab, Corner Pedestrian Volume (ped/h)		0						0						0						0					
Bicycle Volume (bicycles/h)		1						0						0						0					

Intersection Settings

Located in CBD		No											
Signal Coordination Group		-											
Cycle Length [s]		140											
Coordination Type		Time of Day Pattern Isolated											
Actuation Type		Fully actuated											
Offset [s]		0.0											
Offset Reference		Lead Green - Beginning of First Green											
Permissive Mode		SingleBand											
Lost time [s]		0.00											
Phasing & Timing													
Control Type	Protect	Permiss	Protect	Permiss	Protect	Permiss	Protect	Permiss	Protect	Permiss	Protect	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	0	7	4	5	
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-	4.5
Lead / Lag	5	10	0	5	10	0	5	10	0	5	10	5	
Minimum Green [s]	20	49	0	17	46	0	7	35	0	16	44	17	
Maximum Green [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	4.1	0.0	3.2	4.1	3.2	
Amber [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	2.0	
All red [s]	25	56	0	22	53	0	12	41	0	21	50	22	
Split [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	
Vehicle Extension [s]	0	7	0	0	7	0	0	7	0	0	7	0	
Walk [s]	0	28	0	0	25	0	0	28	0	0	28	0	
Pedestrian Clearance [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	
Delayed Vehicle Green [s]	No	No	No	No	No	No	No	No	No	No	No	No	
Rest in Walk	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	
I1, Start-Up Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	3.6	0.0	3.2	3.6	3.2	
I2, Clearance Lost Time [s]	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	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 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]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Exclusive Pedestrian Phase													
Pedestrian Signal Group	0												
Pedestrian Walk [s]	0												
Pedestrian Clearance [s]	0												

Lane Group Calculations

Lane Group		L	C	C	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]		97	97	6.50	6.50	5.20	6.50	5.20	5.60	5.60	5.20	5.60	5.20	5.60	97
L, Total Lost Time per Cycle [s]		5.20	6.50	6.50	5.20	5.20	6.50	5.20	5.60	5.60	5.20	5.60	5.20	5.60	5.20
l1, p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		3.20	4.50	4.50	3.20	4.50	3.20	3.60	3.60	3.60	3.20	3.60	3.60	3.60	0.00
g, l, Effective Green Time [s]		14	33	33	17	38	36	5	12	12	12	12	19	41	41
g / C, Green / Cycle		0.15	0.34	0.34	0.18	0.37	0.37	0.05	0.12	0.12	0.13	0.19	0.43	0.19	0.43
(v / s), J, Volume / Saturation Flow Rate		0.13	0.30	0.31	0.10	0.21	0.21	0.04	0.09	0.03	0.10	0.09	0.23	0.10	0.23
s, saturation flow rate [veh/h]		1781	1870	1651	3459	1870	1818	1781	1870	1982	3459	1870	1988	1870	1988
c, Capacity [veh/h]		263	642	567	607	695	675	96	229	194	436	365	680	436	680
d1, Uniform Delay [s]		40.30	29.90	30.19	36.74	24.30	24.31	45.25	41.12	38.43	41.23	34.61	20.49	41.23	20.49
k, delay calibration		0.13	0.14	0.15	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
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	1.00	1.00
d2, Incremental Delay [s]		9.56	5.36	7.42	0.92	0.75	0.77	12.36	5.11	0.64	3.78	0.97	0.64	3.78	0.97
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.86	0.88	0.90	0.59	0.57	0.57	0.77	0.76	0.24	0.82	0.48	0.53	0.82	0.53
d, Delay for Lane Group [s/veh]		49.87	35.26	37.61	37.66	25.05	25.08	57.61	46.23	39.07	45.01	35.58	21.13	45.01	21.13
Lane Group LOS		D	D	D	D	C	C	E	D	D	D	D	C	D	C
Critical Lane Group		No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/m]		5.59	11.98	11.21	3.71	6.63	6.46	2.05	4.25	1.03	4.27	3.65	5.84	4.27	3.65
50th-Percentile Queue Length [ft/m]		139.67	299.39	280.13	92.69	165.87	161.51	51.29	106.31	25.65	106.78	91.30	146.04	106.78	91.30
95th-Percentile Queue Length [veh/m]		9.46	17.65	16.70	6.67	10.86	10.63	3.69	7.63	1.85	7.66	6.57	9.81	7.66	6.57
95th-Percentile Queue Length [ft/m]		236.57	441.28	417.38	166.84	271.48	265.72	92.31	190.85	46.16	191.51	164.34	245.13	191.51	164.34

Movement, Approach, & Intersection Results

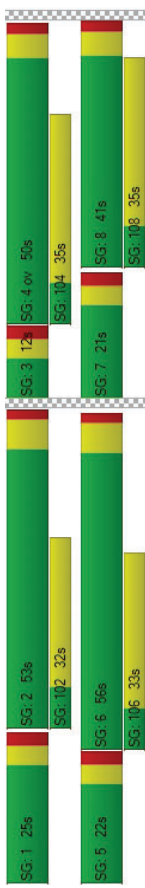
d, M, Delay for Movement [s/veh]		49.87	35.77	37.61	37.66	25.06	25.08	57.61	46.23	39.07	45.01	35.58	21.13	45.01	21.13
Movement LOS		D	D	D	D	C	C	E	D	D	D	D	C	D	C
d, A, Approach Delay [s/veh]			38.72			29.02			47.94			33.49			
Approach LOS			D			C			D			C			
d, J, Intersection Delay [s/veh]						35.13									
Intersection LOS						D									
Intersection VC						0.637									

Other Modes

g, Walk/mt, Effective Walk Time [s]		11.0				11.0			11.0				11.0		
M, corner, Corner Circulation Area [ft ² /ped]		0.00				0.00			0.00				0.00		
M, CW, Crosswalk Circulation Area [ft ² /ped]		0.00				0.00			0.00				0.00		
d, p, Pedestrian Delay [s]		37.98				37.98			37.98				37.98		
l, p, int, Pedestrian LOS Score for Intersection		3.227				3.161			2.513				2.857		
Crosswalk LOS		C				C			B				C		
s, b, Saturation Flow Rate of the bicycle lane		2000				2000			2000				2000		
c, b, Capacity of the bicycle lane [bicycles/h]		1024				962			732				918		
d, b, Bicycle Delay [s]		11.53				13.04			19.44				14.15		
l, b, int, Bicycle LOS Score for Intersection		2.643				2.507			2.203				3.092		
Bicycle LOS		B				B			B				C		

Sequence

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



Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 12.0
Level Of Service: B
Volume to Capacity (v/c): 0.421

Intersection Setup

Name	SR 53			18th Ave		
Approach	Northbound			Eastbound		
Lane Configuration	T T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1
Entry Pocket Length [ft]	675.00	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]	55.00			30.00		
Grade [%]	0.00			0.00		
Curb Present	No			No		
Crosswalk	Yes			Yes		

Volumes

Name	SR 53			18th Ave			18th Ave		
Base Volume Input [veh/h]	126	881	10	40	811	90	95	20	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	3	0	0	0	0	0	0
Total Hourly Volume [veh/h]	126	881	7	40	811	90	95	20	121
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	227	2	10	209	23	24	5	31
Total Analysis Volume [veh/h]	130	908	7	41	836	93	98	21	125
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0			0			0		
v_dli, Inbound Pedestrian Volume crossing	0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0		
v_cil, Inbound Pedestrian Volume crossing	0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0		
Bicycle Volume [bicycles/h]	0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	145
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss
Signal Group	5	2	0	1	6	0	7	4
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-
Minimum Green [s]	7	8	0	7	8	0	7	0
Maximum Green [s]	21	50	0	21	50	0	21	31
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	3.2
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	2.0
Split [s]	26	57	0	26	57	0	26	36
Vehicle Extension [s]	1.5	3.4	0.0	1.5	3.4	0.0	3.0	1.5
Walk [s]	0	7	0	0	7	0	0	7
Pedestrian Clearance [s]	0	26	0	0	17	0	0	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest in Walk	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes	No	No	Yes	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
Detector Length [ft]	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

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	L	C
C, Cycle Length [s]	48	48	48	48	48	48	48	48	48	48	48	48
L, Total Lost Time per Cycle [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I1, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g, I, Effective Green Time [s]	11	22	22	8	19	19	10	11	6	7		
g / C, Green / Cycle	0.23	0.46	0.46	0.17	0.40	0.40	0.22	0.24	0.13	0.15		
(v / s), Volume / Saturation Flow Rate	0.07	0.24	0.24	0.02	0.25	0.25	0.06	0.09	0.01	0.01		
s, saturation flow rate [veh/h]	1781	1870	1865	1781	1870	1805	1781	1625	1781	1830		
c, Capacity [veh/h]	410	865	863	305	755	729	385	388	227	274		
d1, Uniform Delay [s]	15.29	9.14	9.14	16.81	11.37	11.37	15.54	15.23	18.31	17.52		
k, delay calibration	0.04	0.13	0.13	0.04	0.13	0.13	0.11	0.04	0.11	0.04		
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]	0.16	0.59	0.59	0.07	1.00	1.03	0.34	0.22	0.08	0.05		
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		

Lane Group Results

X, volume / capacity	0.32	0.53	0.53	0.13	0.63	0.63	0.25	0.38	0.04	0.09		
d, Delay for Lane Group [s/veh]	15.45	9.73	9.73	16.88	12.37	12.40	15.88	15.46	18.39	17.57		
Lane Group LOS	B	A	A	B	B	B	B	B	B	B		
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	Yes	No		
50th-Percentile Queue Length [veh/ln]	0.88	2.02	2.01	0.30	2.66	2.58	0.81	1.18	0.09	0.21		
50th-Percentile Queue Length [ft/ln]	22.10	50.49	50.36	7.45	66.55	64.42	20.34	29.47	2.30	5.19		
95th-Percentile Queue Length [veh/ln]	1.59	3.64	3.63	0.54	4.79	4.64	1.46	2.12	0.17	0.37		
95th-Percentile Queue Length [ft/ln]	39.78	90.88	90.65	13.41	119.79	115.96	36.61	53.05	4.15	9.34		

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.45	9.73	9.73	16.88	12.38	12.40	15.88	15.46	15.46	18.39	17.57	17.57
Movement LOS	B	A	A	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	12.57	10.44					15.63			17.81		
Approach LOS		B			B			B		B		
d_I, Intersection Delay [s/veh]						12.00						
Intersection LOS							B					
Intersection V/C							0.421					

Other Modes

g_Walk,mt, Effective Walk Time [s]	11.0		11.0				11.0				11.0	
M_corner, Corner Circulation Area [ft²/ped]	0.00		0.00		0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00		0.00		0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	14.10		14.10		14.10		14.10		14.10		14.10	
I_p,Int, Pedestrian LOS Score for Intersection	2.989		2.984		2.984		2.062		2.062		2.003	
Crosswalk LOS	C		C		C		B		B		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	2119		2119		2119		1292		1292		1292	
d_b, Bicycle Delay [s]	0.08		0.08		0.08		2.98		2.98		2.98	
I_b,Int, Bicycle LOS Score for Intersection	2.424		2.360		2.360		1.962		1.962		1.677	
Bicycle LOS	B		B		B		A		A		A	

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-
SG 1 26s												
SG 2 57s												
SG 3 26s												
SG 4 36s												
SG 5 26s												
SG 6 57s												
SG 7 26s												
SG 8 36s												
SG 9 24s												
SG 10 30s												
SG 11 30s												
SG 12 33s												
SG 13 24s												
SG 14 30s												
SG 15 24s												
SG 16 24s												
SG 17 30s												
SG 18 30s												
SG 19 30s												
SG 20 30s												

Intersection Level Of Service Report

Control Type:	Signalized	Delay (sec / veh):	28.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.528

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	左			右			右			右		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53						SR 53						Old Hwy 53						Dam Rd					
Base Volume Input [veh/h]	150	590	302	1,000	1,000	1,000	332	550	60	55	173	140	279	147	372									
Base Volume Adjustment Factor	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000									
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									
Growth Factor	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000									
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Site-Generated Trips [veh/h]	0	0	0	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	0	0	0									
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Right Turn on Red Volume [veh/h]	0	0	32	0	0	0	0	0	8	0	0	76	0	0	80									
Total Hourly Volume [veh/h]	150	590	270	332	550	52	332	550	52	55	173	64	279	147	292									
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800									
Other Adjustment Factor	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000									
Total 15-Minute Volume [veh/h]	38	151	69	85	140	13	14	44	13	14	44	16	71	38	74									
Total Analysis Volume [veh/h]	153	602	276	339	551	53	339	551	53	56	177	65	285	150	298									
Presence of On-Street Parking	No	No	No	No	No	No	No	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	0	0	0									
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
v_do, Outbound Pedestrian Volume crossing	1	2																						
v_di, Inbound Pedestrian Volume crossing	0								1					2										
v_co, Outbound Pedestrian Volume crossing	0	0							0					0										
v_ci, Inbound Pedestrian Volume crossing	0	0							0					0										
v_ab, Corner Pedestrian Volume [ped/h]	0	0							0					0										
Bicycle Volume [bicycles/h]	0								2					0										

Intersection Settings

Located in CBD										No																			
Signal Coordination Group										-																			
Cycle Length [s]										140																			
Coordination Type										Time of Day Pattern Isolated																			
Actuation Type										Fully actuated																			
Offset [s]										0.0																			
Offset Reference										Lead Green - Beginning of First Green																			
Permissive Mode										SingleBand																			
Lost time [s]										0.00																			
Phasing & Timing																													
Control Type					Protects		Permiss		Protects		Permiss		Protects		Permiss		Protects		Permiss		Overlap								
Signal Group					1		6		0		5		2		0		3		8		0		7		4		5		
Auxiliary Signal Groups					Lead		-		-		Lead		-		-		Lead		-		-		Lead		-		-		
Minimum Green [s]					5		10		0		5		10		0		5		10		0		5		10		5		
Maximum Green [s]					16		48		0		18		50		0		7		35		0		16		54		18		
Amber [s]					3.2		5.0		0.0		3.2		5.0		0.0		3.2		4.1		0.0		3.2		4.1		3.2		
All red [s]					2.0		1.5		0.0		2.0		1.5		0.0		2.0		1.5		0.0		2.0		1.5		2.0		
Split [s]					21		55		0		23		57		0		12		41		0		21		50		23		
Vehicle Extension [s]					3.0		3.0		0.0		3.0		3.0		0.0		3.0		3.0		0.0		3.0		3.0		3.0		
Walk [s]					0		7		0		0		7		0		0		7		0		0		7		0		
Pedestrian Clearance [s]					0		26		0		0		25		0		0		28		0		0		28		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				No				No		
11, Start-Up Lost Time [s]					2.0		2.0		0.0		2.0		2.0		0.0		2.0		2.0		0.0		2.0		2.0		2.0		
12, Clearance Lost Time [s]					3.2		4.5		0.0		3.2		4.5		0.0		3.2		3.6		0.0		3.2		3.6		3.2		
Minimum Recall					No		Yes				No		Yes				No		No				No		No		No		
Maximum Recall					No		No				No		No				No		No				No		No		No		
Pedestrian Recall					No		No				No		No				No		No				No		No		No		
Detector Location [ft]					0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		
Detector Length [ft]					0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		
1, Upstream Filtering Factor					1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		
Exclusive Pedestrian Phase																													
Pedestrian Signal Group										0																			
Pedestrian Walk [s]										0																			
Pedestrian Clearance [s]										0																			

Lane Group Calculations

Lane Group		L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]		76	76	6.50	76	76	6.50	76	76	76	76	76	76
L, Total Lost Time per Cycle [s]		520	6.50	6.50	520	6.50	6.50	520	6.50	520	520	5.60	5.20
l1, p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		3.20	4.50	4.50	3.20	4.50	3.20	3.60	3.60	3.20	3.60	0.00	0.00
g, l, Effective Green Time [s]		8	22	22	13	27	27	3	10	10	9	15	34
g / C, Green / Cycle		0.11	0.29	0.29	0.17	0.35	0.35	0.05	0.13	0.13	0.11	0.20	0.44
(v / s), J, Volume / Saturation Flow Rate		0.09	0.25	0.25	0.10	0.17	0.17	0.03	0.09	0.04	0.08	0.08	0.19
s, saturation flow rate [veh/h]		1781	1870	1873	3459	1870	1806	1781	1870	1886	3459	1870	1988
c, Capacity [veh/h]		193	543	486	587	657	635	81	250	212	390	375	704
d1, Uniform Delay [s]		33.29	25.65	25.65	29.26	19.33	19.35	36.00	31.75	29.97	32.65	26.60	14.59
k, delay calibration		0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
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
d2, Incremental Delay [s]		7.10	3.95	4.40	0.90	0.53	0.56	9.87	3.69	0.81	2.65	0.69	0.40
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.79	0.85	0.85	0.58	0.58	0.47	0.48	0.69	0.71	0.31	0.73	0.40	0.42
d, Delay for Lane Group [s/veh]		40.38	29.60	30.05	30.16	19.86	19.90	45.88	35.45	30.79	35.50	27.29	15.00	
Lane Group LOS		D	C	C	C	B	B	D	D	C	D	C	C	B
Critical Lane Group		No	No	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/m]		2.88	7.41	6.69	2.63	3.75	3.64	1.21	3.24	1.08	2.59	2.33	3.27	
50th-Percentile Queue Length [ft/m]		71.93	185.16	167.29	65.79	93.68	91.05	30.37	81.11	27.09	64.67	58.32	81.81	
95th-Percentile Queue Length [veh/m]		5.18	11.87	10.93	4.74	6.75	6.56	2.19	5.84	1.95	4.66	4.20	5.89	
95th-Percentile Queue Length [ft/m]		128.48	296.74	273.34	118.42	168.63	163.88	54.67	146.00	48.77	116.41	104.98	147.27	

Movement, Approach, & Intersection Results

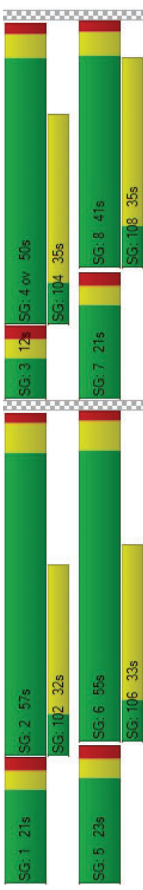
d, M, Delay for Movement [s/veh]		40.38	29.70	30.05	30.16	19.88	19.90	45.88	35.45	30.79	35.50	27.29	15.00
Movement LOS		D	C	C	C	B	B	D	D	C	D	C	B
d, A, Approach Delay [s/veh]			31.38			23.54			36.39			25.49	
Approach LOS			C			C			D			C	
d, J, Intersection Delay [s/veh]						27.96							
Intersection LOS						C							
Intersection VC						0.528							

Other Modes

g, Walk/mt, Effective Walk Time [s]		11.0				11.0							11.0
M, corner, Corner Circulation Area [ft ² /ped]		0.00				0.00			0.00				0.00
M, CW, Crosswalk Circulation Area [ft ² /ped]		0.00				0.00			0.00				0.00
d, p, Pedestrian Delay [s]		28.01				28.01			28.01				28.01
L, p, int, Pedestrian LOS Score for Intersection		3.069				3.050			2.440				2.868
Crosswalk LOS		C				C			B				C
s, b, Saturation Flow Rate of the bicycle lane		2000				2000			2000				2000
c, b, Capacity of the bicycle lane [bicycles/h]		1269				1321			928				1162
d, b, Bicycle Delay [s]		5.11				4.41			11.02				6.72
L, b, int, Bicycle LOS Score for Intersection		2.437				2.352			2.177				2.901
Bicycle LOS		B				B			B				C

Sequence

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



Intersection Level Of Service Report

Control Type: Two-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 14.9
Level Of Service: B
Volume to Capacity (v/c): 0.013

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		18th Ave Extension	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	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]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Old Hwy 53		Old Hwy 53		18th Ave Extension	
Base Volume Input [veh/h]	203	0	0	272	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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]	35	2	39	52	4	29
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]	238	2	39	324	4	29
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	1	11	92	1	8
Total Analysis Volume [veh/h]	270	2	44	368	5	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.01	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.89	0.00	14.85	10.01
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.11	0.00	0.18	0.18
95th-Percentile Queue Length [ft]	0.00	0.00	2.64	0.00	4.46	4.46
d_A, Approach Delay [s/veh]	0.00	0.00	0.84	0.00	10.64	
Approach LOS	A	A	A	A	B	
d_I, Intersection Delay [s/veh]			1.04			
Intersection LOS			B			

Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 81.6
Level Of Service: F
Volume to Capacity (v/c): 11.283

Intersection Setup

Name	SR 53			18th Ave		
Approach	Northbound			Eastbound		
Lane Configuration	T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	675.00	100.00	100.00	100.00	100.00	165.00
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]	55.00			30.00		
Grade [%]	0.00			0.00		
Curb Present	No			No		
Crosswalk	Yes			Yes		

Volumes

Name	SR 53			18th Ave		
Base Volume Input [veh/h]	4	721	86	98	0	1
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]	117	9	0	13	167	113
Diverter Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	2
Total Hourly Volume [veh/h]	121	730	78	98	167	114
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	205	22	28	230	47
Total Analysis Volume [veh/h]	136	820	88	110	920	188
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0
v_d0, Outbound Pedestrian Volume crossing	0			0		
v_d1, Inbound Pedestrian Volume crossing	0			0		
v_c0, Outbound Pedestrian Volume crossing	0			0		
v_c1, Inbound Pedestrian Volume crossing	0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0		
Bicycle Volume [bicycles/h]	1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	7	0	7	0
Maximum Green [s]	21	50	0	21	50	0	42	0	42	0
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	0.0	3.2	0.0
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	0.0	2.0	0.0
Split [s]	26	57	0	26	57	0	47	0	47	0
Vehicle Extension [s]	1.5	3.4	0.0	1.5	3.4	0.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	17	0	23	0	23	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
Rest in Walk	No	No	No	No	No	No	No	No	No	No
11, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
12, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	0.0	3.2	0.0
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	C	R
C, Cycle Length [s]	104	104	104	104	104	104	104	104	104
L, Total Lost Time per Cycle [s]	5.20	6.50	5.20	5.20	6.50	5.20	5.20	6.50	5.20
11, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12, Clearance Lost Time [s]	3.20	4.50	3.20	3.20	4.50	3.20	3.20	4.50	3.20
g, I, Effective Green Time [s]	10	37	37	8	38	36	42	42	42
g / C, Green / Cycle	0.09	0.36	0.36	0.08	0.34	0.34	0.40	0.40	0.40
s, saturation flow rate [veh/h]	1781	1870	1788	1781	1870	1781	1589	32	1589
c, Capacity [veh/h]	164	668	643	136	639	602	70	642	73
d1, Uniform Delay [s]	46.39	28.51	28.56	47.26	32.41	32.46	48.81	19.77	44.69
k, delay calibration	0.04	0.13	0.13	0.04	0.19	0.19	0.50	0.11	0.50
1, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.01	1.50	1.59	4.23	7.50	8.17	537.18	0.12	330.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.69	0.69	0.81	0.89	0.89	2.09	0.16	1.62
d, Delay for Lane Group [s/veh]	50.40	30.01	30.14	51.49	39.90	40.63	585.99	19.89	375.64
Lane Group LOS	D	C	C	D	D	D	F	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.46	9.20	8.92	2.82	13.62	13.01	12.30	1.60	8.62
50th-Percentile Queue Length [ft/ln]	86.39	230.04	223.04	70.48	340.56	325.17	307.60	40.09	215.45
95th-Percentile Queue Length [veh/ln]	6.22	14.18	13.82	5.07	19.68	18.82	22.15	2.89	15.51
95th-Percentile Queue Length [ft/ln]	155.51	354.41	345.50	126.87	491.89	473.03	553.68	72.17	387.82

Movement, Approach, & Intersection Results

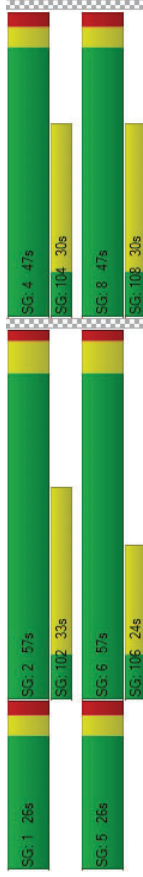
d_M, Delay for Movement [s/veh]	50.40	30.07	30.14	51.49	40.18	40.63	585.99	585.99	19.89	375.64	375.64	18.96
Movement LOS	D	C	C	D	D	D	F	F	B	F	F	B
d_A, Approach Delay [s/veh]	32.72		41.27				352.76				292.26	
Approach LOS	C		D				F				F	
d_I, Intersection Delay [s/veh]							81.63					
Intersection LOS							F					
Intersection V/C							11.283					

Other Modes

g_walk.mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_LOW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.64	41.64	41.64	41.64
L_p.int, Pedestrian LOS Score for Intersection	3.215	3.295	2.447	2.165
Crosswalk LOS				
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	970	970	803	803
d_b, Bicycle Delay [s]	13.81	13.80	18.65	18.65
l_b.int, Bicycle LOS Score for Intersection	2.428	2.564	1.975	1.903
Bicycle LOS				
	B	B	A	A

Sequence

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



Intersection Level Of Service Report

Intersection 3: Old Hwy 53/Airport Rd

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

Delay (sec / veh):	14.8
Level Of Service:	B
Volume to Capacity (v/c):	0.07

Intersection Setup

Name	Old Hwy 53 Northbound	Old Hwy 53 Southbound	Airport Rd Westbound
Approach			
Lane Configuration			
Turning Movement	Thru	Left	Left
Lane Width [ft]	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00
Speed [mph]	35.00	35.00	30.00
Grade [%]	0.00	0.00	0.00
Crosswalk	Yes	Yes	Yes

Volumes

Name	Old Hwy 53		Old Hwy 53		Airport Rd	
	203	0	0	272	0	0
Base Volume Input [veh/h]	1,000	1,000	1,000	1,000	1,000	1,000
Base Volume Adjustment Factor	2.00	2.00	2.00	2.00	2.00	2.00
Heavy Vehicles Percentage [%]	1,000	1,000	1,000	1,000	1,000	1,000
Growth Factor	0	0	0	0	0	0
In-Process Volume [veh/h]	25	60	27	25	26	13
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]	228	60	27	297	26	13
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	17	8	84	7	4
Total Analysis Volume [veh/h]	259	68	31	338	30	15
Pedestrian Volume [ped/h]	0	0	0	0	0	0

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C Movement V/C Ratio	0.00	0.00	0.03	0.00	0.08	0.02
d_M Delay for Movement [s/veh]	0.00	0.00	8.00	0.00	14.82	10.63
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.00	0.31	0.31
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.83	0.00	7.85	7.85
d_A Approach Delay [s/veh]	0.00		0.67		13.42	
Approach LOS	A	A	A		B	
d_I Intersection Delay [s/veh]			1.15			
Intersection LOS			B			

Intersection Level Of Service Report

Intersection 4: Old Hwy 53/S Market St

Control Type:	Two-way stop	Delay (sec / veh):	38.8
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.718

Intersection Setup

Name	Old Hwy 53	Old Hwy 53	S Market St
Approach	Northbound	Southbound	Westbound
Lane Configuration			
Turning Movement	Thru	Left	Thru
Lane Width [ft]	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00
Speed [mph]	35.00	35.00	30.00
Grade [%]	0.00	0.00	0.00
Crosswalk	Yes	Yes	Yes

Volumes

Name	Old Hwy 53	Old Hwy 53	S Market St
Base Volume Input [veh/h]	203	0	272
Base Volume Adjustment Factor	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0
Site-Generated Trips [veh/h]	65	22	29
Diverted Trips [veh/h]	0	0	0
Pass-by Trips [veh/h]	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0
Other Volume [veh/h]	0	0	0
Total Hourly Volume [veh/h]	268	22	301
Peak Hour Factor	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	62	86
Total Analysis Volume [veh/h]	305	25	342
Pedestrian Volume [ped/h]	0	0	0

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C Movement V/C Ratio	0.00	0.00	0.02	0.00	0.72	0.04
d_M Delay for Movement [s/veh]	0.00	0.00	8.63	0.00	38.81	10.97
Movement LOS	A	A	A	A	E	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.00	5.28	0.11
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.89	0.00	131.98	2.86
d_A Approach Delay [s/veh]	0.00		0.59		36.38	
Approach LOS	A	A	A		E	
d_I Intersection Delay [s/veh]			8.30			
Intersection LOS			E			

Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Control Type:Signalized

Analysis Method:HCM 6th Edition

Analysis Period:15 minutes

Delay (sec / veh):35.3

Level Of Service:D

Volume to Capacity (v/c):0.634

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3L			3L			3L			3L		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Lane Group Calculations

Lane Group		L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]		88	88	88	88	88	88	88	88	88	88	88	88
L, Total Lost Time per Cycle [s]		5.20	6.50	6.50	5.20	6.50	6.50	5.20	5.60	5.60	5.20	5.60	5.20
l1, p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		3.20	4.50	4.50	3.20	4.50	4.50	3.20	3.60	3.60	3.20	3.60	0.00
g, l, Effective Green Time [s]		17	31	31	10	24	24	9	18	18	7	15	31
g / C, Green / Cycle		0.20	0.35	0.35	0.11	0.27	0.27	0.10	0.20	0.20	0.07	0.18	0.35
(v / s), J, Volume / Saturation Flow Rate		0.17	0.26	0.27	0.08	0.24	0.24	0.08	0.10	0.17	0.05	0.07	0.13
s, saturation flow rate [veh/h]		1781	1870	1700	3459	1870	1764	1781	1870	1960	3459	1870	1577
c, Capacity [veh/h]		348	664	604	393	511	483	179	376	314	258	328	555
d1, Uniform Delay [s]		34.46	24.84	24.91	37.48	30.57	30.59	38.68	31.11	33.60	39.81	32.34	21.07
k, delay calibration		0.21	0.11	0.11	0.11	0.17	0.17	0.11	0.11	0.11	0.11	0.11	0.11
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
d2, Incremental Delay [s]		13.33	1.65	1.87	2.09	7.61	8.14	7.53	0.97	5.70	3.67	0.87	0.39
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.89	0.74	0.75	0.68	0.88	0.88	0.79	0.48	0.83	0.71	0.42	0.36
d, Delay for Lane Group [s/veh]		47.79	26.49	26.78	39.57	38.18	38.73	46.21	32.08	39.30	43.48	33.21	21.46
Lane Group LOS		D	C	C	D	D	D	D	C	D	D	C	C
Critical Lane Group		Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/m]		7.10	8.14	7.51	2.67	9.19	8.76	3.26	3.40	5.61	2.02	2.63	2.93
50th-Percentile Queue Length [ft/m]		177.62	203.43	187.79	66.78	229.78	218.99	81.49	85.12	140.36	50.59	65.87	73.22
95th-Percentile Queue Length [veh/m]		11.48	12.82	12.01	4.81	14.16	13.61	5.87	6.13	9.50	3.64	4.74	5.27
95th-Percentile Queue Length [ft/m]		286.91	320.39	300.15	120.21	354.08	340.34	146.69	153.22	237.51	91.07	118.56	131.79

Movement, Approach, & Intersection Results

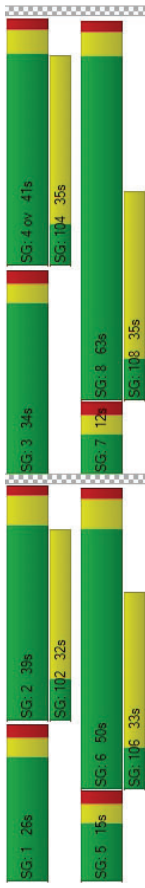
d, M, Delay for Movement [s/veh]		47.79	26.57	26.78	39.57	38.39	38.73	46.21	32.08	39.30	43.48	33.21	21.46
Movement LOS		D	C	C	D	D	D	D	C	D	D	C	C
d, A, Approach Delay [s/veh]			31.84				38.71		38.72			32.37	
Approach LOS			C				D		D			C	
d, J, Intersection Delay [s/veh]								35.31					
Intersection LOS								D					
Intersection VC								0.634					

Other Modes

g, Walk/mt, Effective Walk Time [s]		11.0							11.0				11.0
M, corner, Corner Circulation Area [ft ² /ped]		0.00							0.00				0.00
M, CW, Crosswalk Circulation Area [ft ² /ped]		0.00							0.00				0.00
d, p, Pedestrian Delay [s]		33.61							33.61				33.61
I, p, int, Pedestrian LOS Score for Intersection		3.220						3.127	2.608			2.751	
Crosswalk LOS			C					C	B			C	
s, b, Saturation Flow Rate of the bicycle lane		2000						2000	2000			2000	
c, b, Capacity of the bicycle lane [bicycles/h]		990						740	1307			806	
d, b, Bicycle Delay [s]		11.20						17.44	5.28			15.67	
I, b, int, Bicycle LOS Score for Intersection		2.603						2.510	2.860			2.485	
Bicycle LOS			B					B	B			B	

Sequence

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



Intersection Level Of Service Report

Intersection 6: Market St/Airport Rd-Festival Ln

Control Type: All-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 7.5
Level Of Service: A
Volume to Capacity (v/c): 0.079

Intersection Setup

Name	S Market St			N Market St			Airport Rd			Festival Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T			T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	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			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Market St			N Market St			Airport Rd			Festival Ln		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	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]	4	18	2	14	24	34	11	31	6	1	19	9
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	18	2	14	24	34	11	31	6	1	19	9
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	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	5	1	4	7	10	3	9	2	0	5	3
Total Analysis Volume [veh/h]	5	20	2	16	27	39	13	35	7	1	22	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Intersection Settings

Lanes						
Capacity per Entry Lane [veh/h]	681	762	686	830	860	887
Degree of Utilization, x	0.01	0.03	0.02	0.08	0.06	0.04
Movement, Approach, & Intersection Results						
95th-Percentile Queue Length [veh]	0.02	0.09	0.07	0.26	0.20	0.12
95th-Percentile Queue Length [ft]	0.55	2.23	1.79	6.46	5.11	2.90
Approach Delay [s/veh]	7.65		7.54		7.47	7.22
Approach LOS	A		A		A	A
Intersection Delay [s/veh]					7.48	
Intersection LOS					A	

Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 18.2
Level Of Service: B
Volume to Capacity (v/c): 0.478

Intersection Setup

Name	SR 53			SR 53			18th Ave		
Approach	Northbound			Southbound			Eastbound		
Lane Configuration	T L T			T L T			T L T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	675.00	100.00	100.00	720.00	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
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00		
Grade [%]	0.00			0.00			0.00		
Curb Present	No			No			No		
Crosswalk	Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			18th Ave			18th Ave		
Base Volume Input [veh/h]	4	721	86	98	806	0	1	0	3	77	4	86
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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]	117	9	0	0	13	167	113	17	91	0	24	0
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	8	0	0	0	0	0	2	0	0	54
Total Hourly Volume [veh/h]	121	730	78	98	819	167	114	17	92	77	28	32
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	205	22	28	230	47	32	5	26	22	8	9
Total Analysis Volume [veh/h]	136	820	88	110	920	188	128	19	103	87	31	36
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0			0			0			0		
v_dli, Inbound Pedestrian Volume crossing	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_cil, Inbound Pedestrian Volume crossing	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	7	0	0	7
Maximum Green [s]	21	50	0	21	50	0	42	0	0	42
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	0.0	0.0	3.2
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	0.0	0.0	2.0
Split [s]	26	57	0	26	57	0	47	0	0	47
Vehicle Extension [s]	1.5	3.4	0.0	1.5	3.4	0.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	7
Pedestrian Clearance [s]	0	26	0	0	17	0	23	0	0	23
Delayed Vehicle Green [s]	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	No	No	No	No	No	No
11, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0
12, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	0.0	0.0	3.2
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	L	C	L	C
C, Cycle Length [s]	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
L, Total Lost Time per Cycle [s]	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.20	6.50	5.20	6.50
11, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
12, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	4.50	3.20	4.50
g, I, Effective Green Time [s]	6	21	21	6	21	21	6	21	21	6	21	11	11	11	11
g / C, Green / Cycle	0.11	0.39	0.39	0.10	0.38	0.38	0.21	0.38	0.38	0.21	0.38	0.21	0.38	0.21	0.38
v / s, Volume / Saturation Flow Rate	0.08	0.25	0.25	0.06	0.30	0.30	0.10	0.30	0.30	0.10	0.30	0.07	0.07	0.07	0.04
s, saturation flow rate [veh/h]	1781	1870	1788	1781	1870	1781	1870	1788	1870	1781	1870	1628	1269	1708	1708
c, Capacity [veh/h]	198	723	695	184	708	667	308	667	708	308	667	333	258	350	350
d1, Uniform Delay [s]	23.68	13.84	13.86	23.72	15.37	15.39	23.02	15.37	15.39	23.02	15.37	18.93	24.05	18.22	18.22
k, delay calibration	0.04	0.13	0.13	0.04	0.13	0.13	0.11	0.13	0.13	0.11	0.11	0.11	0.11	0.11	0.11
1, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.57	1.10	1.16	1.15	2.56	2.76	0.90	2.56	2.76	0.90	0.67	0.77	0.77	0.26	0.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.64	0.64	0.60	0.80	0.81	0.42	0.37	0.34	0.19
d, Delay for Lane Group [s/veh]	25.26	14.94	15.03	24.87	17.93	18.15	23.92	19.60	24.81	18.49
Lane Group LOS	C	B	B	C	B	B	C	B	C	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.51	3.55	3.45	1.21	5.05	4.81	1.56	1.30	1.08	0.68
50th-Percentile Queue Length [ft/ln]	37.76	88.74	86.16	30.16	126.14	120.32	38.92	32.38	26.95	16.94
95th-Percentile Queue Length [veh/ln]	2.72	6.39	6.20	2.17	8.73	8.41	2.80	2.33	1.94	1.22
95th-Percentile Queue Length [ft/ln]	67.97	159.73	155.09	54.29	218.23	210.27	70.06	58.29	48.51	30.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.26	14.98	15.03	24.87	18.01	18.15	23.92	19.60	24.81	19.49	18.49
Movement LOS	C	B	B	C	B	B	C	B	C	B	B
d_A, Approach Delay [s/veh]	18.65	16.32	B		B		21.81			22.06	
Approach LOS							C			C	
d_I, Intersection Delay [s/veh]						18.23					
Intersection LOS						B					
Intersection V/C						0.478					

Other Modes

g_Walk,mt, Effective Walk Time [s]	11.0	11.0	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	17.81	17.81	17.81	17.81	17.81	17.81
I_p,Int, Pedestrian LOS Score for Intersection	3.181	3.261	2.113	2.131	2.131	2.131
Crosswalk LOS	C	C	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1822	1822	1508	1508	1508	1508
d_b, Bicycle Delay [s]	0.22	0.22	1.68	1.68	1.68	1.68
I_b,Int, Bicycle LOS Score for Intersection	2.428	2.564	1.975	1.903	1.903	1.903
Bicycle LOS	B	B	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-
SG_1 26s											
SG_2 57s											
SG_102 33s											
SG_104 30s											
SG_6 57s											
SG_8 47s											
SG_106 24s											
SG_108 30s											

Intersection Level Of Service Report

Control Type:	Roundabout	Delay (sec / veh):	6.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Old Hwy 53	Old Hwy 53	S Market St
Approach	Northbound	Southbound	Westbound
Lane Configuration	Thru Right	Left	Left Right
Turning Movement	Thru 12.00	Left 12.00	Thru 12.00
Lane Width [ft]	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00
Speed [mph]	35.00	35.00	30.00
Grade [%]	0.00	0.00	0.00
Crosswalk	Yes	Yes	Yes

Volumes

Name	Old Hwy 53	Old Hwy 53	S Market St
Base Volume Input [veh/h]	203	0	272
Base Volume Adjustment Factor	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0
Site-Generated Trips [veh/h]	65	218	29
Diverted Trips [veh/h]	0	0	0
Pass-by Trips [veh/h]	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0
Other Volume [veh/h]	0	0	0
Total Hourly Volume [veh/h]	268	218	301
Peak Hour Factor	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	62	86
Total Analysis Volume [veh/h]	305	248	342
Pedestrian Volume [ped/h]	0	0	0

Intersection Settings					
Number of Conflicting Circulating Lanes	1	1	1	1	1
Circulating Flow Rate [veh/h]	26	246	311		311
Existing Flow Rate [veh/h]	596	335	278		278
Demand Flow Rate [veh/h]	288	218	301	212	20
Adjusted Demand Flow Rate [veh/h]	305	248	342	241	23

Control Type: Signalized

Analysis Method: HCM 6th Edition

Analysis Period: 15 minutes

Delay (sec / veh): 7.5

Level Of Service: A

Volume to Capacity (v/c): 0.505

Lanes			
Overwrite Calculated Critical Headway	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00
A (intercept)	1380.00		1380.00
B (coefficient)	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98
Entry Flow Rate [veh/h]	565	375	270
Capacity of Entry and Bypass Lanes [veh/h]	1345	1074	1005
Pedestrian Impedance	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1319	1053	986
X, volume / capacity	0.42	0.35	0.27

Intersection Setup		Old Hwy 53		Old Hwy 53		S Market St	
Approach		Northbound		Southbound		Westbound	
Lane Configuration		T		T		T	
Turning Movement		Thru	Right	Left	Thru	Left	Right
Lane Width [ft]		12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket		0	0	1	0	0	1
Entry Pocket Length [ft]		100.00	100.00	100.00	100.00	100.00	50.00
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]		35.00		35.00		30.00	
Grade [%]		0.00		0.00		0.00	
Curb Present		No		No		No	
Crosswalk		Yes		Yes		Yes	

Movement, Approach, & Intersection Results			
Lane LOS			
95th-Percentile Queue Length [veh]	2.12	A	A
95th-Percentile Queue Length [ft]	53.03	39.41	27.13
Approach Delay [s/veh]	6.79	6.98	6.33
Approach LOS	A	A	A
Intersection Delay [s/veh]	6.74		
Intersection LOS	A		

Intersection Level Of Service Report			
Intersection 4: Old Hwy 53/S Market St			
Signalized			
HCM 6th Edition			
15 minutes			
Delay (sec / veh): 7.5			
Level Of Service: A			
Volume to Capacity (v/c): 0.505			

Volumes

Name	Old Hwy 53		Old Hwy 53		S Market St	
Base Volume Input [veh/h]	203	0	0	272	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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]	65	218	22	29	212	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	218	22	301	212	20
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	62	6	86	60	6
Total Analysis Volume [veh/h]	305	248	25	342	241	23
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing major street	0	0	0	0	0	0
v_di, Inbound Pedestrian Volume crossing major street [	0	0	0	0	0	0
v_co, Outbound Pedestrian Volume crossing minor street	0	0	0	0	0	0
v_ci, Inbound Pedestrian Volume crossing minor street [	0	0	0	0	0	0
v_ab, Corner Pedestrian Volume [ped/h]	0	0	0	0	0	0
Bicycle Volume [bicycles/h]	0	0	0	0	0	0

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
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	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7
Auxiliary Signal Groups	-	-	-	-	Lead
Lead / Lag	10	0	0	10	5
Minimum Green [s]	31	0	0	31	31
Maximum Green [s]	3.0	0.0	0.0	3.0	3.0
Amber [s]	1.0	0.0	0.0	1.0	1.0
All red [s]	35	0	0	35	35
Split [s]	3.0	0.0	0.0	3.0	3.0
Vehicle Extension [s]	5	0	0	5	5
Walk [s]	10	0	0	10	10
Pedestrian Clearances [s]	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	No	No	No	No	No
Rest in Walk	2.0	0.0	0.0	2.0	2.0
11, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0
12, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0
Minimum Recall	No	No	No	No	No
Maximum Recall	No	No	No	No	No
Pedestrian Recall	0.0	0.0	0.0	0.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	1.00	1.00	1.00	1.00	1.00
I, Upstream Filtering Factor	1.00	1.00	1.00	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	L	R
C, Cycle Length [s]	25	25	25	25	25
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_l, Effective Green Time [s]	12	12	12	5	5
g / C, Green / Cycle	0.47	0.47	0.47	0.21	0.21
(v / s)_l Volume / Saturation Flow Rate	0.35	0.03	0.20	0.15	0.02
s, saturation flow rate [veh/h]	1960	769	1683	1603	1431
c, Capacity [veh/h]	740	367	798	338	302
d1, Uniform Delay [s]	5.44	10.42	4.41	9.32	8.04
k, delay calibration	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.53	0.08	0.36	2.80	0.11
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	0.75	0.07	0.43	0.71	0.08
d, Delay for Lane Group [s/veh]	6.98	10.50	4.77	12.11	8.15
Lane Group LOS	A	B	A	B	A
Critical Lane Group	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/in]	0.81	0.09	0.33	1.02	0.07
50th-Percentile Queue Length [ft/in]	20.28	2.24	8.23	25.48	1.78
95th-Percentile Queue Length [veh/in]	1.46	0.16	0.59	1.83	0.13
95th-Percentile Queue Length [ft/in]	36.50	4.02	14.81	45.87	3.21

Movement, Approach, & Intersection Results

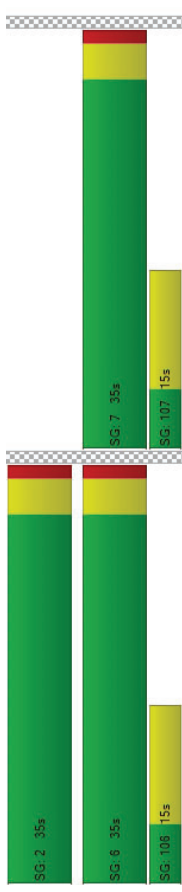
d_M, Delay for Movement [s/veh]	6.98	6.98	10.50	4.77	12.11	8.15
Movement LOS	A	A	B	A	B	A
d_A, Approach Delay [s/veh]	6.98	6.98	5.16	7.48	11.77	
Approach LOS	A	A	A	A	B	
d_I, Intersection Delay [s/veh]						
Intersection LOS						
Intersection V/C			0.506			

Other Modes

g, Walk, mt, Effective Walk Time [s]	9.0	9.0	9.0	9.0	9.0	
M_corner, Corner Circulation Area [ft²/peed]	0.00	0.00	0.00	0.00	0.00	
M_OW, Crosswalk Circulation Area [ft²/peed]	0.00	0.00	0.00	0.00	0.00	
d_p, Pedestrian Delay [s]	5.24	5.24	5.24	5.24	5.24	
l_p.int, Pedestrian LOS Score for Intersection	2.285	2.127	2.127	2.074	2.074	
Crosswalk LOS	B	B	B	B	B	
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000	2000	
c_b, Capacity of the bicycle lane [bicycles/h]	2454	2454	2454	2454	2454	
d_b, Bicycle Delay [s]	0.65	0.65	0.65	0.65	0.65	
l_b.int, Bicycle LOS Score for Intersection	2.472	2.166	2.166	1.960	1.960	
Bicycle LOS	B	B	B	A	A	

Sequence

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



Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 29.4
Level Of Service: C
Volume to Capacity (v/c): 0.600

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3L			3R			3R			3R		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	104	593	235	227	641	31	23	147	180	160	107	202
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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]	164	16	0	6	-6	104	100	11	130	0	14	10
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	14	0	0	10	0	0	83	0	0	40
Total Hourly Volume [veh/h]	268	599	221	233	635	125	123	158	227	160	121	172
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	172	64	67	182	36	35	45	65	46	35	49
Total Analysis Volume [veh/h]	308	689	254	268	730	144	141	182	261	184	139	198
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0			0			3			0		
v_dli, Inbound Pedestrian Volume crossing	3			0			0			0		
v_co, Outbound Pedestrian Volume crossing	1			0			0			0		
v_cil, Inbound Pedestrian Volume crossing	0			0			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			2			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	1	7	4	5	
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-	4.5
Lead / Lag													
Minimum Green [s]	5	10	0	5	10	0	5	10	5	5	10	5	
Maximum Green [s]	21	43	0	10	32	0	29	57	21	7	35	10	
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	4.1	3.2	3.2	4.1	3.2	
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	2.0	2.0	1.5	2.0	
Split [s]	26	50	0	15	39	0	34	63	26	12	41	15	
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	
Wak [s]	0	7	0	0	7	0	0	7	0	0	7	0	
Pedestrian Clearance [s]	0	26	0	0	25	0	0	28	0	0	28	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	No	No	No	No	No	No	No	No	
11, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	
12, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	3.6	3.2	3.2	3.6	3.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	L	R	C	L	R	C	R
C, Cycle Length [s]	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
L, Total Lost Time per Cycle [s]	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	6.50	5.20	5.60	5.20	6.50	5.60	5.20	5.20
11, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	4.50	3.20	3.60	0.00	3.20	3.60	0.00	0.00
g, I, Effective Green Time [s]	16	28	28	10	22	22	8	12	34	6	10	25				
g / C, Green / Cycle	0.20	0.36	0.36	0.12	0.28	0.28	0.10	0.15	0.43	0.08	0.13	0.32				
(v / s), J, Volume / Saturation Flow Rate	0.17	0.26	0.27	0.08	0.24	0.24	0.08	0.10	0.17	0.05	0.07	0.13				
s, saturation flow rate [veh/h]	1781	1870	1700	3459	1870	1764	1781	1870	1578	3459	1870	1579				
c, Capacity [veh/h]	364	673	612	427	522	493	182	285	675	267	238	508				
d1, Uniform Delay [s]	30.01	21.80	21.86	32.65	26.81	26.83	34.32	31.19	15.33	35.27	32.24	20.56				
k, delay calibration	0.16	0.11	0.11	0.11	0.12	0.12	0.11	0.11	0.14	0.11	0.11	0.11				
1, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
d2, Incremental Delay [s]	7.64	1.55	1.75	1.52	4.78	5.13	6.91	2.37	0.46	3.18	2.25	0.49				
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				

Lane Group Results

X, volume / capacity	0.85	0.73	0.74	0.63	0.86	0.86	0.78	0.64	0.39	0.69	0.58	0.39				
d, Delay for Lane Group [s/veh]	37.65	23.35	23.61	34.17	31.59	31.96	41.24	33.56	15.79	38.45	34.49	21.05				
Lane Group LOS	D	C	C	C	C	C	D	C	B	D	C	C				
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No	No	No	Yes				
50th-Percentile Queue Length [veh/ln]	5.72	6.90	6.37	2.27	7.59	7.22	2.86	3.27	2.99	1.76	2.53	2.69				
50th-Percentile Queue Length [ft/ln]	142.93	172.52	159.33	56.85	189.63	180.48	71.54	81.84	74.87	44.12	63.22	67.37				
95th-Percentile Queue Length [veh/ln]	9.64	11.21	10.51	4.09	12.10	11.63	5.15	5.89	5.39	3.18	4.55	4.85				
95th-Percentile Queue Length [ft/ln]	240.96	280.22	262.84	102.32	302.55	290.64	128.77	147.30	134.76	79.41	113.79	121.27				

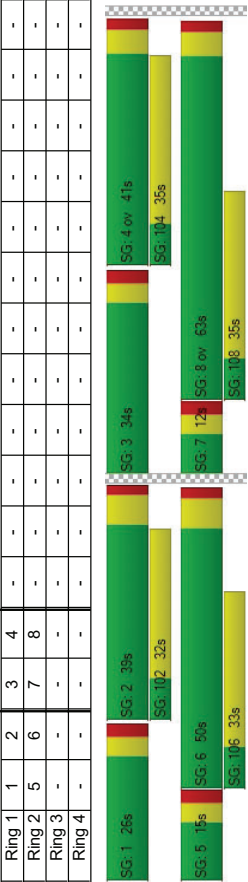
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.65	23.42	23.61	34.17	31.73	31.96	41.24	33.56	15.79	38.45	34.49	21.05
Movement LOS	D	C	C	C	C	C	D	C	B	D	C	C
d_A, Approach Delay [s/veh]	26.96			32.33			27.47			30.78		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	29.37						C					
Intersection LOS	C											
Intersection V/C	0.600											

Other Modes

g_Walk,mt, Effective Walk Time [s]	11.0	11.0	11.0	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	28.89	28.89	28.89	28.89	28.89	28.89	28.89
I_p,Int, Pedestrian LOS Score for Intersection	3.214	3.121	2.602	2.602	2.602	2.744	2.744
Crosswalk LOS	C	C	B	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1112	831	1467	1467	1467	905	905
d_b, Bicycle Delay [s]	7.71	13.37	2.76	2.76	2.76	11.73	11.73
I_b,Int, Bicycle LOS Score for Intersection	2.603	2.510	2.660	2.660	2.660	2.486	2.486
Bicycle LOS	B	B	B	B	B	B	B

Sequence



Intersection Level Of Service Report

Control Type:	Two-way stop	Delay (sec / veh):	13.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Old Hwy 53	Old Hwy 53	18th Ave Extension
Approach	Northbound	Southbound	Westbound
Lane Configuration	Thru Right	Thru Left	Thru Right
Turning Movement	Thru 12.00	Right 12.00	Thru 12.00
Lane Width [ft]	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00
Speed [mph]	35.00	35.00	30.00
Grade [%]	0.00	0.00	0.00
Crosswalk	Yes	Yes	Yes

Volumes

Name	Old Hwy 53	Old Hwy 53	18th Ave Extension
Base Volume Input [veh/h]	248	0	222
Base Volume Adjustment Factor	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0
Site-Generated Trips [veh/h]	62	21	50
Diverted Trips [veh/h]	0	0	0
Pass-by Trips [veh/h]	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0
Other Volume [veh/h]	0	0	0
Total Hourly Volume [veh/h]	310	21	272
Peak Hour Factor	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	6	72
Total Analysis Volume [veh/h]	326	22	286
Pedestrian Volume [ped/h]	0	0	0

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C Movement V/C Ratio	0.00	0.00	0.02	0.00	0.00	0.05
d_M Delay for Movement [s/veh]	0.00	0.00	7.98		13.82	10.33
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05		0.16	0.16
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.37		4.02	4.02
d_A Approach Delay [s/veh]	0.00		0.57			10.53
Approach LOS	A	A	A		B	
d_I Intersection Delay [s/veh]			0.81			
Intersection LOS			B			

Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized

Analysis Method: HCM 6th Edition

Analysis Period: 15 minutes

Delay (sec / veh): 129.2

Level Of Service: F

Volume to Capacity (v/c): 17.304

Intersection Setup

Name	SR 53			SR 53			18th Ave		
Approach	Northbound			Southbound			Eastbound		
Lane Configuration	T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	675.00	100.00	100.00	720.00	100.00	100.00	100.00	100.00	165.00
No. of Lanes in Exit Pocket	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
Speed [mph]	55.00			55.00			30.00		
Grade [%]	0.00			0.00			0.00		
Curb Present	No			No			No		
Crosswalk	Yes			Yes			Yes		

Volumes

Name	SR 53		SR 53		18th Ave		18th Ave		18th Ave	
Base Volume Input [veh/h]	2	854	55	52	0	1	1	0	58	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	71	-23	0	-18	161	200	25	82	0	20
Diverged Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	1	0	0	0	0	0	0	39
Total Hourly Volume [veh/h]	73	831	54	52	711	161	201	26	82	58
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	219	14	14	187	42	53	7	22	15
Total Analysis Volume [veh/h]	77	875	57	55	748	169	212	27	86	61
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0		0		1		1		1	
v_d_i, Inbound Pedestrian Volume crossing	1		1		0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0		0		0	
v_o_i, Inbound Pedestrian Volume crossing	0		0		0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0		0		0	
Bicycle Volume [bicydes/h]	1		0		0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	21	50	0	21	50	0	0	42	0	0	42	0
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	0.0	3.2	0.0	0.0	3.2	0.0
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	26	57	0	26	57	0	0	47	0	0	47	0
Vehicle Extension [s]	1.5	3.4	0.0	1.5	3.4	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	17	0	0	23	0	0	23	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	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	0.0	3.2	0.0	0.0	3.2	0.0
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group		L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]		92	92	92	92	92	92	92	92	92	92
L, Total Lost Time per Cycle [s]		5.20	6.50	6.50	5.20	6.50	5.20	5.20	5.20	5.20	5.20
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]		3.20	4.50	4.50	3.20	4.50	3.20	3.20	3.20	3.20	3.20
g_l, Effective Green Time [s]		6	28	28	5	27	42	42	42	42	42
g / C, Green / Cycle		0.07	0.30	0.30	0.06	0.29	0.46	0.46	0.46	0.46	0.46
(v / s)_J Volume / Saturation Flow Rate		0.04	0.25	0.25	0.03	0.25	17.01	0.05	2.56	0.02	0.02
s, saturation flow rate [veh/h]		1781	1870	1824	1781	1870	1752	14	1588	32	1588
c, Capacity [veh/h]		117	562	548	103	547	512	81	727	83	727
d1, Uniform Delay [s]		41.77	29.95	29.98	41.96	30.70	43.09	14.25	38.66	13.72	13.72
k, delay calibration		0.04	0.13	0.13	0.04	0.13	0.13	0.50	0.11	0.50	0.11
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]		2.34	3.97	4.14	1.61	4.96	5.27	916.48	0.07	94.78	0.02
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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		0.66	0.84	0.84	0.54	0.87	0.87	2.96	0.12	0.99	0.04
d, Delay for Lane Group [s/veh]		44.11	33.92	34.12	43.57	35.66	35.97	959.56	14.32	133.43	13.74
Lane Group LOS		D	C	C	D	D	D	F	B	F	B
Critical Lane Group		Yes	No	No	No	No	Yes	Yes	No	No	No
50th-Percentile Queue Length [veh/m]		1.67	9.30	9.14	1.18	9.62	9.06	22.35	1.01	4.04	0.32
50th-Percentile Queue Length [ft/m]		41.69	232.54	228.39	29.51	240.60	226.54	558.65	25.22	101.06	7.90
95th-Percentile Queue Length [veh/m]		3.00	14.30	14.09	2.12	14.71	14.00	40.22	1.82	7.28	0.57
95th-Percentile Queue Length [ft/m]		75.05	357.58	352.31	53.11	367.80	349.96	1005.56	45.40	181.91	14.22

Movement, Approach, & Intersection Results

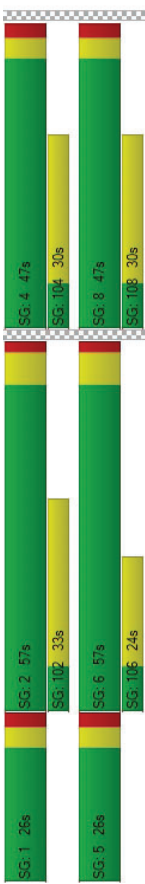
d_M, Delay for Movement [s/veh]	44.11	34.01	34.12	43.57	35.77	35.97	959.56	959.56	14.32	133.43	133.43	13.74
Movement LOS		D	C	C	D	D	F	F	B	F	F	B
d_A, Approach Delay [s/veh]		34.79			36.25		709.44				102.96	
Approach LOS		C			D		F			F		
d_I, Intersection Delay [s/veh]						129.23						
Intersection LOS						F						
Intersection VC						17.304						

Other Modes

g_WalkInt, Effective Walk Time [s]	11.0					11.0						11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00					0.00						0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	9508.19					8755.53						0.00
d_p, Pedestrian Delay [s]	35.51					35.51						35.51
L_p.int, Pedestrian LOS Score for Intersection		3.070				3.362				2.133		2.090
Crosswalk LOS		C				C				B		B
s_b, Saturation Flow Rate of the bicycle lane	2000					2000				2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]	1101					1101				912		912
d_b, Bicycle Delay [s]	9.26					9.25				13.57		13.57
L_b.int, Bicycle LOS Score for Intersection		2.383				2.362				2.096		1.805
Bicycle LOS		B				B				B		A

Sequence

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



Intersection Level Of Service Report

Intersection 3: Old Hwy 53/Airport Rd

Control Type: Two-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 17.1
Level Of Service: C
Volume to Capacity (v/c): 0.263

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		Airport Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	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]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Old Hwy 53		Old Hwy 53		Airport Rd	
Base Volume Input [veh/h]	248	0	0	222	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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]	19	81	33	21	105	43
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]	267	81	33	243	105	43
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	21	9	64	28	11
Total Analysis Volume [veh/h]	281	85	35	256	111	45
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.26	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	8.11	0.00	17.15	13.62
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/in]	0.00	0.00	0.09	0.00	1.40	1.40
95th-Percentile Queue Length [ft/in]	0.00	0.00	2.27	0.00	35.08	35.08
d_A, Approach Delay [s/veh]	0.00		0.98	16.13		16.13
Approach LOS	A		A	C		C
d_I, Intersection Delay [s/veh]			3.44			
Intersection LOS			C			

Intersection Level Of Service Report

Intersection 4: Old Hwy 53 S Market St

Control Type: Two-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 39.7
Level Of Service: E
Volume to Capacity (v/c): 0.717

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		S Market St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	50.00
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]	35.00			30.00		
Grade [%]	0.00			0.00		
Crosswalk	Yes			Yes		

Volumes

Name	Old Hwy 53			Old Hwy 53			S Market St		
Base Volume Input [veh/h]	248	0	0	222	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	84	226	16	109	221	221	16	16	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	332	226	16	331	221	221	16	16	16
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	59	4	87	58	58	4	4	4
Total Analysis Volume [veh/h]	349	238	17	348	233	233	17	17	17
Pedestrian Volume [ped/h]	0	0	0	0	0	0	0	0	0

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.72	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	8.71	0.00	38.69	11.23
Movement LOS	A	A	A	A	E	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.05	0.00	5.22	0.09
95th-Percentile Queue Length [ft]	0.00	0.00	1.31	0.00	130.49	2.20
d_A, Approach Delay [s/veh]	0.00			0.41	37.75	
Approach LOS	A			A	E	
d_I, Intersection Delay [s/veh]				7.97		
Intersection LOS	E					

Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 34.5
Level Of Service: C
Volume to Capacity (v/c): 0.628

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3L			3L			3L			3L		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	141	698	145	154	607	26	20	94	155	151	98	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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]	195	-52	0	8	-44	100	95	17	218	0	15	5
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	13	0	0	5	0	0	95	0	0	38
Total Hourly Volume [veh/h]	336	646	132	162	563	121	115	111	278	151	113	160
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	88	170	35	43	148	32	30	29	73	40	30	42
Total Analysis Volume [veh/h]	354	680	139	171	593	127	121	117	293	159	119	168
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0			1			2			1		
v_di, Inbound Pedestrian Volume crossing	2			1			0			1		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings									
Located in CBD		No							
Signal Coordination Group		-							
Cycle Length [s]		120							
Coordination Type		Time of Day Pattern Isolated							
Actuation Type		Fully actuated							
Offset [s]		0.0							
Offset Reference		Lead Green - Beginning of First Green							
Permissive Mode		SingleBand							
Lost time [s]		0.00							

Control Type	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	0	7	4	5	
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-	4.5
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	5	5
Maximum Green [s]	19	42	0	9	32	0	11	38	0	8	35	9	9
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	4.1	0.0	3.2	4.1	3.2	3.2
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	2.0	2.0
Split [s]	24	49	0	14	39	0	16	44	0	13	41	14	14
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0	0
Pedestrian Clearance [s]	0	26	0	0	25	0	0	28	0	0	28	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	0.0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	3.6	0.0	3.2	3.6	3.2	3.2
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No	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	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	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	1.00

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

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.30	24.23	24.32	37.82	36.47	36.66	46.99	28.34	37.90	42.39	29.79	19.70
Movement LOS	D	C	C	D	D	D	D	C	D	D	C	B
d_A, Approach Delay [s/veh]	36.76											
Approach LOS	C											
d_I, Intersection Delay [s/veh]	34.47											
Intersection LOS	C											
Intersection V/C	0.628											

Other Modes

g_Walk,mt, Effective Walk Time [s]	11.0	11.0	11.0	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.47	32.47	32.47	32.47	32.47	32.47	32.47
I_p,Int, Pedestrian LOS Score for Intersection	3.147	3.024	2.613	2.679	2.679	2.679	2.679
Crosswalk LOS	C	C	B	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	994	760	898	898	898	898	828
d_b, Bicycle Delay [s]	10.83	16.44	12.98	14.69	14.69	14.69	14.69
I_b,Int, Bicycle LOS Score for Intersection	2.538	2.299	2.593	2.593	2.593	2.593	2.593
Bicycle LOS	B	B	B	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-
SG_1	24s											
SG_2	33s											
SG_3	16s											
SG_4	41s											
SG_5	14s											
SG_6	49s											
SG_7	13s											
SG_8	44s											
SG_9	33s											
SG_10	32s											
SG_11	35s											
SG_12	35s											

Intersection Level Of Service Report

Control Type:	Ally-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.170

Intersection Setup

Name	S Market St	N Market St	Alport Rd	Festival Ln
Approach	Northbound	Southbound	Eastbound	Westbound
Lane Configuration	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right
Turning Movement	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right
Lane Width [ft]	12.00 12.00 12.00	12.00 12.00 12.00	12.00 12.00 12.00	12.00 12.00 12.00
No. of Lanes in Entry Pocket	1 0 0	1 0 0	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	30.00	30.00	30.00
Grade [%]	0.00	0.00	0.00	0.00
Crosswalk	Yes	Yes	Yes	Yes

Volumes

Name	S Market St	N Market St	Alport Rd	Festival Ln
Base Volume Input [veh/h]	0 0 0	0 0 0	0 0 0	0 0 0
Base Volume Adjustment Factor	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000
Heavy Vehicles Percentage [%]	2.00 2.00 2.00	2.00 2.00 2.00	2.00 2.00 2.00	2.00 2.00 2.00
Growth Factor	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]	14 52 4	43 53 16	35 77 13	4 83 47
Diversified Trips [veh/h]	0 0 0	0 0 0	0 0 0	0 0 0
Pass-by Trips [veh/h]	0 0 0	0 0 0	0 0 0	0 0 0
Existing Site Adjustment Volume [veh/h]	0 0 0	0 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]	14 52 4	43 53 16	35 77 13	4 83 47
Peak Hour Factor	0.9500 0.9500 0.9500	0.9500 0.9500 0.9500	0.9500 0.9500 0.9500	0.9500 0.9500 0.9500
Other Adjustment Factor	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000	1.0000 1.0000 1.0000
Total 15-Minute Volume [veh/h]	4 14 1	11 14 4	9 20 3	1 22 12
Total Analysis Volume [veh/h]	15 55 4	45 56 17	37 81 14	4 87 49
Pedestrian Volume [ped/h]	0	0	0	0

Intersection Settings

Lanes									
Capacity per Entry Lane [veh/h]		619	683	624	705	786	822		
Degree of Utilization, x		0.02	0.09	0.07	0.10	0.17	0.17		

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]		0.07	0.28	0.23	0.34	0.60	0.61	
95th-Percentile Queue Length [ft]		1.86	7.06	5.81	8.61	15.02	15.29	
Approach Delay [s/veh]		8.50		8.59		8.50	8.28	
Approach LOS		A		A		A	A	
Intersection Delay [s/veh]		8.46						A
Intersection LOS		A						

Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized

Analysis Method: HCM 6th Edition

Analysis Period: 15 minutes

Delay (sec / veh): 18.4

Level Of Service: B

Volume to Capacity (v/c): 0.453

Intersection Setup

Name	SR 53			SR 53			18th Ave			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	675.00	100.00	100.00	720.00	100.00	100.00	100.00	100.00	100.00	235.00	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]	55.00			55.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53		SR 53		18th Ave		18th Ave		18th Ave	
Base Volume Input [veh/h]	2	854	55	52	0	1	1	0	58	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	71	-23	0	-18	161	200	25	82	0	20
Diverged Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	1	0	0	0	0	0	0	39
Total Hourly Volume [veh/h]	73	831	54	52	711	161	201	26	82	58
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	219	14	14	187	42	53	7	22	15
Total Analysis Volume [veh/h]	77	875	57	55	748	169	212	27	86	61
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0		0		1		1		1	
v_di, Inbound Pedestrian Volume crossing	1		1		0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0		0		0	
v_ci, Inbound Pedestrian Volume crossing	0		0		0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0		0		0	
Bicycle Volume [bicydes/h]	1		0		0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	21	50	0	21	50	0	0	42	0	0	42	0
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	0.0	3.2	0.0	0.0	3.2	0.0
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Split [s]	26	57	0	26	57	0	0	47	0	0	47	0
Vehicle Extension [s]	1.5	3.4	0.0	1.5	3.4	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	17	0	0	23	0	0	23	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	-	No	No	-	No	No	-
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	0.0	3.2	0.0	0.0	3.2	0.0
Minimum Recall	No	Yes	No	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		L	C	C	L	C	C	L	C	L	C	L	C
C, Cycle Length [s]		52	52	52	52	52	52	52	52	52	52	52	52
L, Total Lost Time per Cycle [s]		5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.20	6.50	5.20	6.50
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	4.50	3.20	4.50
g_l, Effective Green Time [s]		5	18	18	4	17	17	14	14	14	14	14	14
g / C, Green / Cycle		0.09	0.34	0.34	0.07	0.32	0.32	0.26	0.26	0.26	0.26	0.26	0.26
(v / s)_J Volume / Saturation Flow Rate		0.04	0.25	0.25	0.03	0.25	0.25	0.16	0.07	0.07	0.05	0.03	0.03
s, saturation flow rate [veh/h]		1781	1870	1824	1781	1870	1752	1355	1647	1278	1698	1698	1698
c, Capacity [veh/h]		161	636	621	131	606	567	408	433	351	446	446	446
d1, Uniform Delay [s]		22.63	15.22	15.23	23.16	16.01	16.01	19.86	15.26	19.06	14.63	14.63	14.63
k, delay calibration		0.04	0.13	0.13	0.04	0.13	0.13	0.11	0.11	0.11	0.11	0.11	0.11
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
d2, Incremental Delay [s]		0.82	2.00	2.07	0.79	2.61	2.79	1.02	0.32	0.23	0.11	0.11	0.11
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.48	0.74	0.74	0.42	0.78	0.78	0.52	0.26	0.17	0.11	0.11	0.11
d, Delay for Lane Group [s/veh]		23.45	17.22	17.30	23.95	18.63	18.80	20.89	15.57	19.29	14.74	14.74	14.74
Lane Group LOS		C	B	B	C	B	B	C	B	B	B	B	B
Critical Lane Group		Yes	No	No	No	No	Yes	Yes	No	No	No	No	No
50th-Percentile Queue Length [veh/m]		0.78	3.87	3.80	0.57	4.13	3.90	2.32	0.99	0.61	0.41	0.41	0.41
50th-Percentile Queue Length [ft/m]		19.48	96.68	94.99	14.15	103.23	97.40	57.91	24.72	15.34	10.22	10.22	10.22
95th-Percentile Queue Length [veh/m]		1.40	6.96	6.84	1.02	7.43	7.01	4.17	1.78	1.10	0.74	0.74	0.74
95th-Percentile Queue Length [ft/m]		35.06	174.02	170.98	25.46	185.81	175.32	104.23	44.49	27.62	18.39	18.39	18.39

Movement, Approach, & Intersection Results

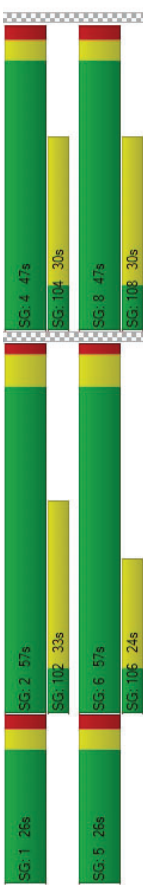
d_M, Delay for Movement [s/veh]		23.45	17.26	17.30	23.95	18.69	18.80	20.89	15.57	15.57	19.29	14.74	14.74
Movement LOS		C	B	B	C	B	B	C	B	B	B	B	B
d_A, Approach Delay [s/veh]			17.73			19.01			19.04		17.26		
Approach LOS			B			B			B		B		
d_I, Intersection Delay [s/veh]							18.40						
Intersection LOS							B						
Intersection VC							0.453						

Other Modes

g_WalkInt, Effective Walk Time [s]		11.0				11.0			11.0			11.0	
M_corner, Corner Circulation Area [ft²/ped]		0.00				0.00			0.00			0.00	
M_CW, Crosswalk Circulation Area [ft²/ped]		17702.43				16985.75			0.00			0.00	
d_p, Pedestrian Delay [s]		16.35				16.35			16.35			16.35	
L_pInt, Pedestrian LOS Score for Intersection		3.038				3.331			2.102			2.059	
Crosswalk LOS		C				C			B			B	
s_b, Saturation Flow Rate of the bicycle lane		2000				2000			2000			2000	
c_b, Capacity of the bicycle lane [bicycles/h]		1928				1928			1955			1955	
d_b, Bicycle Delay [s]		0.03				0.03			1.07			1.07	
L_bInt, Bicycle LOS Score for Intersection		2.383				2.362			2.096			1.805	
Bicycle LOS		B				B			B			A	

Sequence

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



Intersection Level Of Service Report

Intersection 4: Old Hwy 53 S Market St

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 6.9
Level Of Service: A

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		S Market St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	→		←		←	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in 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]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Old Hwy 53			Old Hwy 53			S Market St		
Base Volume Input [veh/h]	248	0	0	222	1,000	1,000	0	1,000	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	2.00	2.00	2.00	2.00	1.0000
Heavy Vehicles Percentage [%]	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	84	226	16	109	16	109	221	16	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	332	226	16	331	16	331	221	16	16
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	59	4	87	4	87	58	4	4
Total Analysis Volume [veh/h]	349	238	17	348	17	348	233	17	17
Pedestrian Volume [ped/h]	0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1	1	1	1	1
Circulating Flow Rate [veh/h]	17	238	373	356	356
Exiting Flow Rate [veh/h]	593	373	373	280	280
Demand Flow Rate [veh/h]	332	226	16	221	16
Adjusted Demand Flow Rate [veh/h]	349	238	17	233	17

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	599	373	373	255	255
Capacity of Entry and Bypass Lanes [veh/h]	1356	1083	1083	960	960
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1330	1062	1062	941	941
X, volume / capacity	0.44	0.34	0.34	0.27	0.27

Movement, Approach, & Intersection Results

Lane LOS		A	A	A
95th-Percentile Queue Length [veh]	2.31	1.54	1.54	1.07
95th-Percentile Queue Length [ft]	57.87	38.61	38.61	26.80
Approach Delay [s/veh]	7.04	6.88	6.88	6.53
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.88			
Intersection LOS	A			

Intersection Level Of Service Report

Intersection 4: Old Hwy 53 S Market St

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 7.5
Level Of Service: A
Volume to Capacity (v/c): 0.519

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		S Market St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	T		T		T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	50.00
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]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Old Hwy 53		Old Hwy 53		S Market St	
Base Volume Input [veh/h]	248		0		222	
Base Volume Adjustment Factor	1.0000		1.0000		1.0000	
Heavy Vehicles Percentage [%]	2.00		2.00		2.00	
Growth Factor	1.0000		1.0000		1.0000	
In-Process Volume [veh/h]	0		0		0	
Site-Generated Trips [veh/h]	84		226		109	
Diverted Trips [veh/h]	0		0		0	
Pass-by Trips [veh/h]	0		0		0	
Existing Site Adjustment Volume [veh/h]	0		0		0	
Other Volume [veh/h]	0		0		0	
Right Turn on Red Volume [veh/h]	0		0		0	
Total Hourly Volume [veh/h]	332		226		331	
Peak Hour Factor	0.9500		0.9500		0.9500	
Other Adjustment Factor	1.0000		1.0000		1.0000	
Total 15-Minute Volume [veh/h]	87		59		4	
Total Analysis Volume [veh/h]	349		238		17	
Presence of On-Street Parking	No		No		No	
On-Street Parking Maneuver Rate [h]	0		0		0	
Local Bus Stopping Rate [h]	0		0		0	
v_db, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
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	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7
Auxiliary Signal Groups	-	-	-	-	Lead
Lead / Lag	-	-	-	-	Lead
Minimum Green [s]	10	0	0	10	5
Maximum Green [s]	31	0	0	31	31
Amber [s]	3.0	0.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	1.0
Split [s]	35	0	0	35	35
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	5
Pedestrian Clearance [s]	10	0	0	10	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0
Rest in Walk	No	No	No	No	No
h1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0
t2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0
Minimum Recall	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0
l, Upstream Filtering Factor	1.00	1.00	1.00	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	L	R
C, Cycle Length [s]	25	25	25	25	25
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1, p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g, l, Effective Green Time [s]	12	12	12	12	5
g / C, Green / Cycle	0.48	0.48	0.48	0.48	0.20
(v / s), j Volume / Saturation Flow Rate	0.37	0.02	0.21	0.15	0.01
s, saturation flow rate [veh/h]	1571	746	1683	1603	1431
c, Capacity [veh/h]	759	356	814	325	290
d1, Uniform Delay [s]	5.44	10.59	4.29	9.48	8.20
k, delay calibration	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.72	0.05	0.36	2.96	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

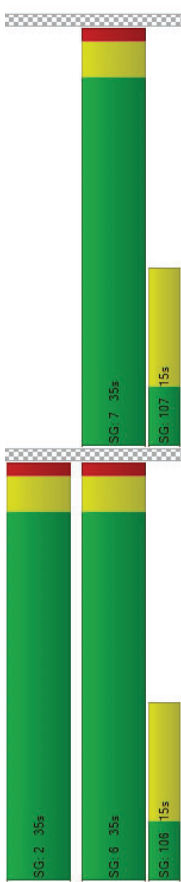
Lane Group Results

X, volume / capacity	0.77	0.05	0.43	0.72	0.06
d, Delay for Lane Group [s/veh]	7.15	10.64	4.65	12.43	8.28
Lane Group LOS	A	B	A	B	A
Critical Lane Group	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.85	0.06	0.31	1.01	0.05
50th-Percentile Queue Length [ft/ln]	21.36	1.55	7.78	25.34	1.35
95th-Percentile Queue Length [veh/ln]	1.54	0.11	0.56	1.82	0.10
95th-Percentile Queue Length [ft/ln]	38.44	2.79	14.00	45.60	2.42

Movement, Approach, & Intersection Results									
d.M. Delay for Movement [s/veh]	7.15	7.15	10.64	4.65	12.43	8.28			
Movement LOS	A	A	B	A	B	A			
d.A. Approach Delay [s/veh]	7.15	4.93	12.15						
Approach LOS	A	A	B						
d.J. Intersection Delay [s/veh]	7.52								
Intersection LOS	A								
Intersection V/C	0.519								

Other Modes				
g. Walk/mt. Effective Walk Time [s]	9.0	9.0		9.0
M_corner. Corner Circulation Area [ft²/peel]	0.00	0.00		0.00
M_CW. Crosswalk Circulation Area [ft²/peel]	0.00	0.00		0.00
d_p. Pedestrian Delay [s]	5.27	5.27		5.27
I_p.int. Pedestrian LOS Score for Intersection	2.303	2.141		2.052
Crosswalk LOS	B	B		B
s_b. Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000		2000
c_b. Capacity of the bicycle lane [bicycles/h]	2447	2447		2447
d_b. Bicycle Delay [s]	0.63	0.63		0.63
I_b.int. Bicycle LOS Score for Intersection	2.528	2.162		1.960
Bicycle LOS	B	B		A

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



Intersection Level Of Service Report
Intersection 5: SR 53/Dam Rd

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 27.5
Level Of Service: C
Volume to Capacity (v/c): 0.581

Intersection Setup									
Name	SR 53			SR 53			Old Hwy 53		Dam Rd
Approach	Northbound			Southbound			Eastbound		Westbound
Lane Configuration	⬅️			⬅️			⬅️		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	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	2	0	0	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	250.00
No. of Lanes in Exit Pocket	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
Speed [mph]	55.00			55.00			35.00		35.00
Grade [%]	0.00			0.00			0.00		0.00
Curb Present	No			No			No		No
Crosswalk	Yes			Yes			Yes		Yes

Generated with **PTV** **VISTRO**
Version 2022 (SP 0-11)

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	141	698	145	154	607	26	20	94	155	151	98	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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]	195	-52	0	8	-44	100	95	17	218	0	15	5
Diversified Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	13	0	0	5	0	0	95	0	0	38
Total Hourly Volume [veh/h]	336	646	132	162	563	121	115	111	278	151	113	160
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	88	170	35	43	148	32	30	29	73	40	30	42
Total Analysis Volume [veh/h]	354	680	139	171	593	127	121	117	293	159	119	168
Presence of On-Street Parking	No	No	No	No	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_o, Outbound Pedestrian Volume crossing	0	0	1				2			1		
v_d, Inbound Pedestrian Volume crossing	2			1			0			1		
v_o, Outbound Pedestrian Volume crossing	0	0	0	0			0			0		
v_i, Inbound Pedestrian Volume crossing	0	0	0	0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0	0	0	0			0			0		
Bicycle Volume [bicycles/h]	1		0	0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

[illegible]

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group		L	C	C	L	C	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]		74	74	74	74	74	74	74	74	74	74	74	74	74	74
L, Total Lost Time per Cycle [s]		5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.20	6.50	5.20	6.50	5.20	6.50
l1.p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	4.50	3.20	4.50	3.20	4.50
g.l, Effective Green Time [s]		17	27	27	8	18	18	6	12	34	5	10	24		
g / C, Green / Cycle		0.23	0.36	0.36	0.11	0.24	0.24	0.09	0.16	0.46	0.07	0.14	0.32		
(v / s) J Volume / Saturation Flow Rate		0.20	0.23	0.23	0.05	0.20	0.20	0.07	0.06	0.18	0.05	0.06	0.11		
s, saturation flow rate [veh/h]		1781	1870	1753	3459	1870	1757	1781	1870	1989	3459	1870	1988		
c, Capacity [veh/h]		406	673	631	367	446	419	156	297	734	245	266	514		
d1, Uniform Delay [s]		27.51	19.54	19.59	31.07	26.76	26.77	33.03	27.92	13.10	33.46	29.06	18.89		
k, delay calibration		0.24	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.20	0.11	0.11	0.11		
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		
d2, Incremental Delay [s]		11.80	0.96	1.04	0.92	4.12	4.38	8.05	0.85	0.64	2.88	1.18	0.37		
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		

Lane Group Results

X, volume / capacity		0.87	0.63	0.63	0.47	0.83	0.83	0.78	0.39	0.40	0.65	0.45	0.33		
d, Delay for Lane Group [s/veh]		39.31	20.51	20.63	31.99	30.88	31.15	41.08	28.77	13.75	36.34	30.25	19.26		
Lane Group LOS		D	C	C	C	C	C	D	C	B	D	C	B		
Critical Lane Group		Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No		
50th-Percentile Queue Length [veh/m]		6.55	5.13	4.87	1.33	5.88	5.56	2.37	1.83	2.97	1.43	1.93	2.07		
50th-Percentile Queue Length [ft/m]		163.75	128.28	121.71	33.35	147.05	139.00	59.34	45.86	74.33	35.66	48.17	51.78		
95th-Percentile Queue Length [veh/m]		10.75	8.85	8.49	2.40	9.86	9.43	4.27	3.30	5.35	2.57	3.47	3.73		
95th-Percentile Queue Length [ft/m]		268.68	221.15	212.18	60.03	246.49	235.68	106.82	82.55	133.80	64.20	86.71	93.21		

Movement, Approach, & Intersection Results

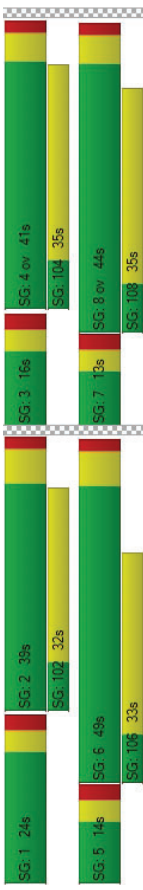
d.M, Delay for Movement [s/veh]		39.31	20.55	20.63	31.99	30.98	31.15	41.08	28.77	13.75	36.34	30.25	19.26
Movement LOS		D	C	C	C	C	C	D	C	B	D	C	B
d.A, Approach Delay [s/veh]			26.22			31.20		23.28				28.28	
Approach LOS			C			C		C				C	
d.J, Intersection Delay [s/veh]							27.47						
Intersection LOS							C						
Intersection VC							0.581						

Other Modes

g.WalkInt, Effective Walk Time [s]		11.0				11.0							11.0
M_corner, Corner Circulation Area [ft ² /ped]		0.00				0.00				0.00			0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]		0.00				0.00				0.00			0.00
d.p, Pedestrian Delay [s]		26.72				26.72				26.72			26.72
l.p.int, Pedestrian LOS Score for Intersection		3.139				3.016				2.605			2.671
Crosswalk LOS		C				C				B			B
s.b, Saturation Flow Rate of the bicycle lane		2000				2000				2000			2000
c.b, Capacity of the bicycle lane [bicycles/h]		1152				881				1041			959
d.b, Bicycle Delay [s]		6.64				11.56				8.49			9.99
l.b.int, Bicycle LOS Score for Intersection		2.538				2.299				2.593			2.568
Bicycle LOS		B				B				B			B

Sequence

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



Intersection Level Of Service Report

Control Type: Two-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 15.6
Level Of Service: C
Volume to Capacity (v/c): 0.020

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		18th Ave Extension	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	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]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Old Hwy 53		Old Hwy 53		18th Ave Extension	
Base Volume Input [veh/h]	199	0	0	240	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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]	92	8	53	102	7	48
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]	291	8	53	342	7	48
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	2	14	87	2	12
Total Analysis Volume [veh/h]	297	8	54	349	7	49
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.04	0.00	0.02	0.07
d_M, Delay for Movement [s/veh]	0.00	0.00	8.00	0.00	15.55	10.39
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/in]	0.00	0.00	0.13	0.00	0.28	0.28
95th-Percentile Queue Length [ft/in]	0.00	0.00	3.37	0.00	7.02	7.02
d_A, Approach Delay [s/veh]	0.00	0.00	1.07	A	11.04	
Approach LOS	A	A	A		B	
d_I, Intersection Delay [s/veh]				1.37		
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 263.7
Level Of Service: F
Volume to Capacity (v/c): 31.051

Intersection Setup

Name	SR 53			18th Ave		
Approach	Northbound			Eastbound		
Lane Configuration	T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	675.00	100.00	100.00	100.00	100.00	165.00
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]	55.00			30.00		
Grade [%]	0.00			0.00		
Curb Present	No			No		
Crosswalk	Yes			Yes		

Volumes

Name	SR 53			18th Ave		
Base Volume Input [veh/h]	2	568	44	42	580	3
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]	161	3	0	0	7	300
Diverter Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	3	0	0	0
Total Hourly Volume [veh/h]	163	571	41	42	587	303
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	147	11	11	151	78
Total Analysis Volume [veh/h]	168	589	42	43	605	312
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [h]	0	0	0	0	0	0
Local Bus Stopping Rate [h]	0	0	0	0	0	0
v_d0, Outbound Pedestrian Volume crossing	0			0		
v_d1, Inbound Pedestrian Volume crossing	0			0		
v_c0, Outbound Pedestrian Volume crossing	0			0		
v_c1, Inbound Pedestrian Volume crossing	0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0		
Bicycle Volume [bicycles/h]	0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Lead / Lag	7	8	0	7	8	0	7	0	7	0	7	0
Minimum Green [s]	21	50	0	21	50	0	42	0	42	0	42	0
Maximum Green [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	0.0	3.2	0.0	3.2	0.0
Amber [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	0.0	2.0	0.0	2.0	0.0
All red [s]	26	57	0	26	57	0	47	0	47	0	47	0
Split [s]	1.5	3.4	0.0	1.5	3.4	0.0	3.0	0.0	3.0	0.0	3.0	0.0
Vehicle Extension [s]	0	7	0	0	7	0	0	7	0	0	7	0
Wak [s]	0	26	0	0	17	0	0	23	0	0	23	0
Pedestrian Clearance [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
Delayed Vehicle Green [s]	No	No	No	No	No	No	No	No	No	No	No	No
Rest in Walk	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0	0.0
I1, Start-Up Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	0.0	3.2	0.0	3.2	0.0
I2, Clearance Lost Time [s]	No	Yes	No	Yes	No	No	No	No	No	No	No	No
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	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 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]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
I, Upstream Filtering Factor												

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.20	6.50	5.20	5.20	6.50	5.20	5.20	6.50	5.20	5.20	5.20
I1, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	3.20	3.20
g, I, Effective Green Time [s]	11	36	36	5	30	30	42	42	42	42	42
g / C, Green / Cycle	0.11	0.36	0.36	0.05	0.30	0.30	0.42	0.42	0.42	0.42	0.42
(v / s), Volume / Saturation Flow Rate	0.09	0.17	0.17	0.02	0.26	0.26	0.30	0.30	0.09	0.41	0.00
s, saturation flow rate [veh/h]	1781	1870	1827	1781	1870	1658	11	1589	170	1589	1589
c, Capacity [veh/h]	201	676	660	88	558	495	72	667	120	667	667
d1, Uniform Delay [s]	43.44	24.57	24.57	46.27	33.26	33.26	49.99	18.58	24.78	16.88	16.88
k, delay calibration	0.04	0.13	0.13	0.04	0.13	0.13	0.50	0.11	0.42	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.47	0.60	0.61	1.53	5.06	5.66	1615.39	0.17	15.69	0.00	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.84	0.47	0.47	0.49	0.87	0.87	4.52	0.22	0.57	0.01	0.01
d, Delay for Lane Group [s/veh]	46.91	25.17	25.19	47.80	36.32	38.82	1865.37	18.74	40.47	16.88	16.88
Lane Group LOS	D	C	C	D	D	D	F	B	D	B	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	4.01	5.38	5.27	1.02	10.94	9.78	34.05	2.20	1.47	0.05	0.05
50th-Percentile Queue Length [ft/ln]	100.37	134.62	131.68	25.56	273.40	244.47	851.34	55.01	36.71	1.34	1.34
95th-Percentile Queue Length [veh/ln]	7.23	9.19	9.03	1.84	16.36	14.91	60.89	3.96	2.64	0.10	0.10
95th-Percentile Queue Length [ft/ln]	180.67	229.76	225.78	46.01	408.98	372.69	1522.36	99.02	66.08	2.41	2.41

Movement Approach & Intersection Results

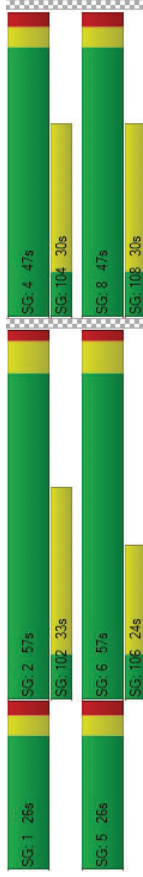
d_m Delay for Movement [s/veh]	46.91	25.18	25.19	47.80	38.44	38.92	1065.37	1665.37	16.74	40.47	40.47	16.88
Movement LOS	D	C	C	D	D	D	F	F	B	D	D	B
d_A Approach Delay [s/veh]	29.75			39.01			1147.76			39.18		
Approach LOS	C			D			F			D		
d_I Intersection Delay [s/veh]							263.71					
Intersection LOS							F					
Intersection V/C							31.051					

Other Modes

g_walk.mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.54	39.54	39.54	39.54
L_p,int, Pedestrian LOS Score for Intersection	2.908	3.379	2.270	2.075
Crosswalk LOS				
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1011	1011	837	837
d_b, Bicycle Delay [s]	12.20	12.20	16.88	16.88
L_b,int, Bicycle LOS Score for Intersection	2.221	2.352	2.342	1.741
Bicycle LOS				
	B	B	B	A

Sequence

Sequence	1	2	4	8	16	32	64	128	256	512	1024	2048	4096	8192	16384	32768	65536	131072	262144	524288	1048576	2097152	4194304	8388608	16777216	33554432	67108864	134217728	268435456	536870912	1073741824	2147483648	4294967296	8589934592	17179869184	34359738368	68719476736	137438953472	274877906944	549755813888	1099511627776	2199023255552	4398046511104	8796093022208	17592186044416	35184372088832	70368744177664	140737488355328	281474976710656	562949953421312	1125899906842624	2251799813685248	4503599627370496	9007199254740992	18014398509481984	36028797018963968	72057594037927936	144115188075855872	288230376151711744	576460752303423488	1152921504606846976	2305843009213693952	4611686018427387904	9223372036854775808	18446744073709551616	36893488147419103232	73786976294838206464	147573952589676412928	295147905179352825856	590295810358705651712	1180591620717411303424	2361183241434822606848	4722366482869645213696	9444732965739290427392	18889465931478580854784	37778931862957161709568	75557863725914323419136	151115727451828646838272	302231454903657293676544	604462909807314587353088	1208925819614629174706176	2417851639229258349412352	4835703278458516698824704	9671406556917033397649408	19342813113834066795298816	38685626227668133590597632	77371252455336267181195264	154742504910672534362390528	309485009821345068724781056	618970019642690137449562112	1237940039285380274899124224	2475880078570760549798248448	4951760157141521099596496896	9903520314283042199192993792	19807040628566084398385987584	39614081257132168796771975168	79228162514264337593543950336	158456325028528675187087900672	316912650057057350374175801344	633825300114114700748351602688	1267650600228229401496703205376	2535301200456458802993406410752	5070602400912917605986812821504	10141204801825835211973625643008	20282409603651670423947251286016	40564819207303340847894502572032	81129638414606681695789005144064	162259276829213363391578010288128	324518553658426726783156020576256	649037107316853453566312041152512	1298074214633706907132624082305024	2596148429267413814265248164610048	5192296858534827628530496329220096	10384593717069655257060992658440192	20769187434139310514121985316880384	41538374868278621028243970633760768	83076749736557242056487941267521536	166153499473114484112975882535043072	332306998946228968225951765070086144	664613997892457936451903530140172288	1329227995784915872903807060280344576	2658455991569831745807614120560689152	5316911983139663491615228241121378304	10633823966279326983230456482242756608	21267647932558653966460912964485513216	42535295865117307932921825928971026432	85070591730234615865843651857942052864	170141183460469231731687303715884105728	340282366920938463463374607431768211456	680564733841876926926749214863536422912	1361129467683753853853498429727072845824	2722258935367507707706996859454145691648	5444517870735015415413993718908291383296	10889035741470030830827987437816582766592	21778071482940061661655974875633165533184	43556142965880123323311949751266331066368	87112285931760246646623899502532662132736	174224571863520493293247799005065324265472	348449143727040986586495598010130648530944	696898287454081973172991196020261297061888	1393796574908163946345982392040522594123776	2787593149816327892691964784081045188247552	5575186299632655785383929568162090376495104	11150372599265311570767859136324180752990208	22300745198530623141535718272648361505
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Intersection Level Of Service Report

Intersection 3: Old Hwy 53/Airport Rd

Intersection or Starting Component	Delay (sec / veh):	20.6
Two-way stop	Level Of Service:	C
HCM 6th Edition	Volume to Capacity (v/c):	0.33
15 minutes		

Intersection Setup

Name	Old Hwy 53 Northbound	Old Hwy 53 Southbound	Airport Rd Westbound
Approach			
Lane Configuration			
Turning Movement			
Lane Width [ft]	Thru 12.00	Left 12.00	Left 12.00
No. of Lanes in Entry Pocket	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00
Speed [mph]	35.00	35.00	30.00
Grade [%]	0.00		0.00
Crosswalk	Yes	Yes	Yes

Volumes

Name	Old Hwy 53		Old Hwy 53		Airport Rd	
Base Volume Input [veh/h]	199	0	0	240	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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]	37	142	65	41	121	57
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	236	142	65	281	121	57
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	36	17	72	31	15
Total Analysis Volume [veh/h]	241	145	66	287	123	58
Pedestrian Volume [ped/h]	0	0	0	0	0	0

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.06	0.00	0.34	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	8.25	0.00	20.59	15.71
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh/in]	0.00	0.00	0.18	0.00	2.01	2.01
95th-Percentile Queue Length [ft/in]	0.00	0.00	4.47	0.00	50.18	50.18
d_A, Approach Delay [s/veh]	0.00		1.54		19.02	
Approach LOS	A	A	A		C	
d_I, Intersection Delay [s/veh]			4.33			
Intersection LOS			C			

Intersection Level Of Service Report

Intersection 4: Old Hwy 53/S Market St

Control Type:	Two-way stop	Delay (sec / veh):	95.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.007

Intersection Setup

Name	Old Hwy 53	Old Hwy 53	S Market St
Approach	Northbound	Southbound	Westbound
Lane Configuration			
Turning Movement	Thru	Left	Left
Lane Width [ft]	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00
Speed [mph]	35.00	35.00	30.00
Grade [%]	0.00	0.00	0.00
Crosswalk	Yes	Yes	Yes

Volumes

Name	Old Hwy 53	Old Hwy 53	S Market St
Base Volume Input [veh/h]	199	0	240
Base Volume Adjustment Factor	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0
Site-Generated Trips [veh/h]	150	31	131
Diverted Trips [veh/h]	0	0	0
Pass-by Trips [veh/h]	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0
Other Volume [veh/h]	0	0	0
Total Hourly Volume [veh/h]	349	31	371
Peak Hour Factor	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	71	96
Total Analysis Volume [veh/h]	356	32	379
Pedestrian Volume [ped/h]	0	0	0

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C Movement V/C Ratio	0.00	0.00	0.03	0.00	1.01	0.05
d_M Delay for Movement [s/veh]	0.00	0.00	8.95	0.00	95.32	11.64
Movement LOS	A	A	A	A	F	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.11	0.00	10.44	0.17
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.63	0.00	260.97	4.14
d_A Approach Delay [s/veh]	0.00		0.70		87.33	
Approach LOS	A	A	A		F	
d_I Intersection Delay [s/veh]			20.28			
Intersection LOS			F			

Intersection Level Of Service Report

Intersection 6: SR 53/Dam Rd

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 32.7
Level Of Service: C
Volume to Capacity (v/c): 0.612

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3L			3L			3L			3L		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name		SR 53			SR 53			Old Hwy 53			Dann Rd		
Base Volume Input [veh/h]	88	366	147	175	415	28	16	113	118	137	91	199	
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Heavy Vehicles Percentage [%]	2.00	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]	276	31	0	12	14	123	119	25	265	0	30	14	
Diverged Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	32	0	0	8	0	0	76	0	0	80	
Total Hourly Volume [veh/h]	364	397	115	187	429	143	135	138	307	127	121	133	
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Total 15-Minute Volume [veh/h]	93	101	29	48	109	36	34	35	78	35	31	34	
Total Analysis Volume [veh/h]	371	405	117	191	438	146	138	141	313	140	123	136	
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	
v_d0, Outbound Pedestrian Volume crossing	1			2			0			0			
v_o1, Inbound Pedestrian Volume crossing	0			0			1			2			
v_o0, Outbound Pedestrian Volume crossing	0			0			0			0			
v_o1, Inbound Pedestrian Volume crossing	0			0			0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0			
Bicycle Volume [bicycles/h]	0			2			0			0			

Volumes

Intersection Settings											
Located in CBD											
Signal Coordination Group											
Cycle Length [s]											
180											
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											
Signal Group											
1											
Protecte											
Lead											
Auxiliary Signal Groups											
Lead / Lag											
5											
Minimum Green [s]											
63											
Maximum Green [s]											
3.2											
Amber [s]											
2.0											
All red [s]											
68											
Split [s]											
3.0											
Vehicle Extension [s]											
Walk [s]											
0											
Pedestrian Clearance [s]											
0											
Delayed Vehicle Green [s]											
0.0											
Rest in Walk											
No											
11, Start-Up Lost Time [s]											
2.0											
12, Clearance Lost Time [s]											
3.2											
Minimum Recall											
No											
Maximum Recall											
No											
Pedestrian Recall											
No											
Detector Location [ft]											
0.0											
Detector Length [ft]											
0.0											
1, Upstream Filtering Factor											
1.00											
Exclusive Pedestrian Phase											
Pedestrian Signal Group											
0											
Pedestrian Walk [s]											
0											
Pedestrian Clearance [s]											
0											

Lane Group Calculations

[illegible]

Lane Group Results

X, volume / capacity d, Delay for Lane Group [s/veh]	Lane Group LOS											
	Critical Lane Group			50th-Percentile Queue Length [veh/ln]			50th-Percentile Queue Length [ft/ln]			95th-Percentile Queue Length [veh/ln]		
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C	D	D	C	B
	0.88	0.42	0.42	0.59	0.81	0.83	0.79	0.33	0.86	0.64	0.34	0.24
	36.75	21.53	21.57	37.85	36.21	37.18	44.29	27.13	36.53	41.23	29.44	19.08
	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
	D	C	C	D	D	D	C	C				

Movement, Approach, & Intersection Results

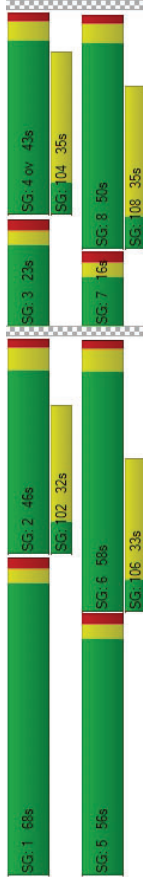
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Other Modes

g_w , Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0	11.0
M_c,corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00	0.00
M_cw, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.30	31.30	31.30	31.30	31.30
L_p,int, Pedestrian LOS Score for Intersection	3.017	2.919	2.609	2.744	2.744
Crosswalk LOS					
s_b, Saturation Flow Rate of the bicycle link	2000	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1239	950	1088	900	900
d_b, Bicycle Delay [s]	6.02	11.47	9.03	12.58	12.58
L_b,int, Bicycle LOS Score for Intersection	2.323	2.206	2.662	2.350	2.350
Bicycle LOS					
	B	B	B	B	B

Sequence

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



Intersection Level Of Service Report

Intersection 6: Market St/Airport Rd-Festival Ln

Control Type: All-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 9.5
Level Of Service: A
Volume to Capacity (v/c): 0.264

Intersection Setup

Name	S Market St			N Market St			Airport Rd			Festival Ln		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T			T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	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			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Market St			N Market St			Airport Rd			Festival Ln		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	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]	24	71	8	69	90	26	19	141	27	7	126	61
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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]	24	71	8	69	90	26	19	141	27	7	126	61
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	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	18	2	18	23	7	5	36	7	2	32	16
Total Analysis Volume [veh/h]	24	72	8	70	92	27	19	144	28	7	129	62
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Intersection Settings

Lanes						
Capacity per Entry Lane [veh/h]	573	631	584	655	733	751
Degree of Utilization, x	0.04	0.13	0.12	0.18	0.26	0.26
Movement, Approach, & Intersection Results						
95th-Percentile Queue Length [veh]	0.13	0.43	0.41	0.66	1.04	1.06
95th-Percentile Queue Length [ft]	3.27	10.82	10.15	16.50	26.03	26.46
Approach Delay [s/veh]	9.24		9.52		9.63	
Approach LOS	A		A		A	
Intersection Delay [s/veh]	9.51					A
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 21.5
Level Of Service: C
Volume to Capacity (v/c): 0.564

Intersection Setup

Name	SR 53			SR 53			18th Ave		
Approach	Northbound			Southbound			Eastbound		
Lane Configuration	T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	675.00	100.00	100.00	720.00	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
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00		
Grade [%]	0.00			0.00			0.00		
Curb Present	No			No			No		
Crosswalk	Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			18th Ave			18th Ave		
Base Volume Input [veh/h]	2	568	44	42	580	3	0	3	3	23	0	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	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]	161	3	0	0	7	300	275	37	142	0	44	0
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	3	0	0	0	0	0	0	0	0	37
Total Hourly Volume [veh/h]	163	571	41	42	587	303	275	40	145	23	44	4
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	147	11	11	151	78	71	10	37	6	11	1
Total Analysis Volume [veh/h]	168	589	42	43	605	312	284	41	149	24	45	4
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0			0			0			0		
v_dli, Inbound Pedestrian Volume crossing	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_cil, Inbound Pedestrian Volume crossing	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]	130
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss
Signal Group	5	2	0	1	6	0	0	4	0	0
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	7	0	0	7
Maximum Green [s]	21	50	0	21	50	0	42	0	0	42
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	0.0	0.0	3.2
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	0.0	0.0	2.0
Split [s]	26	57	0	26	57	0	47	0	0	47
Vehicle Extension [s]	1.5	3.4	0.0	1.5	3.4	0.0	3.0	0.0	0.0	3.0
Walk [s]	0	7	0	0	7	0	0	0	0	7
Pedestrian Clearance [s]	0	26	0	0	17	0	23	0	0	23
Delayed Vehicle Green [s]	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	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	2.0
I2, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	0.0	0.0	3.2
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	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

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	L	C
C, Cycle Length [s]	64	64	64	64	64	64	64	64	64	64	64	64
L, Total Lost Time per Cycle [s]	5.20	6.50	5.20	5.20	6.50	5.20	5.20	6.50	5.20	6.50	5.20	6.50
I1, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	4.50	3.20	4.50
g, I, Effective Green Time [s]	8	24	24	4	20	20	19	19	19	19	19	19
g / C, Green / Cycle	0.12	0.38	0.38	0.06	0.32	0.32	0.30	0.30	0.30	0.30	0.30	0.30
s, saturation Flow rate [veh/h]	1781	1870	1827	1781	1870	1658	1356	1643	1183	1183	1843	1843
c, Capacity [veh/h]	211	708	692	105	597	529	448	492	320	320	552	552
d1, Uniform Delay [s]	27.56	14.95	14.95	29.15	20.11	20.11	23.00	17.82	22.36	22.36	16.19	16.19
k, delay calibration	0.04	0.13	0.13	0.04	0.13	0.13	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.62	0.52	0.54	0.96	3.22	3.61	1.49	0.50	0.10	0.07	0.07	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.45	0.45	0.41	0.81	0.81	0.63	0.39	0.08	0.09		
d, Delay for Lane Group [s/veh]	30.18	15.47	15.49	30.11	23.33	23.72	24.49	18.31	22.45	16.26		
Lane Group LOS	C	B	B	C	C	C	C	B	C	B		
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No		
50th-Percentile Queue Length [veh/ln]	2.33	2.82	2.76	0.59	5.87	5.27	3.97	2.13	0.30	0.49		
50th-Percentile Queue Length [ft/ln]	56.16	70.60	69.08	14.77	146.84	131.66	99.21	53.28	7.47	12.35		
95th-Percentile Queue Length [veh/ln]	4.19	5.08	4.97	1.06	9.85	9.03	7.14	3.84	0.54	0.89		
95th-Percentile Queue Length [ft/ln]	104.68	127.08	124.35	26.59	246.21	225.75	178.57	95.90	13.44	22.23		

Movement, Approach, & Intersection Results

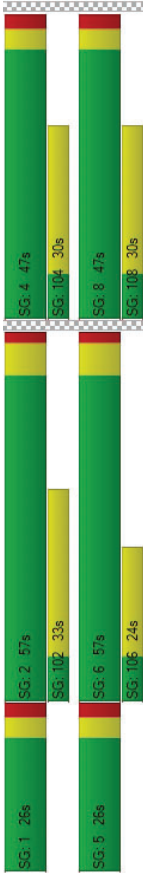
d_M, Delay for Movement [s/veh]	30.18	15.48	15.49	30.11	23.41	23.72	24.49	18.31	18.31	22.45	16.26	16.26
Movement LOS	C	B	B	C	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]		18.57			23.81			22.01			18.29	
Approach LOS		B			C			C			B	
d_I, Intersection Delay [s/veh]					21.45							
Intersection LOS					C							
Intersection V/C					0.564							

Other Modes

g_Walk,mt, Effective Walk Time [s]	11.0		11.0								11.0	
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]	22.06		22.06		22.06						22.06	
I_p,Int, Pedestrian LOS Score for Intersection	2.884		3.355		2.246						2.052	
Crosswalk LOS	C		C		B						B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000						2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1573		1573		1302						1302	
d_b, Bicycle Delay [s]	1.47		1.47		3.92						3.92	
I_b,Int, Bicycle LOS Score for Intersection	2.221		2.352		2.342						1.741	
Bicycle LOS	B		B		B						A	

Sequence

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



Intersection Level Of Service Report

Intersection 4: Old Hwy 53/S Market St

Control Type: Roundabout
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 7.8
Level Of Service: A

Intersection Setup

Name	Old Hwy 53	Old Hwy 53	Old Hwy 53	S Market St
Approach	Northbound	Southbound	Westbound	
Lane Configuration	Thru	Left	Thru	Left
Turning Movement	12.00	12.00	12.00	12.00
Lane Width [ft]	0	0	0	0
No. of Lanes in Entry Pocket	100.00	100.00	100.00	100.00
Entry Pocket Length [ft]	0	0	0	0
No. of Lanes in Exit Pocket	0.00	0.00	0.00	0.00
Exit Pocket Length [ft]	35.00	35.00	35.00	30.00
Speed [mph]	0.00	0.00	0.00	0.00
Grade [%]	Yes	Yes	Yes	Yes
Crosswalk				

Volumes

Name	Old Hwy 53	Old Hwy 53	Old Hwy 53	S Market St
Base Volume Input [veh/h]	199	0	240	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0
Site-Generated Trips [veh/h]	150	279	131	278
Diverted Trips [veh/h]	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0
Other Volume [veh/h]	0	0	0	0
Total Hourly Volume [veh/h]	349	279	371	278
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	71	86	71
Total Analysis Volume [veh/h]	356	285	379	284
Pedestrian Volume [ped/h]	0	0	0	0

Intersection Settings

Number of Conflicting Circulating Lanes	1	1	1	1
Circulating Flow Rate [veh/h]	33	290	394	363
Existing Flow Rate [veh/h]	676			323
Demand Flow Rate [veh/h]	349	279	371	278
Adjusted Demand Flow Rate [veh/h]	356	285	379	284
		32		30

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00		4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00		3.00
A (intercept)	1380.00	1380.00		1380.00
B (coefficient)	0.00102	0.00102		0.00102
HV Adjustment Factor	0.98	0.98		0.98
Entry Flow Rate [veh/h]	654	420		321
Capacity of Entry and Bypass Lanes [veh/h]	1335	1027		953
Pedestrian Impedance	1.00	1.00		1.00
Capacity per Entry Lane [veh/h]	1309	1007		935
X, volume / capacity	0.49	0.41		0.34

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	2.79	2.01		1.49
95th-Percentile Queue Length [ft]	69.68	50.37		37.26
Approach Delay [s/veh]	7.81	8.06		7.47
Approach LOS	A	A		A
Intersection Delay [s/veh]		7.81		
Intersection LOS		A		

Intersection Level Of Service Report

Intersection 4: Old Hwy 53/S Market St

Control Type:	Signalized	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name	Old Hwy 53	Old Hwy 53	S Market St
Approach	Northbound	Southbound	Westbound
Lane Configuration			
Turning Movement	Thru	Right	Left
Lane Width [ft]	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00
Speed [mph]	35.00	35.00	30.00
Grade [%]	0.00	0.00	0.00
Curb Present	No	No	No
Crosswalk	Yes	Yes	Yes

Volumes

Name	Old Hwy 53		Old Hwy 53		S Market St	
Base Volume Input [veh/h]	199	0	0	240	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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]	150	279	31	131	278	29
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	349	279	31	371	278	29
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	71	8	95	71	7
Total Analysis Volume [veh/h]	356	285	32	379	284	30
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing major street	0	0	0	0	0	0
v_di, Inbound Pedestrian Volume crossing major street [	0	0	0	0	0	0
v_co, Outbound Pedestrian Volume crossing minor street	0	0	0	0	0	0
v_ci, Inbound Pedestrian Volume crossing minor street [	0	0	0	0	0	0
v_ab, Corner Pedestrian Volume [ped/h]	0	0	0	0	0	0
Bicycle Volume [bicycles/h]	0	0	0	0	0	0

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
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	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7
Auxiliary Signal Groups	-	-	-	-	Lead
Lead / Lag	-	-	-	-	Lead
Minimum Green [s]	10	0	0	10	5
Maximum Green [s]	31	0	0	31	31
Amber [s]	3.0	0.0	0.0	3.0	3.0
All red [s]	1.0	0.0	0.0	1.0	1.0
Split [s]	35	0	0	35	35
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0
Walk [s]	5	0	0	5	5
Pedestrian Clearances [s]	10	0	0	10	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0
Rest in Walk	No	No	No	No	No
11, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0
12, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0
Minimum Recall	No	No	No	No	No
Maximum Recall	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	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	L	R
C, Cycle Length [s]	33	33	33	33	33
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_l, Effective Green Time [s]	17	17	17	8	8
g / C, Green / Cycle	0.52	0.52	0.52	0.24	0.24
(v / s)_l Volume / Saturation Flow Rate	0.41	0.05	0.23	0.18	0.02
s, saturation flow rate [veh/h]	1561	709	1683	1603	1431
c, Capacity [veh/h]	810	307	874	380	339
d1, Uniform Delay [s]	6.44	13.22	4.90	11.62	9.77
k, delay calibration	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.78	0.15	0.34	2.94	0.11
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	0.79	0.10	0.43	0.75	0.09
d, Delay for Lane Group [s/veh]	8.23	13.37	5.24	14.56	9.88
Lane Group LOS	A	B	A	B	A
Critical Lane Group	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/in]	1.77	0.18	0.70	1.71	0.13
50th-Percentile Queue Length [ft/in]	44.28	4.40	17.46	42.75	3.37
95th-Percentile Queue Length [veh/in]	3.19	0.32	1.26	3.08	0.24
95th-Percentile Queue Length [ft/in]	79.70	7.91	31.44	76.96	6.06

Movement, Approach, & Intersection Results

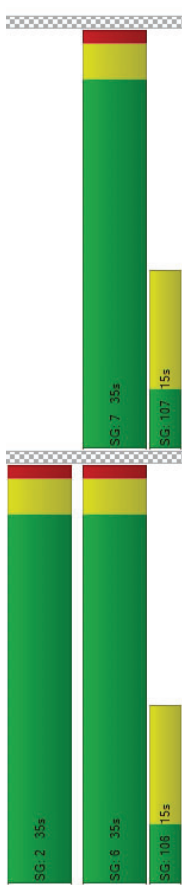
d_M, Delay for Movement [s/veh]	8.23	8.23	13.37	5.24	14.56	9.88
Movement LOS	A	A	B	A	B	A
d_A, Approach Delay [s/veh]	8.23	8.23	5.87		14.11	
Approach LOS	A	A	A		B	
d_I, Intersection Delay [s/veh]			8.87			
Intersection LOS			A			
Intersection V/C			0.588			

Other Modes

g, Walk, mt, Effective Walk Time [s]	9.0	9.0			9.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00	0.00	0.00
M_OW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	8.60	8.60	8.60		8.60	
l_p.int, Pedestrian LOS Score for Intersection	2.400	2.186			2.134	
Crosswalk LOS	B	B			B	
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1895	1895	1895		1895	
d_b, Bicycle Delay [s]	0.04	0.04	0.04		0.04	
l_b.int, Bicycle LOS Score for Intersection	2.617	2.238			1.560	
Bicycle LOS	B	B			A	

Sequence

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



Version 2022 (SP 0-11)

Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Control Type: Signalized

Analysis Method: HCM 6th Edition

Analysis Period: 15 minutes

Delay (sec / veh): 26.5

C

Volume to Capacity (v/c): 0.557

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3L			3L			3L			3L		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Version 2022 (SP 0-11)

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	88	366	147	175	415	28	16	113	118	137	91	199
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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]	276	31	0	12	14	123	119	25	265	0	30	14
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	32	0	0	8	0	0	76	0	0	80
Total Hourly Volume [veh/h]	364	397	115	187	429	143	135	138	307	137	121	133
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	101	29	48	109	36	34	35	78	35	31	34
Total Analysis Volume [veh/h]	371	405	117	191	438	146	138	141	313	140	123	136
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	1			2			0			0		
v_di, Inbound Pedestrian Volume crossing	0			0			1			2		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	180
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	1	7	4	5		
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	4.5		
Minimum Green [s]	5	10	0	5	10	0	5	10	5	5	10	5		
Maximum Green [s]	63	51	0	51	39	0	19	44	63	11	37	51		
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	4.1	3.2	3.2	4.1	3.2		
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	2.0	2.0	1.5	2.0		
Split [s]	68	58	0	56	46	0	23	50	68	16	43	56		
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0		
Wak [s]	0	7	0	0	7	0	0	7	0	0	7	0		
Pedestrian Clearance [s]	0	26	0	0	25	0	0	28	0	0	28	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	No	No	No	No	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	2.0	2.0	2.0	2.0		
I2, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	3.6	3.2	3.2	3.6	3.2		
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No		
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No		
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	L	R	C	R
C, Cycle Length [s]	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
L, Total Lost Time per Cycle [s]	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.20	6.50	5.20	6.50
I1, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	4.50	3.20	4.50
g, I, Effective Green Time [s]	18	26	26	7	15	15	7	13	13	37	5	10	24		
g / C, Green / Cycle	0.25	0.35	0.35	0.10	0.20	0.20	0.10	0.18	0.18	0.50	0.07	0.14	0.32		
(v / s), Volume / Saturation Flow Rate	0.21	0.15	0.15	0.06	0.16	0.16	0.08	0.08	0.20	0.04	0.07	0.09	0.09		
s, saturation flow rate [veh/h]	1781	1870	1728	3459	1870	1689	1781	1870	1589	3459	1870	1589	1658		
c, Capacity [veh/h]	445	659	609	351	382	345	178	330	798	225	265	506	506		
d1, Uniform Delay [s]	26.27	18.12	18.12	31.59	27.97	28.06	32.47	27.12	11.41	33.67	29.15	18.75	18.75		
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11		
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
d2, Incremental Delay [s]	4.14	0.41	0.45	1.31	3.85	4.59	7.08	0.88	0.31	2.78	1.26	0.28	0.28		
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		

Lane Group Results

X, volume / capacity	0.83	0.41	0.41	0.54	0.80	0.81	0.78	0.43	0.39	0.82	0.46	0.27			
d, Delay for Lane Group [s/veh]	30.41	18.53	18.57	32.90	31.81	32.65	39.55	28.00	11.72	36.45	30.41	19.03			
Lane Group LOS	C	B	B	C	C	C	D	C	B	D	C	B			
Critical Lane Group	Yes	No	No	No	No	No	No	No	Yes	Yes	No	No			
50th-Percentile Queue Length [veh/ln]	5.84	3.01	2.79	1.52	4.88	4.56	2.65	2.18	2.84	1.26	2.00	1.65			
50th-Percentile Queue Length [ft/ln]	145.91	75.33	69.78	38.00	121.98	114.06	66.14	54.52	70.90	31.46	49.99	41.33			
95th-Percentile Queue Length [veh/ln]	9.80	5.42	5.02	2.74	8.50	8.07	4.76	3.93	5.10	2.27	3.60	2.98			
95th-Percentile Queue Length [ft/ln]	244.97	135.59	125.61	68.40	212.55	201.63	119.05	98.13	127.62	56.64	88.99	74.39			

Movement, Approach, & Intersection Results

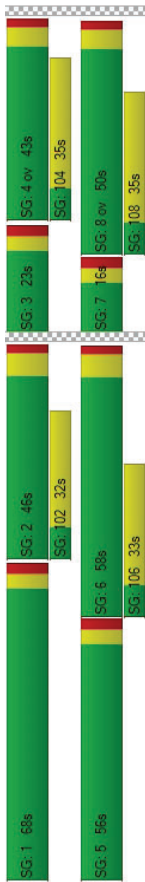
d_M, Delay for Movement [s/veh]	30.41	18.55	18.57	32.90	32.07	32.85	39.55	28.00	11.72	36.45	30.41	19.03
Movement LOS	C	B	B	C	C	C	D	C	B	D	C	B
d_A, Approach Delay [s/veh]		23.48				32.38		22.09			28.65	
Approach LOS		C			C			C			C	
d_I, Intersection Delay [s/veh]							26.54					
Intersection LOS							C					
Intersection V/C							0.557					

Other Modes

g_Walk,mt, Effective Walk Time [s]	11.0		11.0									11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00					0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00					0.00
d_p, Pedestrian Delay [s]	26.72		26.72		26.72		26.72		26.02		26.72	
I_p,Int, Pedestrian LOS Score for Intersection	3.011		2.913		C		B		B		2.738	
Crosswalk LOS											B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1386		1070		1070		1203		1203		1013	
d_b, Bicycle Delay [s]	3.37		7.98		7.98		5.86		5.86		8.98	
I_b,Int, Bicycle LOS Score for Intersection	2.323		2.206		B		B		B		2.350	
Bicycle LOS											B	

Sequence

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



Intersection Level Of Service Report

Control Type:	Two-way stop	Delay (sec / veh):	15.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name	Old Hwy 53	Old Hwy 53	18th Ave Extension
Approach	Northbound	Southbound	Westbound
Lane Configuration			
Turning Movement	Thru	Right	Thru
Lane Width [ft]	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00
Speed [mph]	35.00	35.00	30.00
Grade [%]	0.00	0.00	0.00
Crosswalk	Yes	Yes	Yes

Volumes

Name	Old Hwy 53	Old Hwy 53	18th Ave Extension
Base Volume Input [veh/h]	254	39	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0
Site-Generated Trips [veh/h]	0	0	0
Diverted Trips [veh/h]	0	0	0
Pass-by Trips [veh/h]	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0
Other Volume [veh/h]	0	0	0
Total Hourly Volume [veh/h]	254	39	4
Peak Hour Factor	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	11	86
Total Analysis Volume [veh/h]	289	44	392
Pedestrian Volume [ped/h]	0	0	0

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C Movement V/C Ratio	0.00	0.00	0.03	0.00	0.01	0.04
d_M Delay for Movement [s/veh]	0.00	0.00	7.93	0.00	15.45	10.14
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.11	0.00	0.18	0.18
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.69	0.00	4.61	4.61
d_A Approach Delay [s/veh]	0.00		0.80			10.84
Approach LOS	A	A	A		B	
d_I Intersection Delay [s/veh]			0.99			
Intersection LOS			C			

Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 20.4
Level Of Service: C
Volume to Capacity (v/c): 0.686

Intersection Setup

Name	SR 53			SR 53			18th Ave		
Approach	Northbound			Southbound			Eastbound		
Lane Configuration	T T T			T T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	675.00	100.00	100.00	720.00	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
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00		
Grade [%]	0.00			0.00			0.00		
Curb Present	No			No			No		
Crosswalk	Yes			Yes			Yes		

Volumes

Name	SR 53		SR 53		SR 53		18th Ave		18th Ave	
Base Volume Input [veh/h]	183	882	86	98	1025	200	168	31	174	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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
In-Process Volume [veh/h]	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
Diverged Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	8	0	0	0	0	0	2	0
Total Hourly Volume [veh/h]	183	882	78	98	1025	200	168	31	172	77
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	248	22	28	288	56	47	9	48	22
Total Analysis Volume [veh/h]	206	991	88	110	1152	225	189	35	193	87
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0
v_d0, Outbound Pedestrian Volume crossing	0									
v_d1, Inbound Pedestrian Volume crossing	0									
v_c0, Outbound Pedestrian Volume crossing	0									
v_c1, Inbound Pedestrian Volume crossing	0									
v_ab, Corner Pedestrian Volume [ped/h]	0									
Bicycle Volume [bicydes/h]	1									

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	145
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	8
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-	-	-
Minimum Green [s]	7	8	0	7	8	0	7	7	0	7
Maximum Green [s]	21	50	0	21	50	0	21	31	0	31
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	3.2	0.0	3.2
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	2.0	0.0	2.0
Split [s]	26	57	0	26	57	0	26	36	0	36
Vehicle Extension [s]	1.5	3.4	0.0	1.5	3.4	0.0	3.0	1.5	0.0	1.5
Walk [s]	0	7	0	0	7	0	0	7	0	7
Pedestrian Clearance [s]	0	26	0	0	17	0	0	23	0	23
Delayed Vehicle Green [s]	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	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	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

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	L	C
C, Cycle Length [s]	76	76	76	76	76	76	76	76	76	76	76	76
L, Total Lost Time per Cycle [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I1, p. Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g, I, Effective Green Time [s]	13	38	38	12	36	36	13	15	11	13		
g / C, Green / Cycle	0.18	0.50	0.50	0.15	0.48	0.48	0.17	0.20	0.15	0.18		
(v / s), J Volume / Saturation Flow Rate	0.12	0.29	0.29	0.06	0.38	0.38	0.11	0.14	0.05	0.05		
s, saturation flow rate [veh/h]	1781	1870	1810	1781	1870	1766	1781	1827	1781	1732		
c, Capacity [veh/h]	314	940	909	270	893	843	303	326	260	305		
d1, Uniform Delay [s]	29.20	13.31	13.35	29.21	16.64	16.80	29.34	28.31	29.20	27.08		
k, delay calibration	0.04	0.13	0.13	0.04	0.16	0.17	0.11	0.04	0.11	0.04		
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]	0.87	0.67	0.70	0.37	2.38	2.80	2.11	1.02	0.75	0.17		
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
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	0.66	0.58	0.59	0.41	0.79	0.80	0.62	0.70	0.34	0.26		
d, Delay for Lane Group [s/veh]	30.07	13.98	14.05	29.58	19.02	19.60	31.45	29.34	29.95	27.25		
Lane Group LOS	C	B	B	C	B	B	C	C	C	C		
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	Yes	No		
50th-Percentile Queue Length [veh/m]	3.19	5.18	5.07	1.66	8.48	8.30	3.27	3.81	1.44	1.23		
50th-Percentile Queue Length [ft/m]	79.76	129.59	126.82	41.40	212.03	207.50	81.83	95.13	35.99	30.77		
95th-Percentile Queue Length [veh/m]	5.74	8.92	8.77	2.98	13.26	13.02	5.89	6.85	2.59	2.22		
95th-Percentile Queue Length [ft/m]	143.56	222.83	219.16	74.53	331.44	325.62	147.30	171.23	64.79	55.39		

Movement, Approach, & Intersection Results

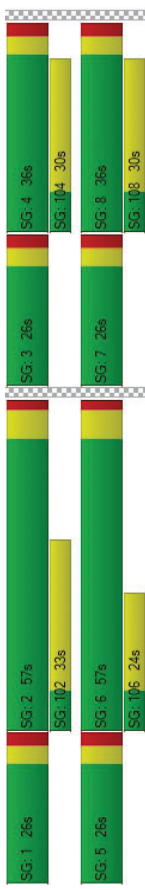
d, M, Delay for Movement [s/veh]	30.07	14.01	14.05	29.58	19.24	19.60	31.45	29.34	29.34	29.95	27.25	27.25
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d, A, Approach Delay [s/veh]	16.59				20.06			30.30			28.66	
Approach LOS	B				C			C			C	
d, I, Intersection Delay [s/veh]							20.43					
Intersection LOS							C					
Intersection VC							0.686					

Other Modes

g, Walkmt, Effective Walk Time [s]	11.0				11.0			11.0			11.0	
M, corner, Corner Circulation Area [ft ² /ped]	0.00				0.00			0.00			0.00	
M, CW, Crosswalk Circulation Area [ft ² /ped]	0.00				0.00			0.00			0.00	
d, p, Pedestrian Delay [s]	27.80				27.80			27.80			27.80	
I, p, int, Pedestrian LOS Score for Intersection	3.277				3.276			2.224			2.158	
Crosswalk LOS	C				C			B			B	
s, b, Saturation Flow Rate of the bicycle lane	2000				2000			2000			2000	
c, b, Capacity of the bicycle lane [bicycles/h]	1329				1329			810			810	
d, b, Bicycle Delay [s]	4.28				4.28			13.44			13.44	
I, b, int, Bicycle LOS Score for Intersection	2.626				2.786			2.251			1.924	
Bicycle LOS	B				C			B			A	

Sequence

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



Intersection Level Of Service Report

Intersection 3: Old Hwy 53/Airport Rd

Control Type: Two-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 15.4
Level Of Service: C
Volume to Capacity (v/c): 0.079

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		Airport Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	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]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Old Hwy 53		Old Hwy 53		Airport Rd	
Base Volume Input [veh/h]	244	60	27	318	26	13
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]	244	60	27	318	26	13
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	17	8	90	7	4
Total Analysis Volume [veh/h]	277	68	31	361	30	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.08	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.04	0.00	15.43	10.83
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.00	0.33	0.33
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.96	0.00	8.29	8.29
d_A, Approach Delay [s/veh]	0.00		0.64	13.89		
Approach LOS	A		A	B		
d_I, Intersection Delay [s/veh]			1.12			
Intersection LOS			C			

Intersection Level Of Service Report

Intersection 4: Old Hwy 53 S Market St

Control Type: Two-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 44.9
Level Of Service: E
Volume to Capacity (v/c): 0.760

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		S Market St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	50.00
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]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Old Hwy 53			S Market St		
Base Volume Input [veh/h]	284	218	22	322	212	20
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]	284	218	22	322	212	20
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	81	62	6	91	60	6
Total Analysis Volume [veh/h]	323	248	25	366	241	23
Pedestrian Volume [ped/h]	0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.76	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.69	0.00	44.87	11.12
Movement LOS	A	A	A	A	E	B
95th-Percentile Queue Length [veh/vln]	0.00	0.00	0.08	0.00	5.88	0.12
95th-Percentile Queue Length [ft/vln]	0.00	0.00	1.92	0.00	146.98	2.93
d_A, Approach Delay [s/veh]	0.00		0.56		41.93	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	9.21					
Intersection LOS	E					

Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 44.6
Level Of Service: D
Volume to Capacity (v/c): 0.708

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3L			3R			3R			3R		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	268	614	277	402	715	135	123	175	315	282	147	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
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	14	0	0	10	0	0	83	0	0	40
Total Hourly Volume [veh/h]	268	614	263	402	715	125	123	175	232	282	147	311
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	176	76	116	205	36	35	50	67	81	42	89
Total Analysis Volume [veh/h]	308	706	302	462	822	144	141	201	267	324	169	357
Presence of On-Street Parking	No	No	No	No	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_db, Outbound Pedestrian Volume crossing	0			0			3			0		
v_di, Inbound Pedestrian Volume crossing	3			0			0			0		
v_co, Outbound Pedestrian Volume crossing	1			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			2			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	0	7	4	5	
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-	4.5
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	5	5
Maximum Green [s]	28	53	0	16	41	0	9	37	0	11	39	16	16
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	4.1	0.0	3.2	4.1	3.2	3.2
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	2.0	2.0
Split [s]	33	60	0	21	48	0	14	43	0	16	45	21	21
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0	0
Pedestrian Clearance [s]	0	26	0	0	25	0	0	28	0	0	28	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	0.0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	3.6	0.0	3.2	3.6	3.2	3.2
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No	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	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	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	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	106	106	106	106	106	106	106	106	106	106	106	106	106	106
L, Total Lost Time per Cycle [s]	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.20	6.50	5.60	5.20	6.50	5.20
I1, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	4.50	3.60	3.20	4.50	3.60
g, I, Effective Green Time [s]	20	36	36	16	31	31	9	21	21	21	21	11	23	45
g / C, Green / Cycle	0.19	0.34	0.34	0.15	0.29	0.29	0.08	0.20	0.20	0.20	0.10	0.22	0.42	0.42
(v / s), Volume / Saturation Flow Rate	0.17	0.28	0.29	0.13	0.26	0.27	0.08	0.11	0.17	0.09	0.09	0.09	0.23	0.23
s, saturation flow rate [veh/h]	1781	1870	1662	3459	1870	1775	1781	1870	1560	3459	1870	1578	1578	1578
c, Capacity [veh/h]	343	631	568	519	552	524	150	370	309	357	405	681	681	681
d1, Uniform Delay [s]	42.00	32.57	32.74	44.42	35.96	36.10	48.51	38.40	41.20	47.28	35.94	23.16	23.16	23.16
k, delay calibration	0.18	0.13	0.13	0.11	0.20	0.21	0.26	0.11	0.11	0.11	0.11	0.11	0.11	0.16
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.91	3.48	4.31	5.45	9.17	10.62	38.90	1.24	7.20	8.83	0.68	1.02	1.02	1.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.84	0.85	0.89	0.89	0.89	0.94	0.54	0.86	0.91	0.42	0.54	0.54	0.54
d, Delay for Lane Group [s/veh]	54.91	36.05	37.05	49.87	45.13	46.72	87.40	39.64	48.39	56.11	36.62	24.18	24.18	24.18
Lane Group LOS	D	D	D	D	D	D	F	D	D	E	D	C	C	C
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No	No	No	Yes	Yes	Yes
50th-Percentile Queue Length [veh/ln]	8.62	12.05	11.16	6.02	12.67	12.40	5.29	4.77	7.23	4.62	3.80	6.66	6.66	6.66
50th-Percentile Queue Length [ft/ln]	215.60	301.29	279.10	150.46	316.72	309.92	132.33	119.20	180.75	115.51	95.06	166.39	166.39	166.39
95th-Percentile Queue Length [veh/ln]	13.44	17.75	16.64	10.04	18.51	18.17	9.07	8.35	11.64	8.15	6.84	10.89	10.89	10.89
95th-Percentile Queue Length [ft/ln]	336.00	443.63	416.09	251.05	462.65	454.28	226.66	208.73	290.99	203.63	171.10	272.16	272.16	272.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.91	36.30	37.05	49.87	45.77	46.72	87.40	39.64	48.39	56.11	36.62	24.18
Movement LOS	D	D	D	D	D	D	F	D	D	E	D	C
d_A, Approach Delay [s/veh]	40.83			47.19			54.54				38.82	
Approach LOS	D			D			D				D	
d_I, Intersection Delay [s/veh]						44.57						
Intersection LOS						D						
Intersection V/C						0.708						

Other Modes

g_Walk,mt, Effective Walk Time [s]	11.0		11.0			11.0						11.0
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]	42.79		42.79			42.79						42.79
I_p,Int, Pedestrian LOS Score for Intersection	3.338		3.274			2.633						2.872
Crosswalk LOS	C		C			B						C
s_b, Saturation Flow Rate of the bicycle lane	2000		2000			2000						2000
c_b, Capacity of the bicycle lane [bicycles/h]	1005		780			703						740
d_b, Bicycle Delay [s]	13.16		19.81			22.41						21.12
I_b,Int, Bicycle LOS Score for Intersection	2.657		2.746			2.701						3.028
Bicycle LOS	B		B			B						C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-
SG 1 33s					SG 2 48s		SG 3 14s		SG 4 45s			
					SG 12 32s		SG 14 35s					
SG 5 21s					SG 6 60s		SG 7 16s		SG 8 43s			
					SG 10 33s		SG 18 35s					

Intersection Level Of Service Report

Intersection 6: Market St/Airport Rd-Festival Ln

Control Type: All-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 7.5
Level Of Service: A
Volume to Capacity (v/c): 0.079

Intersection Setup

Name	S Market St				N Market St				Airport Rd				Festival Ln			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	T				T				T				T			
Turning Movement	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00		12.00	12.00	12.00		12.00	12.00	12.00		12.00	12.00	12.00	
No. of Lanes in Entry Pocket	1	0	0		1	0	0		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				30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	S Market St				N Market St				Airport Rd				Festival Ln			
Base Volume Input [veh/h]	4	18	2		14	24	34		11	31	6		1	19	9	
Base Volume Adjustment Factor	1.0000	1.0000	1.0000		1.0000	1.0000	1.0000		1.0000	1.0000	1.0000		1.0000	1.0000	1.0000	
Heavy Vehicles Percentage [%]	2.00	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]	4	18	2		14	24	34		11	31	6		1	19	9	
Peak Hour Factor	0.8800	0.8800	0.8800		0.8800	0.8800	0.8800		0.8800	0.8800	0.8800		0.8800	0.8800	0.8800	
Other Adjustment Factor	1.0000	1.0000	1.0000		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	5	1		4	7	10		3	9	2		0	5	3	
Total Analysis Volume [veh/h]	5	20	2		16	27	39		13	35	7		1	22	10	
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes						
Capacity per Entry Lane [veh/h]	681	762	686	830	860	887
Degree of Utilization, x	0.01	0.03	0.02	0.08	0.06	0.04
Movement, Approach, & Intersection Results						
95th-Percentile Queue Length [veh]	0.02	0.09	0.07	0.26	0.20	0.12
95th-Percentile Queue Length [ft]	0.55	2.23	1.79	6.46	5.11	2.90
Approach Delay [s/veh]	7.65		7.54		7.47	7.22
Approach LOS	A		A		A	A
Intersection Delay [s/veh]	7.48					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 4: Old Hwy 53/S Market St

Control Type: Roundabout

Analysis Method: HCM 6th Edition

Analysis Period: 15 minutes

Delay (sec / veh): 7.0

Level Of Service: A

Intersection Setup

Name	Old Hwy 53			Old Hwy 53			S Market St		
Approach	Northbound			Southbound			Westbound		
Lane Configuration	T			T			T		
Turning Movement	Thru	Right	Left	Thru	Left	Right	Left	Right	Right
Lane Width [ft]	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
Entry Pocket Length [ft]	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
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes		

Volumes

Name	Old Hwy 53			Old Hwy 53			S Market St		
Base Volume Input [veh/h]	284	218	22	322	212	20			
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	284	218	22	322	212	20			
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	81	62	6	91	60	6			
Total Analysis Volume [veh/h]	323	248	25	366	241	23			
Pedestrian Volume [ped/h]	0	0	0	0	0	0			

Intersection Settings

Number of Conflicting Circulating Lanes		1		1		1	
Circulating Flow Rate [veh/h]		26		246		329	
Exiting Flow Rate [veh/h]		619		353		278	
Demand Flow Rate [veh/h]		284		218		322	
Adjusted Demand Flow Rate [veh/h]		323		248		366	
				22		212	
				25		241	
						20	
						23	

Lanes		No		No		No	
Override Calculated Critical Headway		4.00		4.00		4.00	
User-Defined Critical Headway [s]		No		No		No	
Override Calculated Follow-Up Time		3.00		3.00		3.00	
User-Defined Follow-Up Time [s]		A (intercept)		1380.00		1380.00	
		B (coefficient)		0.00102		0.00102	
HV Adjustment Factor		0.98		0.98		0.98	
Entry Flow Rate [veh/h]		583		399		270	
Capacity of Entry and Bypass Lanes [veh/h]		1345		1074		987	
Pedestrian Impedance		1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]		1319		1053		967	
X, volume / capacity		0.43		0.37		0.27	

Movement, Approach, & Intersection Results

Lane LOS		A		A		A	
95th-Percentile Queue Length [veh]		2.24		1.74		1.11	
95th-Percentile Queue Length [ft]		55.97		43.39		27.82	
Approach Delay [s/veh]		6.97		7.28		6.48	
Approach LOS		A		A		A	
Intersection Delay [s/veh]				6.96			
Intersection LOS				A			

Intersection Level Of Service Report

Intersection 4: Old Hwy 53/S Market St

Control Type:	Signalized	Delay (sec / veh):	7.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.516

Intersection Setup		Old Hwy 53		Old Hwy 53		S Market St	
Name		Northbound		Southbound		Westbound	
Approach		T		T		T	
Lane Configuration							
Turning Movement		Thru		Left		Left	
		12.00		12.00		12.00	
Lane Width [ft]		0		1		0	
No. of Lanes in Entry Pocket		100.00		100.00		100.00	
Entry Pocket Length [ft]		0		0		0	
No. of Lanes in Exit Pocket		0		0		0	
Exit Pocket Length [ft]		0.00		0.00		0.00	
Speed [mph]		35.00		35.00		30.00	
Grade [%]		0.00		0.00		0.00	
Curb Present		No		No		No	
Crosswalk		Yes		Yes		Yes	

Volumes

Name	Old Hwy 53		Old Hwy 53		S Market St	
Base Volume Input [veh/h]	284	218	22	322	212	20
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	284	218	22	322	212	20
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	81	62	6	91	60	6
Total Analysis Volume [veh/h]	323	248	25	366	241	23
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing major street	0	0	0	0	0	0
v_di, Inbound Pedestrian Volume crossing major street [	0	0	0	0	0	0
v_co, Outbound Pedestrian Volume crossing minor street	0	0	0	0	0	0
v_ci, Inbound Pedestrian Volume crossing minor street [	0	0	0	0	0	0
v_ab, Corner Pedestrian Volume [ped/h]	0	0	0	0	0	0
Bicycle Volume [bicycles/h]	0	0	0	0	0	0

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
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	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7
Auxiliary Signal Groups	-	-	-	-	Lead
Lead / Lag	10	0	0	10	5
Minimum Green [s]	31	0	0	31	31
Maximum Green [s]	3.0	0.0	0.0	3.0	3.0
Amber [s]	1.0	0.0	0.0	1.0	1.0
All red [s]	35	0	0	35	35
Split [s]	3.0	0.0	0.0	3.0	3.0
Vehicle Extension [s]	5	0	0	5	5
Walk [s]	10	0	0	10	10
Pedestrian Clearances [s]	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	No	No	No	No	No
Rest in Walk	2.0	0.0	0.0	2.0	2.0
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0
Minimum Recall	No	No	No	No	No
Maximum Recall	No	No	No	No	No
Pedestrian Recall	0.0	0.0	0.0	0.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	1.00	1.00	1.00	1.00	1.00
I, Upstream Filtering Factor	1.00	1.00	1.00	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	L	R
C, Cycle Length [s]	26	26	26	26	26
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_l, Effective Green Time [s]	13	13	13	5	5
g / C, Green / Cycle	0.49	0.49	0.49	0.21	0.21
(v / s)_l Volume / Saturation Flow Rate	0.37	0.03	0.22	0.15	0.02
s, saturation flow rate [veh/h]	1563	757	1683	1603	1431
c, Capacity [veh/h]	760	362	818	337	301
d1, Uniform Delay [s]	5.48	10.63	4.45	9.67	8.35
k, delay calibration	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.53	0.08	0.38	2.83	0.11
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	0.75	0.07	0.45	0.72	0.08
d, Delay for Lane Group [s/veh]	7.01	10.71	4.83	12.50	8.46
Lane Group LOS	A	B	A	B	A
Critical Lane Group	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/in]	0.89	0.09	0.38	1.08	0.08
50th-Percentile Queue Length [ft/in]	22.16	2.35	9.52	27.03	1.90
95th-Percentile Queue Length [veh/in]	1.60	0.17	0.69	1.95	0.14
95th-Percentile Queue Length [ft/in]	39.89	4.24	17.13	48.65	3.43

Movement, Approach, & Intersection Results

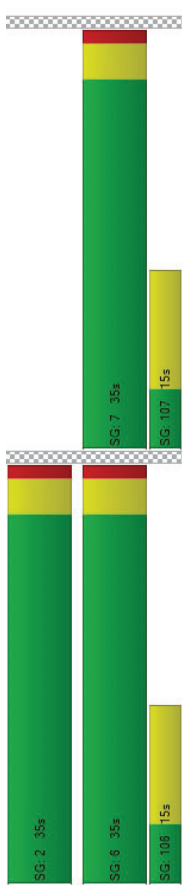
d_M, Delay for Movement [s/veh]	7.01	7.01	10.71	4.83	12.50	8.46
Movement LOS	A	A	B	A	B	A
d_A, Approach Delay [s/veh]	7.01	7.01	5.21	A	12.15	
Approach LOS	A	A	A		B	
d_I, Intersection Delay [s/veh]			7.54			
Intersection LOS			A			
Intersection V/C			0.516			

Other Modes

g, Walk, mt, Effective Walk Time [s]	9.0		9.0		9.0	
M_corner, Corner Circulation Area [ft²/peed]	0.00		0.00		0.00	
M_OW, Crosswalk Circulation Area [ft²/peed]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	5.64		5.64		5.64	
l_p.int, Pedestrian LOS Score for Intersection	2.312		2.146		2.077	
Crosswalk LOS	B		B		B	
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	2367		2367		2367	
d_b, Bicycle Delay [s]	0.44		0.44		0.44	
l_b.int, Bicycle LOS Score for Intersection	2.502		2.205		1.560	
Bicycle LOS	B		B		A	

Sequence

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



Intersection Level Of Service Report
Intersection 5: SR 53/Dam Rd

Control Type: Signalized
HCM 8th Edition
Analysis Method: 15 minutes
Analysis Period:
Delay (sec / veh): 36.5
Level Of Service: D
Volume to Capacity (v/c): 0.703

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTL			TTL			TTL			TTL		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	288	614	277	402	715	135	123	175	315	282	147	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
Passby Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	14	0	0	10	0	0	83	0	0	40
Total Hourly Volume [veh/h]	268	614	263	402	715	125	123	175	232	282	147	311
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	176	76	116	205	36	35	50	67	81	42	89
Total Analysis Volume [veh/h]	308	706	302	462	822	144	141	201	267	324	169	357
Presence of On-Street Parking	No	No	No	No	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			3			0		
v_di, Inbound Pedestrian Volume crossing	3			0			0			0		
v_oo, Outbound Pedestrian Volume crossing	1			0			0			0		
v_di, Inbound Pedestrian Volume crossing [pi]	0			0			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			2			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permiss	Permiss	Protect	Permiss	Protect	Permiss	Overlap	Protect	Permiss	Overlap	
Signal Group	1	6	0	5	2	0	3	8	1	7	4	5
Auxiliary Signal Groups									1.8			4.5
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	5	5	10	5
Maximum Green [s]	28	53	0	16	41	0	9	37	28	11	39	16
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	4.1	3.2	3.2	4.1	3.2
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	2.0	2.0	1.5	2.0
Split [s]	33	60	0	21	48	0	14	43	33	16	45	21
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	25	0	0	28	0	0	28	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	No	No	No	No	No	No	No	No
11. Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
12. Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	3.6	3.2	3.2	3.6	3.2
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1. Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94
L, Total Lost Time per Cycle [s]	5.20	6.50	5.20	6.50	5.20	6.50	5.20	6.50	5.20	6.50	5.20	6.50	5.20	6.50	5.20
11_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12, Clearance Lost Time [s]	3.20	4.50	3.20	4.50	3.20	4.50	3.20	4.50	3.20	4.50	3.20	4.50	3.20	4.50	3.20
g, I, Effective Green Time [s]	19	31	31	16	28	28	9	14	38	11	15	37			
g / C, Green / Cycle	0.20	0.33	0.33	0.17	0.30	0.30	0.10	0.15	0.41	0.11	0.16	0.38			
(v / s), j Volume / Saturation Flow Rate	0.17	0.28	0.29	0.13	0.26	0.27	0.08	0.11	0.17	0.09	0.09	0.23			
s, saturation flow rate [veh/h]	1781	1870	1882	3459	1870	1775	1781	1870	1578	3459	1870	1579			
c, Capacity [veh/h]	359	620	558	587	561	532	170	274	642	393	308	621			
d1, Uniform Delay [s]	36.35	29.32	29.48	37.51	31.37	31.50	41.88	38.50	19.92	40.86	36.18	22.36			
k, delay calibration	0.13	0.11	0.11	0.11	0.14	0.15	0.20	0.11	0.12	0.11	0.11	0.11			
1, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
d2, Incremental Delay [s]	6.91	3.38	4.06	2.39	6.04	7.06	16.58	3.82	0.47	4.39	1.53	0.84			
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			

Lane Group Results

X, volume / capacity	0.86	0.85	0.86	0.79	0.88	0.89	0.83	0.73	0.42	0.82	0.55	0.57			
d, Delay for Lane Group [s/veh]	43.26	32.71	33.54	39.91	37.42	38.56	59.47	42.32	20.38	45.25	37.71	23.20			
Lane Group LOS	D	C	C	D	D	D	E	D	C	D	D	C			
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes			
50th-Percentile Queue Length [veh/ln]	6.97	10.48	9.69	4.91	10.51	10.26	3.93	4.62	4.06	3.83	3.61	6.01			
50th-P-Percentile Queue Length [ft/ln]	174.22	261.89	242.33	122.76	262.67	256.52	98.20	115.45	101.52	95.68	90.34	150.35			
95th-Percentile Queue Length [veh/ln]	11.30	15.78	14.80	8.54	15.82	15.51	7.07	8.14	7.31	6.89	6.50	10.04			
95th-P-Percentile Queue Length [ft/ln]	282.46	394.58	369.98	213.61	395.57	387.85	176.77	203.56	182.74	172.22	162.61	250.90			

Movement, Approach, & Intersection Results

d, M, Delay for Movement [s/veh]	43.26	32.92	33.54	39.91	37.87	38.56	56.47	42.32	20.38	45.25	37.71	23.20
Movement LOS	D	C	C	D	D	D	E	D	C	D	D	C
d, A, Approach Delay [s/veh]		35.48			38.60		36.44			34.49		
Approach LOS		D			D		D			C		
d, I, Intersection Delay [s/veh]						36.48						
Intersection LOS						D						
Intersection V/C						0.703						

Other Modes

g, Walk, mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0	11.0	11.0
M, corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00	0.00	0.00
M, CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00	0.00	0.00
d, P, Pedestrian Delay [s]	36.72	36.72	36.72	36.72	36.72	36.72
L, P, Int, Pedestrian LOS Score for Intersection	3.332	3.268	3.268	2.627	2.627	2.866
Crosswalk LOS	C	C	C	B	B	C
s, b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000	2000	2000
c, b, Capacity of the bicycle lane [bicycles/h]	1137	882	795	795	837	837
d, b, Bicycle Delay [s]	8.77	14.72	14.72	17.12	15.93	15.93
L, b, Int, Bicycle LOS Score for Intersection	2.657	2.746	2.746	2.701	3.028	3.028
Bicycle LOS	B	B	B	B	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-
SG, 1	33s				SG, 2	48s		SG, 3	14s		SG, 4	ov 45s
					SG, 102	32s		SG, 104	35s			
SG, 5	21s				SG, 6	60s		SG, 7	16s		SG, 8	ov 43s
					SG, 106	33s		SG, 108	35s			

Intersection Level Of Service Report

Control Type:	Two-way stop	Delay (sec / veh):	14.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Old Hwy 53	Old Hwy 53	18th Ave Extension
Approach	Northbound	Southbound	Westbound
Lane Configuration	➡	➡	➡
Turning Movement	Thru	Left	Thru
Lane Width [ft]	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00
Speed [mph]	35.00	35.00	30.00
Grade [%]	0.00	0.00	0.00
Crosswalk	Yes	Yes	Yes

Volumes

Name	Old Hwy 53	Old Hwy 53	18th Ave Extension
Base Volume Input [veh/h]	329	21	289
Base Volume Adjustment Factor	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0
Site-Generated Trips [veh/h]	0	0	0
Diverted Trips [veh/h]	0	0	0
Pass-by Trips [veh/h]	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0
Other Volume [veh/h]	0	0	0
Total Hourly Volume [veh/h]	329	21	289
Peak Hour Factor	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	6	76
Total Analysis Volume [veh/h]	346	22	304
Pedestrian Volume [ped/h]	0	0	0

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C Movement V/C Ratio	0.00	0.00	0.02	0.00	0.00	0.05
d_M Delay for Movement [s/veh]	0.00	0.00	8.03		14.29	10.48
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06		0.17	0.17
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.39		4.14	4.14
d_A Approach Delay [s/veh]	0.00		0.54			10.70
Approach LOS	A		A		B	
d_I Intersection Delay [s/veh]			0.78			
Intersection LOS			B			

Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 16.0
Level Of Service: B
Volume to Capacity (v/c): 0.535

Intersection Setup

Name	SR 53			SR 53			18th Ave		
Approach	Northbound			Southbound			Eastbound		
Lane Configuration	T T T			T T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	675.00	100.00	100.00	720.00	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
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00		
Grade [%]	0.00			0.00			0.00		
Curb Present	No			No			No		
Crosswalk	Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			18th Ave			18th Ave		
Base Volume Input [veh/h]	135	898	55	80	869	161	201	26	135	58	20	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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	1	0	0	0	0	0	0	0	0	39
Total Hourly Volume [veh/h]	135	898	54	80	869	161	201	26	135	58	20	41
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	236	14	21	229	42	53	7	36	15	5	11
Total Analysis Volume [veh/h]	142	945	57	84	915	169	212	27	142	61	21	43
Presence of On-Street Parking	No	No	No	No	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			1			1		
v_di, Inbound Pedestrian Volume crossing	1			1			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Biocycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD		No													
Signal Coordination Group		-													
Cycle Length [s]		145													
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		Protects	Permiss	Protects	Permiss	Protects	Permiss	Protects	Permiss	Protects	Permiss	Protects	Permiss	Protects	Permiss
Signal Group		5	2	0	1										
Auxiliary Signal Groups		Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-
Minimum Green [s]		7	8	0	7	8	0	7	7	0	7	7	0	7	0
Maximum Green [s]		21	50	0	21	50	0	21	31	0	21	31	0	21	31
Amber [s]		3.2	5.0	0.0	3.2	5.0	0.0	3.2	3.2	0.0	3.2	3.2	0.0	3.2	3.2
All red [s]		2.0	1.5	0.0	2.0	1.5	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0
Split [s]		26	57	0	26	57	0	26	36	0	26	36	0	26	36
Vehicle Extension [s]		1.5	3.4	0.0	1.5	3.4	0.0	3.0	1.5	0.0	3.0	1.5	0.0	3.0	1.5
Walk [s]		0	7	0	0	7	0	0	7	0	0	7	0	0	7
Pedestrian Clearance [s]		0	26	0	0	17	0	0	23	0	0	23	0	0	23
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	0.0	0.0
Rest In Walk			No		No		No		No		No		No		No
11, Start-Up Lost Time [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	0.0	0.0
12, Clearance Lost Time [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	0.0	0.0
Minimum Recall		No	Yes		No	Yes		No	No		No	No		No	No
Maximum Recall		No	No		No	No		No	No		No	No		No	No
Pedestrian Recall		No	No		No	No		No	No		No	No		No	No
Detector Location [ft]		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0
1, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Exclusive Pedestrian Phase															
Pedestrian Signal Group		0													
Pedestrian Walk [s]		0													
Pedestrian Clearance [s]		0													

Lane Group Calculations

Lane Group		L	C	C	L	C	C	L	C	L	C	L	C
C, Cycle Length [s]		58	58	58	58	58	58	58	58	58	58	58	58
L, Total Lost Time per Cycle [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l1.p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_l, Effective Green Time [s]		12	26	26	10	25	25	12	12	10	10	10	10
g / C, Green / Cycle		0.20	0.44	0.44	0.18	0.42	0.42	0.21	0.21	0.17	0.17	0.17	0.17
(v / s)_J Volume / Saturation Flow Rate		0.08	0.27	0.27	0.05	0.30	0.30	0.12	0.10	0.03	0.03	0.04	0.04
s, saturation flow rate [veh/h]		1781	1870	1828	1781	1870	1770	1781	1827	1781	1827	1870	1870
c, Capacity [veh/h]		353	828	809	320	793	750	368	345	295	295	286	286
d1, Uniform Delay [s]		20.32	12.38	12.40	20.55	13.73	13.75	20.78	20.14	20.96	20.76	20.76	20.76
k, delay calibration		0.04	0.13	0.13	0.04	0.13	0.13	0.11	0.04	0.11	0.04	0.11	0.04
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
d2, Incremental Delay [s]		0.27	0.86	0.89	0.16	1.33	1.42	1.43	0.40	0.34	0.14	0.14	0.14
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.40	0.61	0.61	0.26	0.70	0.70	0.58	0.49	0.21	0.22	0.22	0.22
d, Delay for Lane Group [s/veh]		20.59	13.24	13.28	20.71	15.07	15.16	22.21	20.54	21.31	20.91	20.91	20.91
Lane Group LOS		C	B	B	C	B	B	C	C	C	C	C	C
Critical Lane Group		Yes	No	No	No	No	Yes	Yes	No	No	Yes	Yes	Yes
50th-Percentile Queue Length [veh/m]		1.40	3.64	3.58	0.83	4.47	4.26	2.53	1.89	0.70	0.70	0.71	0.71
50th-Percentile Queue Length [ft/m]		34.99	91.03	89.52	20.63	111.64	106.42	63.20	47.19	17.38	17.70	17.70	17.70
95th-Percentile Queue Length [veh/m]		2.52	6.55	6.45	1.49	7.93	7.64	4.55	3.40	1.25	1.27	1.27	1.27
95th-Percentile Queue Length [ft/m]		62.98	163.85	161.13	37.13	198.29	191.00	113.76	84.94	31.28	31.87	31.87	31.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]		20.59	13.26	13.28	20.71	15.10	15.16	22.21	20.54	21.31	20.91	20.91	20.91
Movement LOS		C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]			14.17			15.51			21.47		21.10		
Approach LOS			B			B			C		C		
d_I, Intersection Delay [s/veh]							16.02						
Intersection LOS							B						
Intersection VC							0.535						

Other Modes

g_WalkInt, Effective Walk Time [s]		11.0				11.0			11.0			11.0	
M_corner, Corner Circulation Area [ft ² /ped]		0.00				0.00			0.00			0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]		15901.66				16948.94			0.00			0.00	
d_p, Pedestrian Delay [s]		19.05				19.05			19.05			19.05	
l_p.int, Pedestrian LOS Score for Intersection		3.086				3.136			2.147			2.079	
Crosswalk LOS		C				C			B			B	
s_b, Saturation Flow Rate of the bicycle lane		2000				2000			2000			2000	
c_b, Capacity of the bicycle lane [bicycles/h]		1741				1741			1062			1062	
d_b, Bicycle Delay [s]		0.49				0.49			6.38			6.38	
l_b.int, Bicycle LOS Score for Intersection		2.504				2.523			2.188			1.830	
Bicycle LOS		B				B			B			A	

Sequence

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



Intersection Level Of Service Report

Intersection 3: Old Hwy 53/Airport Rd

Delay (sec / veh): 18.0
Level Of Service: C
Volume to Capacity (v/c): 0.277

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

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		Airport Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	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]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Old Hwy 53		Old Hwy 53		Airport Rd	
Base Volume Input [veh/h]	286	81	33	260	105	43
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]	286	81	33	260	105	43
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	75	21	9	66	28	11
Total Analysis Volume [veh/h]	301	85	35	274	111	45
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.28	0.06
d, M, Delay for Movement [s/veh]	0.00	0.00	8.16	0.00	18.04	14.19
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.09	0.00	1.50	1.50
95th-Percentile Queue Length [ft]	0.00	0.00	2.31	0.00	37.45	37.45
d, A, Approach Delay [s/veh]	0.00	0.00	0.92		16.93	
Approach LOS	A	A		A	C	
d, I, Intersection Delay [s/veh]			3.44			
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 4: Old Hwy 53 S Market St

Control Type: Two-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 45.2
Level Of Service: E
Volume to Capacity (v/c): 0.755

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		S Market St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	50.00
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]	35.00			30.00		
Grade [%]	0.00			0.00		
Crosswalk	Yes			Yes		

Volumes

Name	Old Hwy 53			Old Hwy 53			S Market St		
Base Volume Input [veh/h]	351	226	16	348	221	16			
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]	351	226	16	348	221	16			
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500			
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			
Total 15-Minute Volume [veh/h]	92	59	4	92	58	4			
Total Analysis Volume [veh/h]	369	238	17	366	233	17			
Pedestrian Volume [ped/h]	0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.75	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	8.77	0.00	45.20	11.40
Movement LOS	A	A	A	A	E	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.05	0.00	5.75	0.09
95th-Percentile Queue Length [ft]	0.00	0.00	1.34	0.00	143.67	2.28
d_A, Approach Delay [s/veh]	0.00			0.39	42.90	
Approach LOS	A			A	E	
d_I, Intersection Delay [s/veh]	8.77					
Intersection LOS	E					

Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 47.4
Level Of Service: D
Volume to Capacity (V/C): 0.693

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3L			3L			3L			3L		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	100.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	336	646	348	349	577	126	115	148	373	338	149	366
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	13	0	5	0	0	95	0	0	0	38
Total Hourly Volume [veh/h]	336	646	335	349	577	121	115	148	278	338	149	348
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	88	170	88	92	162	32	30	39	73	89	39	92
Total Analysis Volume [veh/h]	354	680	353	367	607	127	121	156	293	356	157	366
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0			1			2			1		
v_di, Inbound Pedestrian Volume crossing	2			1			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings									
Located in CBD		No							
Signal Coordination Group		-							
Cycle Length [s]		140							
Coordination Type		Time of Day Pattern Isolated							
Actuation Type		Fully actuated							
Offset [s]		0.0							
Offset Reference		Lead Green - Beginning of First Green							
Permissive Mode		SingleBand							
Lost time [s]		0.00							

Phasing & Timing													
Control Type	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Overlap		
Signal Group	1	6	0	5	2	0	3	8	0	7	4	5	
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	4.5	
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	5	
Maximum Green [s]	31	47	0	17	33	0	11	35	0	18	42	17	
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	4.1	0.0	3.2	4.1	3.2	
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	2.0	
Split [s]	36	54	0	22	40	0	16	41	0	23	48	22	
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	
Wak [s]	0	7	0	0	7	0	0	7	0	0	7	0	
Pedestrian Clearance [s]	0	26	0	0	25	0	0	28	0	0	28	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	No	No	No	No	No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	
I2, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	3.6	0.0	3.2	3.6	3.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

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

Lane Group Calculations																	
Lane Group		L	C	C	L	C	L	C	L	C	L	C	R	L	C	R	
C, Cycle Length [s]		115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]		5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.20	6.50	5.20	6.50	5.20
I1, P, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]		3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	4.50	3.20	4.50	3.20
g, I, Effective Green Time [s]		25	38	38	17	30	30	10	24	24	14	29	51				
g / C, Green / Cycle		0.22	0.33	0.33	0.15	0.26	0.26	0.08	0.21	0.21	0.12	0.25	0.44				
s, saturation flow rate [veh/h]		1781	1870	1644	3459	1870	1759	1781	1870	1585	1870	1585	1870	1585	1870	1585	1870
c, Capacity [veh/h]		386	610	536	510	480	451	148	390	331	424	464	705				
d1, Uniform Delay [s]		44.13	36.87	37.34	46.89	39.94	39.95	52.01	39.38	44.26	49.49	35.58	23.15				
k, delay calibration		0.24	0.22	0.24	0.11	0.20	0.20	0.15	0.11	0.15	0.11	0.11	0.17				
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
d2, Incremental Delay [s]		16.95	8.98	13.07	1.93	5.37	5.72	13.83	0.66	10.42	4.53	0.43	0.95				
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				

Lane Group Results																	
X, volume / capacity		0.92	0.89	0.92	0.72	0.79	0.79	0.82	0.40	0.89	0.84	0.34	0.52				
d, Delay for Lane Group [s/veh]		61.08	45.85	50.41	48.82	45.31	45.68	65.84	40.04	54.68	54.03	36.01	24.09				
Lane Group LOS		E	D	D	D	D	D	E	D	D	D	D	C				
Critical Lane Group		No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No				
50th-Percentile Queue Length [veh/ln]		11.11	14.91	14.23	4.91	10.07	9.53	3.97	3.85	8.93	5.22	3.64	7.16				
50th-Percentile Queue Length [ft/ln]		277.78	372.71	355.67	122.70	251.82	238.31	99.31	96.26	223.33	130.48	91.11	178.96				
95th-Percentile Queue Length [veh/ln]		16.58	21.24	20.41	8.54	15.28	14.60	7.15	6.93	13.83	8.97	6.56	11.55				
95th-Percentile Queue Length [ft/ln]		414.45	531.02	510.32	213.53	381.94	364.89	178.76	173.27	345.87	224.14	164.00	288.65				

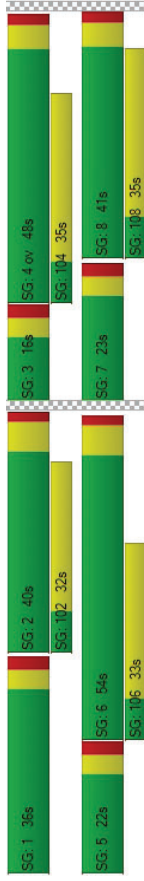
Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.08	46.78	50.41	48.82	45.45	45.68	66.84	40.04	54.68	54.03	38.01	24.09
Movement LOS	E	D	D	D	D	D	E	D	D	D	D	C
d_A, Approach Delay [s/veh]	51.35			46.60				53.04			38.34	
Approach LOS	D							D			D	
d_I, Intersection Delay [s/veh]							47.36					
Intersection LOS							D					
Intersection V/C							0.693					

Other Modes

	g_walk.mi. Effective Walk Time [s]	11.0	11.0	11.0	11.0
	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]	47.10	47.10	47.10	47.10
	L_p,int, Pedestrian LOS Score for Intersection	3.314	3.160	2.650	2.861
Crosswalk LOS					
	s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
	c_b, Capacity of the bicycle lane [bicycles/h]	825	582	615	736
	d_b, Bicycle Delay [s]	19.88	28.95	27.61	22.98
	L_b,int, Bicycle LOS Score for Intersection	2.715	2.472	2.657	3.073
Bicycle LOS					
		B	B	B	C

Sequence

[illegible]

Intersection Level Of Service Report

Intersection 6: Market St/Airport Rd-Festival Ln	
Control Type:	All-way stop
Analysis Method:	HCM 6th Edition
Analysis Period:	15 minutes
	Delay (sec / veh):
	Level Of Service:
	Volume to Capacity (v/c):
	8.5
	A
	0.170

Intersection Setup

Name	S Market St Northbound	N Market St Southbound	Alport Rd Eastbound	Festival Ln Westbound
Approach				
Lane Configuration				
Turning Movement				
Lane Width [ft]	Left 12.00	Left 12.00	Left 12.00	Left 12.00
No. of Lanes in Entry Pocket	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00
Speed [mph]	30.00	30.00	30.00	30.00
Grade [%]	0.00	0.00	0.00	0.00
Crosswalk	Yes	Yes	Yes	Yes

Volumes

Name	S Market/St		N Market St		Airport Rd		Festival Ln					
Base Volume Input [veh/h]	14	52	4	43	53	16	35	77	13	4	83	47
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	52	4	43	53	16	35	77	13	4	83	47
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	14	1	11	14	4	9	20	3	1	22	12
Total Analysis Volume [veh/h]	15	55	4	45	56	17	37	81	14	4	87	49
Pedestrian Volume [ped/h]					0	0		0			0	0

Intersection Settings

Lanes									
Capacity per Entry Lane [veh/h]		619	683	624	705	786	822		
Degree of Utilization, x		0.02	0.09	0.07	0.10	0.17	0.17		

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.07	0.28	0.23	0.34	0.60	0.61			
95th-Percentile Queue Length [ft]	1.86	7.06	5.81	8.61	15.02	15.29			
Approach Delay [s/veh]	8.50		8.59		8.50	8.28			
Approach LOS	A		A		A	A	A		
Intersection Delay [s/veh]							8.46		
Intersection LOS							A		

Intersection Level Of Service Report

Intersection 4: Old Hwy 53/S Market St

Control Type:	Roundabout	Delay (sec / veh):	7.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Old Hwy 53			Old Hwy 53			S Market St		
Approach	Northbound			Southbound			Westbound		
Lane Configuration	+ +			+ +			+ +		
Turning Movement	Thru	Right	Left	Thru	Left	Right	Left	Right	Right
Lane Width [ft]	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
Entry Pocket Length [ft]	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
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes		

Volumes

Name	Old Hwy 53			Old Hwy 53			S Market St		
Base Volume Input [veh/h]	351	226	16	348	16	221	16	221	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	351	226	16	348	16	221	16	221	16
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	59	4	92	4	58	4	58	4
Total Analysis Volume [veh/h]	369	238	17	366	17	233	17	233	17
Pedestrian Volume [ped/h]	0	0	0	0	0	0	0	0	0

Intersection Settings

Number of Conflicting Circulating Lanes	1	1	1	1
Circulating Flow Rate [veh/h]	17	238	338	376
Exiting Flow Rate [veh/h]	611	394	348	260
Demand Flow Rate [veh/h]	351	226	16	221
Adjusted Demand Flow Rate [veh/h]	369	238	17	233
				16
				17

Lanes				
Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	620	391	255	255
Capacity of Entry and Bypass Lanes [veh/h]	1366	1083	941	941
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1330	1062	922	922
X, volume / capacity	0.46	0.36	0.27	0.27

Movement, Approach, & Intersection Results

Lane LOS				
95th-Percentile Queue Length [veh]	A	A	A	A
95th-Percentile Queue Length [ft]	2.45	1.66	1.10	1.10
Approach Delay [s/veh]	61.37	41.51	27.56	27.56
Approach LOS	7.25	7.10	6.71	6.71
Intersection Delay [s/veh]	A	A	A	A
Intersection LOS		7.09		
		A		

Intersection Level Of Service Report

Intersection 4: Old Hwy 53/S Market St

Control Type:	Signalized	Delay (sec / veh):	7.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.531

Intersection Setup		Old Hwy 53		Old Hwy 53		S Market St	
Name		Northbound		Southbound		Westbound	
Approach		T		T		T	
Lane Configuration							
Turning Movement		Thru	Right	Left	Thru	Left	Right
Lane Width [ft]		12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket		0	0	1	0	0	1
Entry Pocket Length [ft]		100.00	100.00	100.00	100.00	100.00	50.00
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]		35.00		35.00		30.00	
Grade [%]		0.00		0.00		0.00	
Curb Present		No		No		No	
Crosswalk		Yes		Yes		Yes	

Volumes

Name	Old Hwy 53		Old Hwy 53		S Market St	
Base Volume Input [veh/h]	351	226	16	348	221	16
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	351	226	16	348	221	16
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	59	4	92	58	4
Total Analysis Volume [veh/h]	369	238	17	366	233	17
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing major street	0	0	0	0	0	0
v_di, Inbound Pedestrian Volume crossing major street[	0	0	0	0	0	0
v_co, Outbound Pedestrian Volume crossing minor street	0	0	0	0	0	0
v_ci, Inbound Pedestrian Volume crossing minor street[	0	0	0	0	0	0
v_ab, Corner Pedestrian Volume [ped/h]	0	0	0	0	0	0
Bicycle Volume [bicycles/h]	0	0	0	0	0	0

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
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	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7
Auxiliary Signal Groups	-	-	-	-	Lead
Lead / Lag	10	0	0	10	5
Minimum Green [s]	31	0	0	31	31
Maximum Green [s]	3.0	0.0	0.0	3.0	3.0
Amber [s]	1.0	0.0	0.0	1.0	1.0
All red [s]	35	0	0	35	35
Split [s]	3.0	0.0	0.0	3.0	3.0
Vehicle Extension [s]	5	0	0	5	5
Walk [s]	10	0	0	10	10
Pedestrian Clearances [s]	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	No	No	No	No	No
Rest in Walk	2.0	0.0	0.0	2.0	2.0
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0
Minimum Recall	No	No	No	No	No
Maximum Recall	No	No	No	No	No
Pedestrian Recall	0.0	0.0	0.0	0.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	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	L	R
C, Cycle Length [s]	26	26	26	26	26
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_l, Effective Green Time [s]	13	13	13	5	5
g / C, Green / Cycle	0.50	0.50	0.50	0.20	0.20
(v / s)_l Volume / Saturation Flow Rate	0.39	0.02	0.22	0.15	0.01
s, saturation flow rate [veh/h]	1574	732	1683	1603	1431
c, Capacity [veh/h]	779	349	833	325	290
d1, Uniform Delay [s]	5.49	10.85	4.31	9.84	8.51
k, delay calibration	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.73	0.06	0.37	2.98	0.08
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	0.78	0.05	0.44	0.72	0.06
d, Delay for Lane Group [s/veh]	7.22	10.91	4.67	12.82	8.60
Lane Group LOS	A	B	A	B	A
Critical Lane Group	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/in]	0.94	0.07	0.35	1.07	0.06
50th-Percentile Queue Length [ft/in]	23.53	1.64	8.82	26.84	1.44
95th-Percentile Queue Length [veh/in]	1.69	0.12	0.64	1.93	0.10
95th-Percentile Queue Length [ft/in]	42.35	2.94	15.88	48.31	2.59

Movement, Approach, & Intersection Results

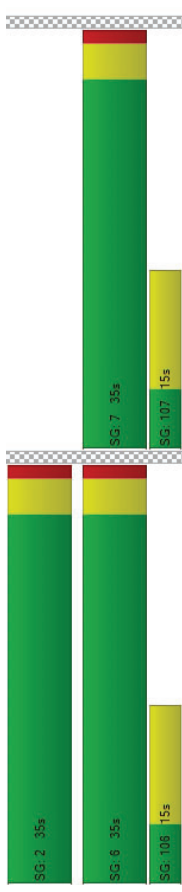
d_M, Delay for Movement [s/veh]	7.22	7.22	10.91	4.67	12.82	8.60
Movement LOS	A	A	B	A	B	A
d_A, Approach Delay [s/veh]	7.22	7.22	4.95		12.54	
Approach LOS	A	A	A		B	
d_I, Intersection Delay [s/veh]			7.59			
Intersection LOS			A			
Intersection V/C			0.531			

Other Modes

g, Walk, mt, Effective Walk Time [s]	9.0		9.0		9.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_OW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	5.68		5.68		5.68	
l_p.int, Pedestrian LOS Score for Intersection	2.328		2.159		2.055	
Crosswalk LOS	B		B		B	
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	2360		2360		2360	
d_b, Bicycle Delay [s]	0.42		0.42		0.42	
l_b.int, Bicycle LOS Score for Intersection	2.561		2.192		1.560	
Bicycle LOS	B		B		A	

Sequence

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



Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 35.0
Level Of Service: D
Volume to Capacity (v/c): 0.657

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3L			3L			3L			3L		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	336	646	348	349	577	126	115	148	373	338	149	366
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	13	0	5	0	0	95	0	0	0	38
Total Hourly Volume [veh/h]	336	646	335	349	577	121	115	148	278	338	149	348
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	88	170	88	92	162	32	30	39	73	89	39	92
Total Analysis Volume [veh/h]	354	680	353	367	607	127	121	156	293	356	157	366
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0			1			2			1		
v_di, Inbound Pedestrian Volume crossing	2			1			0			1		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	1	7	4	5		
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	4.5		
Minimum Green [s]	5	10	0	5	10	0	5	10	5	5	10	5		
Maximum Green [s]	31	47	0	17	33	0	11	35	31	18	42	17		
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	4.1	3.2	3.2	4.1	3.2		
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	2.0	2.0	1.5	2.0		
Split [s]	36	54	0	22	40	0	16	41	36	23	48	22		
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0		
Wak [s]	0	7	0	0	7	0	0	7	0	0	7	0		
Pedestrian Clearance [s]	0	26	0	0	25	0	0	28	0	0	28	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	No	No	No	No	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	2.0	2.0	2.0	2.0		
I2, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	3.6	3.2	3.2	3.6	3.2		
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No		
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No		
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.20	6.50	6.50	5.20
I1, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	4.50	4.50	3.20
g, I, Effective Green Time [s]	22	32	32	17	27	27	8	11	39	12	15	38			
g / C, Green / Cycle	0.23	0.33	0.33	0.18	0.29	0.29	0.09	0.12	0.41	0.13	0.16	0.40			
(v / s), Volume / Saturation Flow Rate	0.20	0.29	0.30	0.11	0.20	0.20	0.07	0.08	0.18	0.10	0.08	0.23			
s, saturation flow rate [veh/h]	1781	1870	1644	3459	1870	1759	1781	1870	1589	3459	1870	1589			
c, Capacity [veh/h]	407	624	549	621	533	502	152	226	648	443	305	639			
d1, Uniform Delay [s]	35.18	29.56	29.94	35.63	30.30	30.31	42.49	39.93	20.33	40.10	36.15	21.97			
k, delay calibration	0.15	0.13	0.15	0.11	0.12	0.12	0.11	0.11	0.12	0.11	0.11	0.11			
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
d2, Incremental Delay [s]	7.75	4.69	7.09	0.90	1.88	2.01	9.13	3.77	0.53	3.45	1.34	0.81			
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			

Lane Group Results

X, volume / capacity	0.87	0.87	0.89	0.59	0.71	0.71	0.80	0.69	0.45	0.80	0.51	0.57			
d, Delay for Lane Group [s/veh]	42.93	34.26	37.02	36.53	32.18	32.32	51.62	43.70	20.86	43.56	37.49	22.78			
Lane Group LOS	D	C	D	D	C	C	D	D	C	D	D	C			
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes			
50th-Percentile Queue Length [veh/ln]	8.05	11.10	10.51	3.67	7.26	6.86	3.10	3.64	4.56	4.14	3.34	6.12			
50th-Percentile Queue Length [ft/ln]	201.33	277.43	262.84	91.80	181.51	171.43	77.49	90.91	114.09	103.45	83.62	153.12			
95th-Percentile Queue Length [veh/ln]	12.71	16.56	15.83	6.61	11.68	11.15	5.58	6.55	8.07	7.45	6.02	10.18			
95th-Percentile Queue Length [ft/ln]	317.69	414.00	395.78	165.25	291.99	278.79	139.48	163.64	201.68	186.21	150.52	254.58			

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.93	34.82	37.02	36.53	32.23	32.32	51.62	43.70	20.86	43.56	37.49	22.78
Movement LOS	D	C	D	D	C	C	D	D	C	D	D	C
d_A, Approach Delay [s/veh]		37.45			33.67			33.64			33.82	
Approach LOS		D			C			C			C	
d_I, Intersection Delay [s/veh]							35.03					
Intersection LOS							D					
Intersection V/C							0.657					

Other Modes

g_Walk,mt, Effective Walk Time [s]	11.0		11.0		11.0							11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00		0.00		0.00		0.00		0.00			0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00		0.00		0.00		0.00		0.00			0.00
d_p, Pedestrian Delay [s]	36.90		36.90		36.90		36.90		36.90			36.90
I_p,Int, Pedestrian LOS Score for Intersection	3.304		3.150		2.640		2.851		2.851			2.851
Crosswalk LOS	C		C		B		C		C			C
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000		2000			2000
c_b, Capacity of the bicycle lane [bicycles/h]	1005		709		749		887		887			887
d_b, Bicycle Delay [s]	11.70		19.69		18.49		14.37		14.37			14.37
I_b,Int, Bicycle LOS Score for Intersection	2.715		2.472		2.657		3.073		3.073			3.073
Bicycle LOS	B		B		B		C		C			C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-
SG_1 36s												
SG_2 40s												
SG_3 16s												
SG_4 40s												
SG_5 22s												
SG_6 54s												
SG_7 23s												
SG_8 41s												
SG_9 33s												
SG_10 33s												
SG_11 35s												
SG_12 32s												
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SG_100 35s												

Intersection Level Of Service Report

Control Type:	Two-way stop	Delay (sec / veh):	16.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Old Hwy 53	Old Hwy 53	18th Ave Extension
Approach	Northbound	Southbound	Westbound
Lane Configuration			
Turning Movement	Thru	Left	Thru
Lane Width [ft]	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00
Speed [mph]	35.00	35.00	30.00
Grade [%]	0.00	0.00	0.00
Crosswalk	Yes	Yes	Yes

Volumes

Name	Old Hwy 53	Old Hwy 53	18th Ave Extension
Base Volume Input [veh/h]	306	53	361
Base Volume Adjustment Factor	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0
Site-Generated Trips [veh/h]	0	0	0
Diverted Trips [veh/h]	0	0	0
Pass-by Trips [veh/h]	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0
Other Volume [veh/h]	0	0	0
Total Hourly Volume [veh/h]	306	53	361
Peak Hour Factor	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	14	92
Total Analysis Volume [veh/h]	312	54	368
Pedestrian Volume [ped/h]	0	0	0

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C Movement V/C Ratio	0.00	0.00	0.04	0.00	0.02	0.07
d_M Delay for Movement [s/veh]	0.00	0.00	8.04	0.00	16.06	10.52
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.14	0.00	0.29	0.29
95th-Percentile Queue Length [ft/ln]	0.00	0.00	3.41	0.00	7.22	7.22
d_A Approach Delay [s/veh]	0.00	0.00	1.03	A	11.21	
Approach LOS	A	A	A	A	B	
d_I Intersection Delay [s/veh]			1.33	C		
Intersection LOS						

Intersection Level Of Service Report

Intersection 2: SR 53/18th Ave

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 16.6
Level Of Service: B
Volume to Capacity (v/c): 0.586

Intersection Setup

Name	SR 53			SR 53			18th Ave		
Approach	Northbound			Southbound			Eastbound		
Lane Configuration	T T T			T T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	675.00	100.00	100.00	720.00	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
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	55.00			55.00			30.00		
Grade [%]	0.00			0.00			0.00		
Curb Present	No			No			No		
Crosswalk	Yes			Yes			Yes		

Volumes

Name	SR 53		SR 53		18th Ave		18th Ave		18th Ave	
Base Volume Input [veh/h]	163	835	44	42	750	303	275	40	145	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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
In-Process Volume [veh/h]	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
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	3	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	163	835	41	42	750	303	275	40	145	37
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	215	11	11	193	78	71	10	37	11
Total Analysis Volume [veh/h]	168	861	42	43	773	312	284	41	149	45
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	0									
v_di, Inbound Pedestrian Volume crossing	0									
v_co, Outbound Pedestrian Volume crossing	0									
v_ci, Inbound Pedestrian Volume crossing	0									
v_ab, Corner Pedestrian Volume [ped/h]	0									
Bicycle Volume [bicydes/h]	0									

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	145
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss
Signal Group	5	2	0	1	6	0	7	4	0	8
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-	-	-
Minimum Green [s]	7	8	0	7	8	0	7	7	0	7
Maximum Green [s]	21	50	0	21	50	0	21	31	0	31
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	3.2	0.0	3.2
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	2.0	0.0	2.0
Split [s]	26	57	0	26	57	0	26	36	0	36
Vehicle Extension [s]	1.5	3.4	0.0	1.5	3.4	0.0	3.0	1.5	0.0	1.5
Walk [s]	0	7	0	0	7	0	0	7	0	7
Pedestrian Clearance [s]	0	26	0	0	17	0	0	23	0	23
Delayed Vehicle Green [s]	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	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	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

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group		L	C	C	L	C	L	C	L	C	L	C
C. Cycle Length [s]		62	62	62	62	62	62	62	62	62	62	62
L. Total Lost Time per Cycle [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l1.p. Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2. Clearance Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g.l. Effective Green Time [s]		12	29	29	9	26	26	15	8	16	9	9
g / C. Green / Cycle		0.19	0.47	0.47	0.14	0.42	0.24	0.24	0.26	0.12	0.15	0.15
(v / s) J Volume / Saturation Flow Rate		0.09	0.24	0.24	0.02	0.30	0.31	0.16	0.12	0.01	0.03	0.03
s. saturation flow rate [veh/h]		1781	1870	1840	1781	1870	1690	1781	1643	1781	1843	1843
c. Capacity [veh/h]		340	880	865	255	791	715	423	433	218	274	274
d1. Uniform Delay [s]		22.42	11.49	11.49	23.31	14.84	14.85	21.45	19.00	24.20	23.08	23.08
k. delay calibration		0.04	0.13	0.13	0.04	0.13	0.13	0.11	0.04	0.11	0.04	0.04
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
d2. Incremental Delay [s]		0.41	0.55	0.56	0.11	1.46	1.62	1.86	0.26	0.22	0.11	0.11
d3. Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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		0.49	0.52	0.52	0.17	0.72	0.72	0.67	0.44	0.11	0.18	0.18
d. Delay for Lane Group [s/veh]		22.83	12.04	12.05	23.43	16.29	16.47	23.30	19.26	24.42	23.20	23.20
Lane Group LOS		C	B	B	C	B	B	C	B	C	C	C
Critical Lane Group		Yes	No	No	No	No	Yes	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/m]		1.87	3.19	3.14	0.48	5.15	4.70	3.67	2.13	0.31	0.60	0.60
50th-Percentile Queue Length [ft/m]		46.79	79.76	78.53	11.98	128.66	117.46	91.79	53.26	7.75	14.99	14.99
95th-Percentile Queue Length [veh/m]		3.37	5.74	5.65	0.86	8.87	8.25	6.61	3.83	0.56	1.08	1.08
95th-Percentile Queue Length [ft/m]		84.22	143.57	141.36	21.57	221.67	206.33	165.22	95.87	13.95	26.99	26.99

Movement, Approach, & Intersection Results

d.M. Delay for Movement [s/veh]	22.83	12.05	12.05	23.43	16.34	16.47	23.30	19.26	19.26	24.42	23.20	23.20
Movement LOS		C	B	B	C	B	C	B	B	C	C	C
d.A. Approach Delay [s/veh]	13.74			16.65				21.68			23.60	
Approach LOS		B			B			C			C	
d.I. Intersection Delay [s/veh]						16.57						
Intersection LOS						B						
Intersection VC						0.586						

Other Modes

g.WalkInt. Effective Walk Time [s]	11.0			11.0				11.0			11.0	
M_corner. Corner Circulation Area [ft ² /ped]	0.00			0.00				0.00			0.00	
M_CW. Crosswalk Circulation Area [ft ² /ped]	0.00			0.00				0.00			0.00	
d.p. Pedestrian Delay [s]	20.91			20.91				20.91			20.91	
L.p.int. Pedestrian LOS Score for Intersection		3.005		3.106				2.244			2.050	
Crosswalk LOS		C		C				B			B	
s.b. Saturation Flow Rate of the bicycle lane	2000			2000				2000			2000	
c.b. Capacity of the bicycle lane [bicycles/h]	1633			1633				996			996	
d.b. Bicycle Delay [s]	1.04			1.04				7.80			7.80	
L.b.int. Bicycle LOS Score for Intersection		2.446		2.490				2.342			1.741	
Bicycle LOS		B		B				B			A	

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-
SG 1 26s												
SG 2 57s												
SG 3 26s												
SG 4 36s												
SG 5 26s												
SG 6 57s												
SG 7 26s												
SG 8 36s												
SG 9 30s												
SG 10 24s												

Intersection Level Of Service Report

Intersection 3: Old Hwy 53/Airport Rd

Delay (sec / veh): 21.7
Level Of Service: C
Volume to Capacity (v/c): 0.352

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

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		Airport Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	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]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Old Hwy 53		Old Hwy 53		Airport Rd	
Base Volume Input [veh/h]	251	142	65	300	121	57
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]	251	142	65	300	121	57
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	36	17	77	31	15
Total Analysis Volume [veh/h]	256	145	66	306	123	58
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.06	0.00	0.35	0.08
d, M, Delay for Movement [s/veh]	0.00	0.00	8.30	0.00	21.73	16.48
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.18	0.00	2.14	2.14
95th-Percentile Queue Length [ft]	0.00	0.00	4.53	0.00	53.48	53.48
d, A, Approach Delay [s/veh]	0.00	0.00	1.47		20.05	
Approach LOS	A	A	A		C	
d, I, Intersection Delay [s/veh]			4.38			
Intersection LOS			C			

Intersection Level Of Service Report

Intersection 4: Old Hwy 53 S Market St

Control Type: Two-way stop
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 111.5
Level Of Service: F
Volume to Capacity (v/c): 1.055

Intersection Setup

Name	Old Hwy 53		Old Hwy 53		S Market St	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	50.00
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]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Old Hwy 53			S Market St		
Base Volume Input [veh/h]	364	279	31	390	278	29
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
Diversified 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]	364	279	31	390	278	29
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	71	8	99	71	7
Total Analysis Volume [veh/h]	371	285	32	398	284	30
Pedestrian Volume [ped/h]	0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	1.06	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	9.00	0.00	111.45	11.78
Movement LOS	A	A	A	A	F	B
95th-Percentile Queue Length [veh/in]	0.00	0.00	0.11	0.00	11.29	0.17
95th-Percentile Queue Length [ft/in]	0.00	0.00	2.67	0.00	282.25	4.23
d_A, Approach Delay [s/veh]	0.00		0.67	101.93		
Approach LOS	A		A	F		
d_I, Intersection Delay [s/veh]				23.07		
Intersection LOS	F					

Intersection Level Of Service Report

Intersection 6: SR 53/Dam Rd

Control Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutes
Delay (sec / veh): 40.4
Level Of Service: D
Volume to Capacity (v/c): 0.677

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3L			3L			3L			3L		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	364	552	302	344	515	151	135	158	383	279	133	386
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	32	0	0	8	0	0	76	0	0	80
Total Hourly Volume [veh/h]	364	552	270	344	515	143	135	158	307	279	133	306
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	141	69	88	131	36	34	40	78	71	34	78
Total Analysis Volume [veh/h]	371	563	276	351	526	146	138	161	313	285	136	312
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_d0, Outbound Pedestrian Volume crossing	1			2			0			0		
v_d1, Inbound Pedestrian Volume crossing	0			0			1			2		
v_c0, Outbound Pedestrian Volume crossing	0			0			0			0		
v_c1, Inbound Pedestrian Volume crossing	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	180
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	0	7	4	5	
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-	4.5
Lead / Lag													
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	5	
Maximum Green [s]	48	57	0	36	45	0	19	45	0	19	45	36	
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	4.1	0.0	3.2	4.1	3.2	
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	2.0	
Split [s]	53	64	0	41	52	0	24	51	0	24	51	41	
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	
Wak [s]	0	7	0	0	7	0	0	7	0	0	7	0	
Pedestrian Clearance [s]	0	26	0	0	25	0	0	28	0	0	28	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	No	No	No	No	No	No	No	No	
11, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	
12, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	3.6	0.0	3.2	3.6	3.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	102	102	102	102	102	102	102	102	102	102	102	102	102	102
L, Total Lost Time per Cycle [s]	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.20	6.50	5.20	6.50	5.20	6.50
11, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	4.50	3.20	4.50	3.20	4.50
g, I, Effective Green Time [s]	24	28	28	17	22	22	10	23	23	23	11	24	23	47
g / C, Green / Cycle	0.23	0.28	0.28	0.17	0.22	0.22	0.10	0.22	0.22	0.22	0.11	0.23	0.22	0.46
(v / s), Volume / Saturation Flow Rate	0.21	0.24	0.24	0.10	0.19	0.19	0.08	0.09	0.20	0.20	0.08	0.07	0.20	0.20
s, saturation flow rate [veh/h]	1781	1870	1665	3459	1870	1712	1781	1870	1587	1587	3459	1870	1587	1587
c, Capacity [veh/h]	412	522	465	569	408	373	171	420	356	365	438	365	438	365
d1, Uniform Delay [s]	38.07	34.74	34.82	39.08	36.36	38.47	45.21	33.57	38.21	38.21	44.47	32.26	18.54	18.54
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
1, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.32	3.94	4.57	0.97	5.25	6.13	8.73	0.58	6.99	6.99	3.64	0.40	0.40	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.85	0.85	0.60	0.86	0.87	0.81	0.38	0.88	0.78	0.31	0.43		
d, Delay for Lane Group [s/veh]	45.39	38.68	39.38	40.04	43.61	44.59	53.94	34.15	45.19	48.11	32.66	18.94		
Lane Group LOS	D	D	D	D	D	D	D	C	D	D	C	B		
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	Yes	Yes	No	No		
50th-Percentile Queue Length [veh/ln]	9.14	10.06	9.12	3.88	8.36	7.85	3.77	3.38	8.03	3.63	2.77	4.81		
50th-Percentile Queue Length [ft/ln]	226.56	251.55	227.88	96.93	208.93	196.15	94.36	84.59	200.73	90.75	69.23	120.18		
95th-Percentile Queue Length [veh/ln]	14.10	15.26	14.07	6.98	13.10	12.44	6.79	6.09	12.88	6.53	4.98	8.40		
95th-Percentile Queue Length [ft/ln]	352.53	381.61	351.67	174.47	327.45	311.00	169.84	152.26	316.91	163.35	124.61	210.07		

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.39	38.83	39.38	40.04	43.94	44.59	53.94	34.15	45.19	48.11	32.66	18.94
Movement LOS	D	D	D	D	D	D	D	C	D	D	C	B
d_A, Approach Delay [s/veh]		40.97			42.70		44.26				32.83	
Approach LOS		D			D		D				C	
d_I, Intersection Delay [s/veh]						40.36						
Intersection LOS						D						
Intersection V/C						0.677						

Other Modes

g_Walk,mt, Effective Walk Time [s]	11.0		11.0		11.0		0.00		11.0		11.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	40.50		40.50		40.50		40.50		40.50		40.50	
I_p,Int, Pedestrian LOS Score for Intersection	3.224		3.103		2.629		B		2.882		C	
Crosswalk LOS	C		C		B		C		C		C	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1129		894		892		892		892		892	
d_b, Bicycle Delay [s]	9.64		15.59		15.63		15.63		15.63		15.63	
I_b,Int, Bicycle LOS Score for Intersection	2.584		2.410		2.695		B		2.901		C	
Bicycle LOS	B		B		B		C		C		C	

Sequence

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

Intersection Level Of Service Report

Intersection 6: Market St/Airport Rd-Festival Ln
All-way stop
HCM 6th Edition
Delay (sec / veh): 9.5
Level Of Service: A
Volume to Capacity (v/c): 0.264
Analysis Period: 15 minutes

Intersection Setup

Name	S Market St				N Market St				Airport Rd				Festival Ln			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	T				T				T				T			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	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	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	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	0.00	0.00	0.00	0.00
Speed [mph]	30.00				30.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	S Market St				N Market St				Airport Rd				Festival Ln			
Base Volume Input [veh/h]	24	71	8	69	90	26	19	141	27	7	126	61	7	126	61	61
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	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	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	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diversified Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	71	8	69	90	26	19	141	27	7	126	61	7	126	61	61
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	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	18	2	18	23	7	5	36	7	2	32	16	2	32	16	16
Total Analysis Volume [veh/h]	24	72	8	70	92	27	19	144	28	7	129	62	7	129	62	62
Pedestrian Volume [ped/h]	0				0				0				0			

Intersection Settings

Lanes									
Capacity per Entry Lane [veh/h]		573	631	584	655	733	751		
Degree of Utilization, x		0.04	0.13	0.12	0.18	0.26	0.26		

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]		0.13	0.43	0.41	0.66	1.04	1.06
95th-Percentile Queue Length [ft]		3.27	10.82	10.15	16.50	26.03	26.46
Approach Delay [s/veh]		9.24		9.52		9.63	9.50
Approach LOS		A		A		A	A
Intersection Delay [s/veh]		9.51					A
Intersection LOS		A					

Intersection Level Of Service Report

Intersection 4: Old Hwy 53/S Market St

Control Type:	Roundabout	Delay (sec / veh):	8.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Old Hwy 53			Old Hwy 53			S Market St		
Approach	Northbound			Southbound			Westbound		
Lane Configuration	+ +			+ +			+ +		
Turning Movement	Thru	Right	Left	Thru	Left	Right	Left	Right	Right
Lane Width [ft]	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
Entry Pocket Length [ft]	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
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes		

Volumes

Name	Old Hwy 53			Old Hwy 53			S Market St		
Base Volume Input [veh/h]	364	279	31	390	1,000	1,000	278	29	29
Base Volume Adjustment Factor	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
Heavy Vehicles Percentage [%]	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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	364	279	31	390	1,000	1,000	278	29	29
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
Total 15-Minute Volume [veh/h]	93	71	8	99	32	32	71	7	7
Total Analysis Volume [veh/h]	371	265	32	398	284	284	30	30	30
Pedestrian Volume [ped/h]	0	0	0	0	0	0	0	0	0

Intersection Settings

Number of Conflicting Circulating Lanes	1	1	1	1
Circulating Flow Rate [veh/h]	33	290	378	378
Exiting Flow Rate [veh/h]	696	409	323	323
Demand Flow Rate [veh/h]	364	279	31	390
Adjusted Demand Flow Rate [veh/h]	371	285	32	398
			278	284
			29	30

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	670	439	321	321
Capacity of Entry and Bypass Lanes [veh/h]	1335	1027	939	939
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1309	1007	920	920
X, volume / capacity	0.50	0.43	0.34	0.34

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	2.91	2.17	1.52	1.52
95th-Percentile Queue Length [ft]	72.79	54.27	38.11	38.11
Approach Delay [s/veh]	7.99	8.35	7.64	7.64
Approach LOS	A	A	A	A
Intersection Delay [s/veh]		8.02		
Intersection LOS		A		

Intersection Level Of Service Report

Intersection 4: Old Hwy 53/S Market St

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.597

Intersection Setup		Old Hwy 53		Old Hwy 53		S Market St	
Name		Northbound		Southbound		Westbound	
Approach		T		T		T	
Lane Configuration		Thru		Left		Left	
Turning Movement		12.00		12.00		12.00	
Lane Width [ft]		0		1		0	
No. of Lanes in Entry Pocket		100.00		100.00		100.00	
Entry Pocket Length [ft]		0		0		0	
No. of Lanes in Exit Pocket		0.00		0.00		0.00	
Exit Pocket Length [ft]		35.00		35.00		30.00	
Speed [mph]		0.00		0.00		0.00	
Grade [%]		0.00		0.00		0.00	
Curb Present		No		No		No	
Crosswalk		Yes		Yes		Yes	

Volumes

Name	Old Hwy 53		Old Hwy 53		S Market St	
Base Volume Input [veh/h]	364	279	31	390	278	29
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	364	279	31	390	278	29
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	71	8	99	71	7
Total Analysis Volume [veh/h]	371	285	32	398	284	30
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing major street	0	0	0	0	0	0
v_di, Inbound Pedestrian Volume crossing major street [	0	0	0	0	0	0
v_co, Outbound Pedestrian Volume crossing minor street	0	0	0	0	0	0
v_ci, Inbound Pedestrian Volume crossing minor street [	0	0	0	0	0	0
v_ab, Corner Pedestrian Volume [ped/h]	0	0	0	0	0	0
Bicycle Volume [bicycles/h]	0	0	0	0	0	0

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
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	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7
Auxiliary Signal Groups	-	-	-	-	Lead
Lead / Lag	10	0	0	10	5
Minimum Green [s]	31	0	0	31	31
Maximum Green [s]	3.0	0.0	0.0	3.0	3.0
Amber [s]	1.0	0.0	0.0	1.0	1.0
All red [s]	35	0	0	35	35
Split [s]	3.0	0.0	0.0	3.0	3.0
Vehicle Extension [s]	5	0	0	5	5
Walk [s]	10	0	0	10	10
Pedestrian Clearances [s]	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	No	No	No	No	No
Rest in Walk	2.0	0.0	0.0	2.0	2.0
11, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0
12, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0
Minimum Recall	No	No	No	No	No
Maximum Recall	No	No	No	No	No
Pedestrian Recall	0.0	0.0	0.0	0.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	1.00	1.00	1.00	1.00	1.00
I, Upstream Filtering Factor	1.00	1.00	1.00	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	L	R
C, Cycle Length [s]	34	34	34	34	34
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00
g_l, Effective Green Time [s]	18	18	18	8	8
g / C, Green / Cycle	0.53	0.53	0.53	0.24	0.24
(v / s)_l Volume / Saturation Flow Rate	0.42	0.05	0.24	0.18	0.02
s, saturation flow rate [veh/h]	1563	699	1683	1603	1431
c, Capacity [veh/h]	824	301	887	379	338
d1, Uniform Delay [s]	6.52	13.54	4.95	11.98	10.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.81	0.15	0.36	2.99	0.11
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	0.80	0.11	0.45	0.75	0.09
d, Delay for Lane Group [s/veh]	8.33	13.69	5.31	14.97	10.18
Lane Group LOS	A	B	A	B	B
Critical Lane Group	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/in]	1.90	0.18	0.77	1.79	0.14
50th-Percentile Queue Length [ft/in]	47.43	4.58	19.29	44.65	3.53
95th-Percentile Queue Length [veh/in]	3.41	0.33	1.39	3.21	0.25
95th-Percentile Queue Length [ft/in]	85.37	8.24	34.72	80.37	6.35

Movement, Approach, & Intersection Results

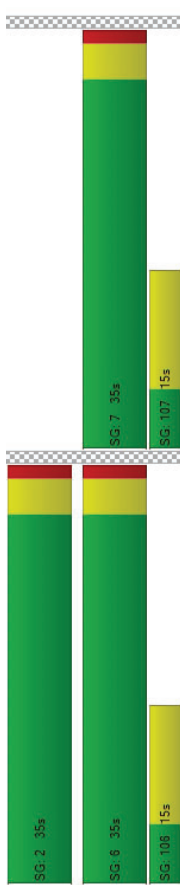
d_M, Delay for Movement [s/veh]	8.33	8.33	13.69	5.31	14.97	10.18
Movement LOS	A	A	B	A	B	B
d_A, Approach Delay [s/veh]	8.33	8.33	5.93		14.52	
Approach LOS	A	A			B	
d_I, Intersection Delay [s/veh]			8.98			
Intersection LOS			A			
Intersection V/C			0.597			

Other Modes

g, Walk, mt, Effective Walk Time [s]	9.0	9.0			9.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00		0.00	
d_p, Pedestrian Delay [s]	9.03	9.03	9.03		9.03	
l_p.int, Pedestrian LOS Score for Intersection	2.421	2.201			2.136	
Crosswalk LOS	B	B			B	
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1843	1843	1843		1843	
d_b, Bicycle Delay [s]	0.10	0.10	0.10		0.10	
l_b.int, Bicycle LOS Score for Intersection	2.642	2.269			1.560	
Bicycle LOS	B	B			A	

Sequence

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



Intersection Level Of Service Report

Intersection 5: SR 53/Dam Rd

Control Type: Signalized

Analysis Method: HCM 6th Edition

Analysis Period: 15 minutes

Delay (sec / veh): 30.3

Level Of Service: C

Volume to Capacity (v/c): 0.628

Intersection Setup

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3L			3L			3L			3R		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	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	2	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	570.00	100.00	100.00	760.00	100.00	100.00	150.00	100.00	110.00	140.00	100.00	250.00
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]	55.00			55.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	SR 53			SR 53			Old Hwy 53			Dam Rd		
Base Volume Input [veh/h]	364	552	302	344	515	151	135	158	383	279	133	386
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	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
Diverter Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	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	32	0	0	8	0	0	76	0	0	80
Total Hourly Volume [veh/h]	364	552	270	344	515	143	135	158	307	279	133	306
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	141	69	88	131	36	34	40	78	71	34	78
Total Analysis Volume [veh/h]	371	563	276	351	526	146	138	161	313	285	136	312
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_db, Outbound Pedestrian Volume crossing	1			2			0			0		
v_di, Inbound Pedestrian Volume crossing	0			0			1			2		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	180
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	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	1	7	4	5		
Auxiliary Signal Groups	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	4.5		
Minimum Green [s]	5	10	0	5	10	0	5	10	5	5	10	5		
Maximum Green [s]	48	57	0	36	45	0	19	45	48	19	45	36		
Amber [s]	3.2	5.0	0.0	3.2	5.0	0.0	3.2	4.1	3.2	3.2	4.1	3.2		
All red [s]	2.0	1.5	0.0	2.0	1.5	0.0	2.0	1.5	2.0	2.0	1.5	2.0		
Split [s]	53	64	0	41	52	0	24	51	53	24	51	41		
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0		
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0		
Pedestrian Clearance [s]	0	26	0	0	25	0	0	28	0	0	28	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	No	No	No	No	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	2.0	2.0	2.0	2.0		
I2, Clearance Lost Time [s]	3.2	4.5	0.0	3.2	4.5	0.0	3.2	3.6	3.2	3.2	3.6	3.2		
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No		
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No		
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	L	C	R	C	R
C, Cycle Length [s]	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
L, Total Lost Time per Cycle [s]	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	6.50	5.20	6.50	5.20	6.50	5.20	6.50	5.20
I1, P, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I2, Clearance Lost Time [s]	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	4.50	3.20	4.50	3.20	4.50	3.20	4.50	3.20
g, I, Effective Green Time [s]	20	22	22	15	18	18	8	10	35	9	11	32				
g / C, Green / Cycle	0.25	0.28	0.28	0.19	0.23	0.23	0.10	0.13	0.45	0.11	0.14	0.41				
(v / s), Volume / Saturation Flow Rate	0.21	0.24	0.24	0.10	0.19	0.19	0.08	0.09	0.20	0.08	0.07	0.20				
s, saturation flow rate [veh/h]	1781	1870	1665	3459	1870	1712	1771	1870	1589	3459	1870	1589				
c, Capacity [veh/h]	441	523	466	674	424	388	177	242	711	391	268	649				
d1, Uniform Delay [s]	28.43	27.03	27.08	28.69	29.22	29.30	34.96	32.97	15.11	34.09	31.48	17.31				
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11				
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
d2, Incremental Delay [s]	4.39	3.87	4.49	0.63	4.05	4.68	7.23	3.12	0.43	2.62	1.49	0.55				
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				

Lane Group Results

X, volume / capacity	0.84	0.85	0.85	0.52	0.82	0.83	0.78	0.66	0.44	0.73	0.51	0.48				
d, Delay for Lane Group [s/veh]	32.82	30.90	31.58	29.31	33.27	33.89	42.19	36.09	15.54	36.71	32.97	17.87				
Lane Group LOS	C	C	C	C	C	C	D	D	B	D	C	B				
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No	No	No	Yes				
50th-Percentile Queue Length [veh/ln]	642	7.43	6.75	2.74	6.06	5.69	2.86	3.04	3.61	2.69	2.42	3.95				
50th-Percentile Queue Length [ft/ln]	160.61	185.83	168.82	68.48	151.51	142.29	71.47	75.97	90.36	67.35	60.54	98.75				
95th-Percentile Queue Length [veh/ln]	10.58	11.90	11.01	4.93	10.10	9.60	5.15	5.47	6.51	4.85	4.36	7.11				
95th-Percentile Queue Length [ft/ln]	264.53	297.61	275.36	123.26	252.44	240.10	128.64	136.74	162.65	121.22	108.98	177.76				

Movement, Approach, & Intersection Results												
d_M, Delay for Movement [s/veh]	32.82	31.05	31.58	29.31	33.51	33.99	42.19	36.09	15.54	36.71	32.97	17.87
Movement LOS	C	C	C	C	C	C	D	D	B	D	C	B
d_A, Approach Delay [s/veh]											28.00	
Approach LOS	C				32.14		26.95				C	
d_I, Intersection Delay [s/veh]						30.26						
Intersection LOS						C						
Intersection V/C						0.628						

Other Modes															
g_Walk.mt, Effective Walk Time [s]	11.0		11.0		11.0		11.0								
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]	29.41		29.41		29.41		29.41								
I_p.lnt, Pedestrian LOS Score for Intersection	3.211		3.090		2.616		2.669								
Crosswalk LOS	C		C		B		C								
s_b_Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000								
c_b_Capacity of the bicycle lane [bicycles/h]	1450		1148		1145		1145								
d_b_Bicycle Delay [s]	3.00		7.21		7.25		7.25								
I_b.lnt, Bicycle LOS Score for Intersection	2.584		2.410		2.695		2.901								
Bicycle LOS	B		B		B		C								

Sequence															
Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SG: 1 53s		SG: 2 52s		SG: 102 32s		SG: 3 24s		SG: 4 ev 51s		SG: 104 35s					
SG: 5 41s		SG: 6 64s		SG: 106 33s		SG: 7 24s		SG: 8 ev 51s		SG: 108 35s					

Appendix G

Drive-Through Queuing Calculations



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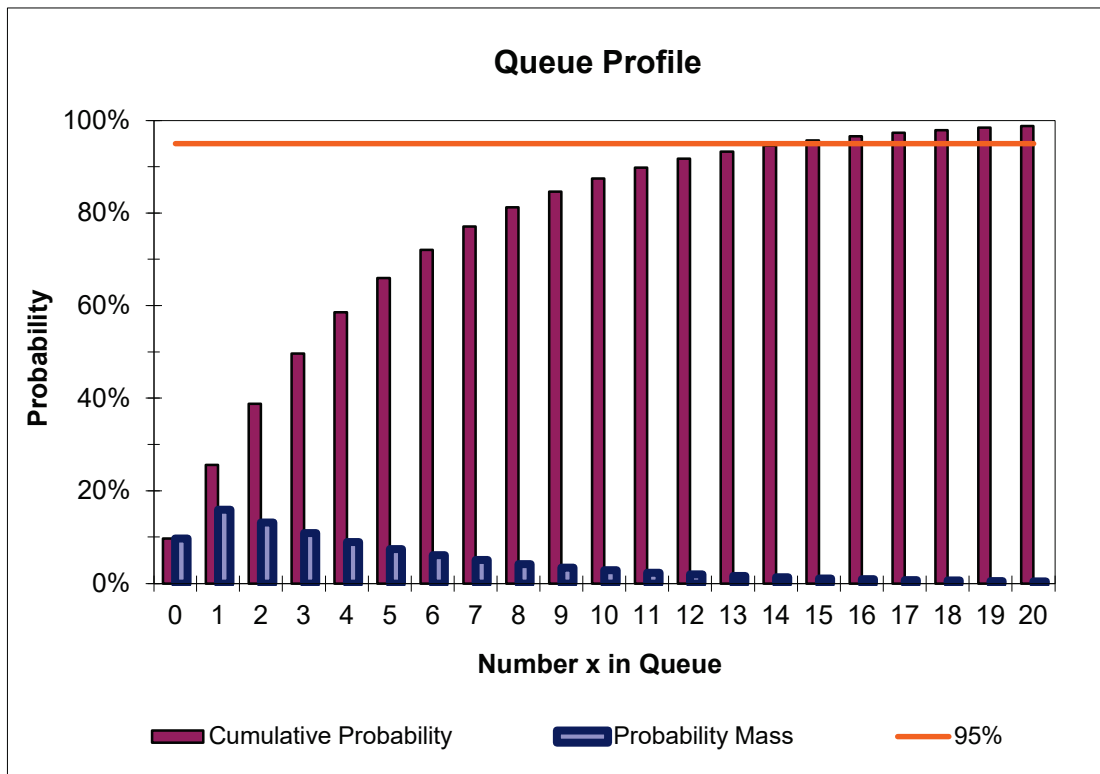
Drive Through Queuing Evaluation Worksheet

Project: Southern 4.4 ksf Restaurant Drive-Through
Project No: CLE032

By: NMS
Date: 8/5/2025

Arrival Rate (veh/hr):	99	No. of Service Points:	2
Service Rate (veh/hr):	60	Queuing Capacity (veh):	23

Probability the System is Empty	10%
Probability the System is Full	0%
Probability That Customer Waits	74%
Average Time Customer Waits	3.0 minutes
Average Time Customer Waits To Get To Service Point	2.0 minutes
Probability That a Customer Elects Not to Enter the Queue	0%
Average In System	5.0 vehicles
Average Total Length of Vehicles in System	124 feet
95th Percentile in System	15 vehicles
95th Percentile Total Length of Vehicles in System	375 feet



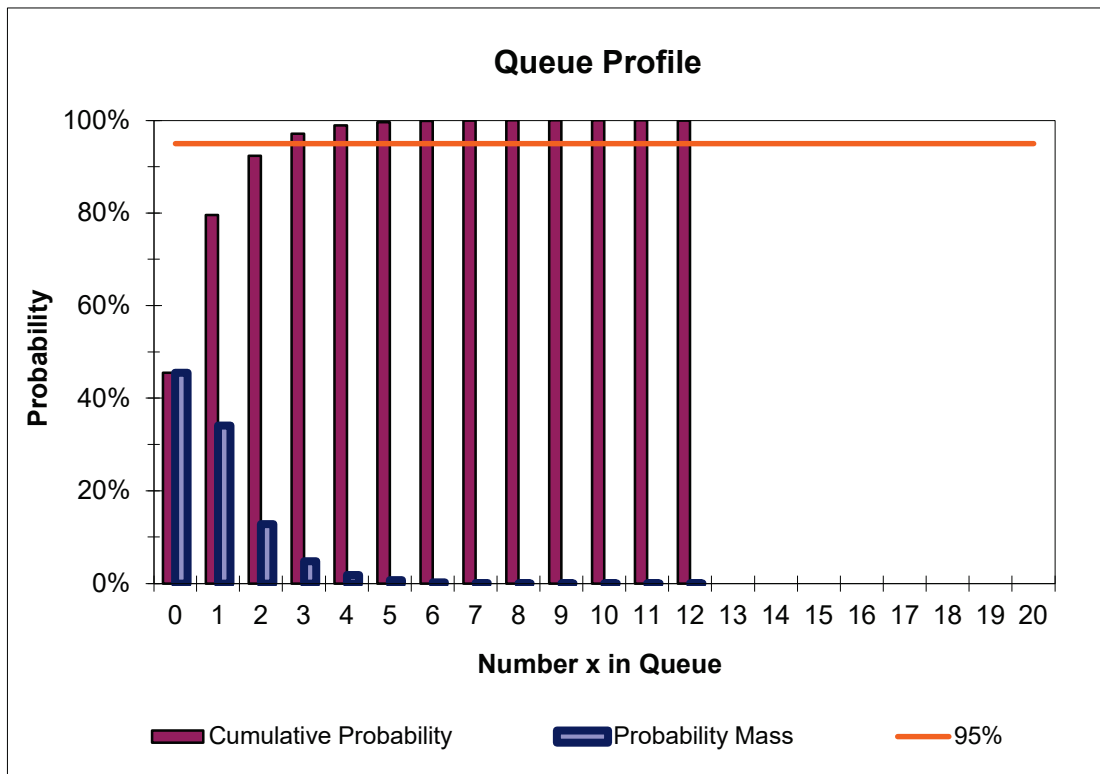
Drive Through Queuing Evaluation Worksheet

Project: Southern 2 ksf Restaurant Drive-Through
Project No: CLE032

By: NMS
Date: 8/5/2025

Arrival Rate (veh/hr):	45	No. of Service Points:	2
Service Rate (veh/hr):	60	Queuing Capacity (veh):	10

Probability the System is Empty	45%
Probability the System is Full	0%
Probability That Customer Waits	20%
Average Time Customer Waits	1.2 minutes
Average Time Customer Waits To Get To Service Point	< 1 minute
Probability That a Customer Elects Not to Enter the Queue	0%
Average In System	0.9 vehicles
Average Total Length of Vehicles in System	22 feet
95th Percentile in System	2 vehicles
95th Percentile Total Length of Vehicles in System	50 feet



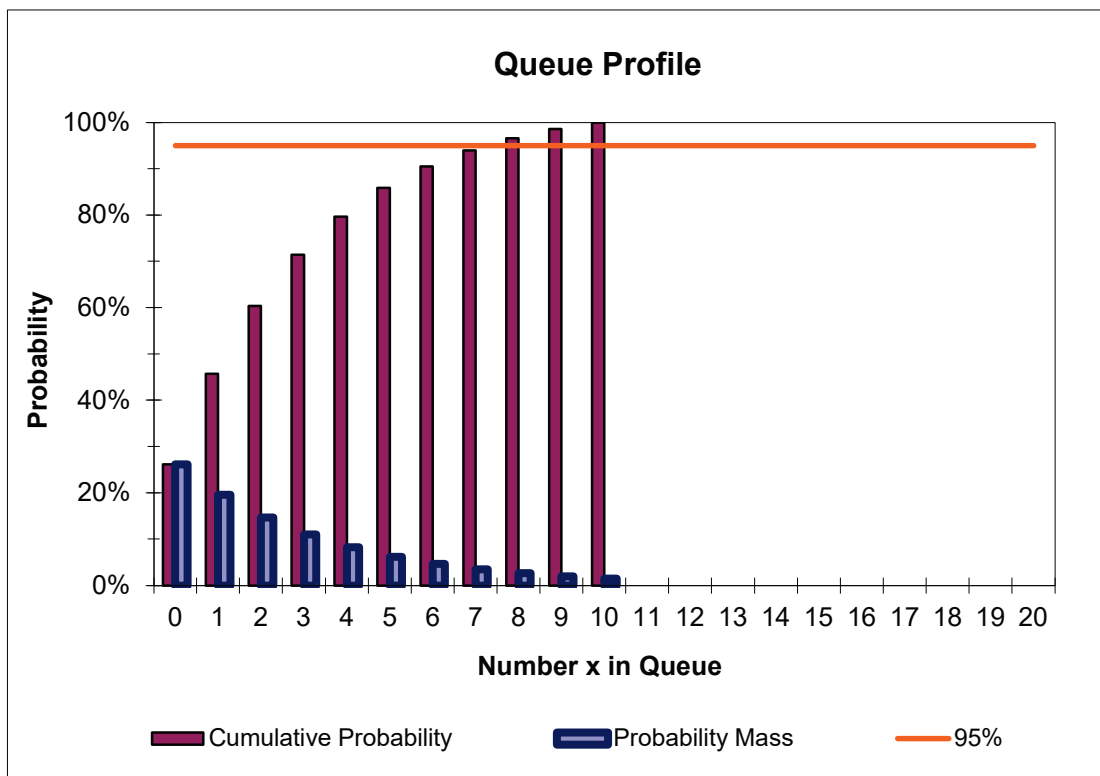
Drive Through Queuing Evaluation Worksheet

Project: 2 ksf Restaurant Drive-Through, S of 18th Ave
Project No: CLE032

By: NMS
Date: 8/5/2025

Arrival Rate (veh/hr):	45	No. of Service Points:	1
Service Rate (veh/hr):	60	Queuing Capacity (veh):	9

Probability the System is Empty	26%
Probability the System is Full	1%
Probability That Customer Waits	74%
Average Time Customer Waits	3.4 minutes
Average Time Customer Waits To Get To Service Point	2.4 minutes
Probability That a Customer Elects Not to Enter the Queue	1%
Average In System	2.5 vehicles
Average Total Length of Vehicles in System	63 feet
95th Percentile in System	7 vehicles
95th Percentile Total Length of Vehicles in System	175 feet



Drive Through Queuing Evaluation Worksheet

Project: 2 ksf Restaurant Drive-Through, N of 18th Ave
Project No: CLE032

By: NMS
Date: 8/5/2025

Arrival Rate (veh/hr):	45	No. of Service Points:	1
Service Rate (veh/hr):	60	Queuing Capacity (veh):	6

Probability the System is Empty	28%
Probability the System is Full	4%
Probability That Customer Waits	72%
Average Time Customer Waits	2.9 minutes
Average Time Customer Waits To Get To Service Point	1.9 minutes
Probability That a Customer Elects Not to Enter the Queue	4%
Average In System	2.1 vehicles
Average Total Length of Vehicles in System	53 feet
95th Percentile in System	5 vehicles
95th Percentile Total Length of Vehicles in System	125 feet

