Attachment C

Transportation Impact Study

Transportation Impact Study for the Airport Hotel Project

Prepared for the City of Clearlake

Submitted by
W-Trans

August 31, 2022

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Executive Summary

The proposed 75-room Fairfield Inn hotel would occupy approximately 2.8 acres of vacant land at the northern end of the former airport site in the City of Clearlake. The project would be expected to generate an average of 599 daily trips, with 35 new trips during the weekday a.m. peak hour and 44 trips during the weekday p.m. peak hour.

The project site would be accessed via a new 18th Avenue Extension, which would intersect Old Highway 53 to the west and connect to the existing terminus of 18th Avenue to the east. Sight lines on Old Highway 53 and 18th Avenue are adequate to accommodate all turns into and out of the proposed intersection and project driveway. To maintain clear sight lines, vision triangles at the access points should be kept free of obstructions.

As shown on the improvement plans, the design of the proposed new intersection at Old Highway 53/18th Avenue includes a marked crosswalk on the 18th Avenue leg, ADA-compliant curb ramps, a relocated bus stop to the north leg, a southbound left-turn lane on Old Highway 53 with 75 feet of stacking space, and overhead intersection lighting.

The projected 95th percentile queues in turn pockets at the SR 53/18th Avenue intersection would remain within existing storage capacity under all scenarios. Access for emergency vehicles and on-site circulation are expected to function acceptably with incorporation of applicable design standards into the site layout.

Bicycle parking on the project site should be supplied at a rate of 15 percent of the vehicle parking spaces, translating to 17 spaces for the proposed vehicle supply of 109 spaces. With the construction of sidewalks and Class II bike lanes on 18th Avenue Extension, the project site would be connected to the surrounding pedestrian and bicycle network, and access for pedestrians, bicyclists, and transit riders would be adequate.

Under guidance provided by the California Governor's Office of Planning and Research (OPR) as well as data contained in the *Senate Bill 743 Vehicle Miles Traveled Regional Baseline Study* for Lake County, hotel employees and guests would be expected to have a less-than-significant transportation impact on vehicle miles traveled (VMT).

To assess the project's compliance with General Plan policies, operations were evaluated at the existing SR 53/18th Avenue intersection as well as at the proposed Old Highway 53/18th Avenue Extension intersection. Analysis indicates the SR 53/18th Avenue study intersection is operating acceptably under Existing Conditions and would continue to do so under Baseline and Future Conditions, with and without project traffic added. The new intersection is also expected to operate acceptably under Existing, Baseline, and Future Conditions with project traffic added.

The proposed vehicle parking supply of 109 spaces would be four spaces short of meeting City requirements for the 75 proposed guest rooms and 2,300 square feet of meeting space; however, would be adequate with a shared parking reduction allowed by City Code. Given that national standard parking demand rates for business hotels translate to substantially fewer spaces than required by City Code, the City may wish to consider approving the project with a shared parking reduction.

Introduction

This report presents an analysis of the potential transportation impacts and operational effects that would be associated with the proposed hotel to be located at the northern end of the former airport site in the City of Clearlake. The transportation study was completed in accordance with the criteria established by the City of Clearlake, reflects a scope of work approved by City 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 CEQA, the City's General Plan, or other policies. This report provides an analysis of those items that are identified as areas of environmental concern under the California Environmental Quality Act (CEQA) and that, if significant, require an EIR. 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.

While no longer a part of the CEQA review process, vehicular traffic service levels at key intersections were evaluated for consistency with General Plan policies by determining the number of new trips that the proposed uses would be expected to generate, distributing these trips to the surrounding street system based on anticipated travel patterns specific to the proposed project, then analyzing the effect the new traffic would be expected to have on the study intersections and need for improvements to maintain acceptable operation. Adequacy of parking is also addressed as a policy issue.

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 and then evaluation of policy-related 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)?
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 project includes a 75-room Fairfield Inn hotel that would be operated by Marriott. As part of the project, 18th Avenue would be extended from its existing terminus on the west side of SR 53 along the project frontage to Old Highway 53, creating a new public street intersection between Old Highway 53 and 18th Avenue. As proposed, the new intersection would be stop-controlled on the terminating 18th Avenue approach and would include a southbound left-turn lane on Old Highway 53. The project site is located on approximately 2.8 acres of vacant land at the northern end of the former airport site in the City of Clearlake, as shown in Figure 1.

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Figure 1 – Study Area, Existing, and Proposed Lane Configurations

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, one of which is existing and another that would be a new intersection constructed as part of the project:

1. SR 53/18th Avenue (All Scenarios)
2. Old Highway 53/18th Avenue Extension (Project Conditions only)

Operating conditions during the weekday a.m. and p.m. peak periods were evaluated to capture the highest trip generation potential for the proposed use as well as 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. New turning movement counts were obtained for the existing study intersection in May 2022.

Study Intersections

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

Old Highway 53/18th Avenue Extension is a proposed tee intersection that would be constructed with the project approximately 320 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.

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

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 in May 2022, the roadway has an average daily traffic (ADT) volume of approximately 7,200 vehicles south of Lakeview Way.

Vehicle Collision History

The collision history for the existing study intersection of SR 53/18th Avenue was reviewed to determine any trends or patterns that may indicate a safety issue for motorists in the project vicinity. The collision rate, measured in collisions per million vehicles entering intersection (c/mve), was calculated based on records available from the California Highway Patrol (CHP) as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is January 1, 2017, through December 31, 2021.

The calculated collision rate for SR 53/18th Avenue was compared to the average collision rate for similar facilities statewide, as indicated in *2018 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).

During the five-year study period, a total of five collisions were reported at the intersection translating to a calculated collision rate of 0.13 c/mve, which is lower than the statewide average rate of 0.24 c/mve for similar facilities indicating that the intersection is performing within normal safety parameters. The collision rate calculation is provided in Appendix A.

Project Data

The proposed project includes a hotel with 75 rooms and approximately 2,300 square feet of meeting space to be located on an extension of 18th Avenue between SR 53 and Old Highway 53. A total of 109 parking spaces are indicated on the site plan. The project site plan is shown in Figure 2 and the proposed roadway improvements are shown in Figure 3.

Trip Generation

The anticipated trip generation for the project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 11th Edition, 2021 for "Hotel" (Land Use #310). As shown in Table 1, the project would be expected to result in an average of 599 trips per day, with 35 trips during the weekday a.m. peak hour and 44 trips during the weekday p.m. peak hour. As is the case with all standard trip generation rates, although the number of rooms is the independent variable, trips associated with all aspects of the use such as employees, deliveries, etc. are included in the rates and resulting trip estimates.

Table 1 – Trip Generation Summary

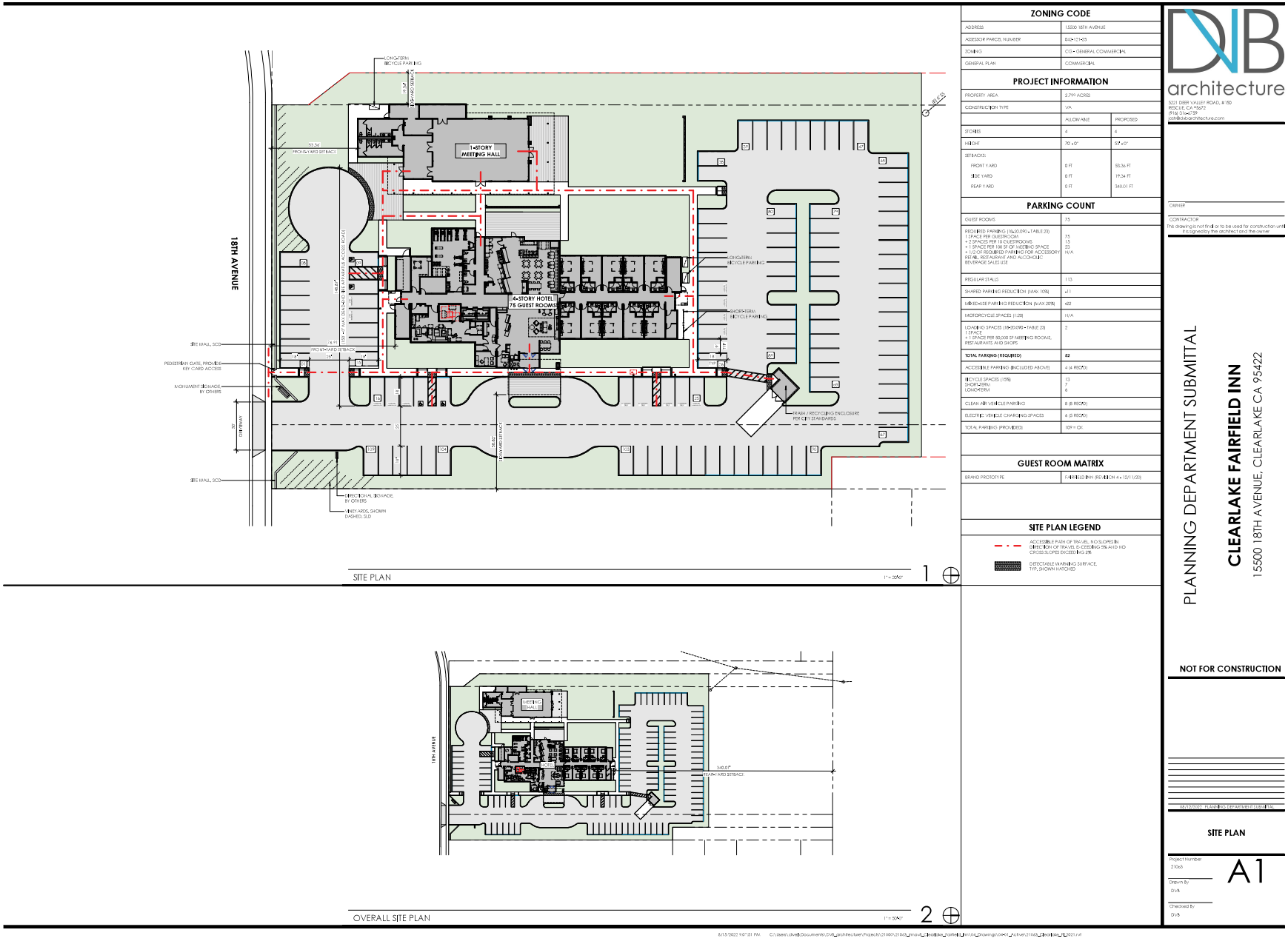
Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Hotel	75 rooms	7.99	599	0.46	35	19	16	0.59	44	22	22

Trip Distribution

The pattern used to allocate new project trips to the surrounding street network was determined by reviewing historical turning movements in the study area, knowledge of the area and surrounding region, and anticipated travel patterns for patrons of the project. The applied trip distribution assumptions approved by City and Caltrans staff and resulting daily trips are shown in Table 2.

Table 2 – Trip Distribution Assumptions

Route	Percent	Daily Trips
To/from North via Old Highway 53	20	120
To/from North via SR 53	40	239
To/from South via Old Highway 53	10	60
To/from South via SR 53	30	180
Total	**100%**	**599**



Source: DVB Architects 8/29

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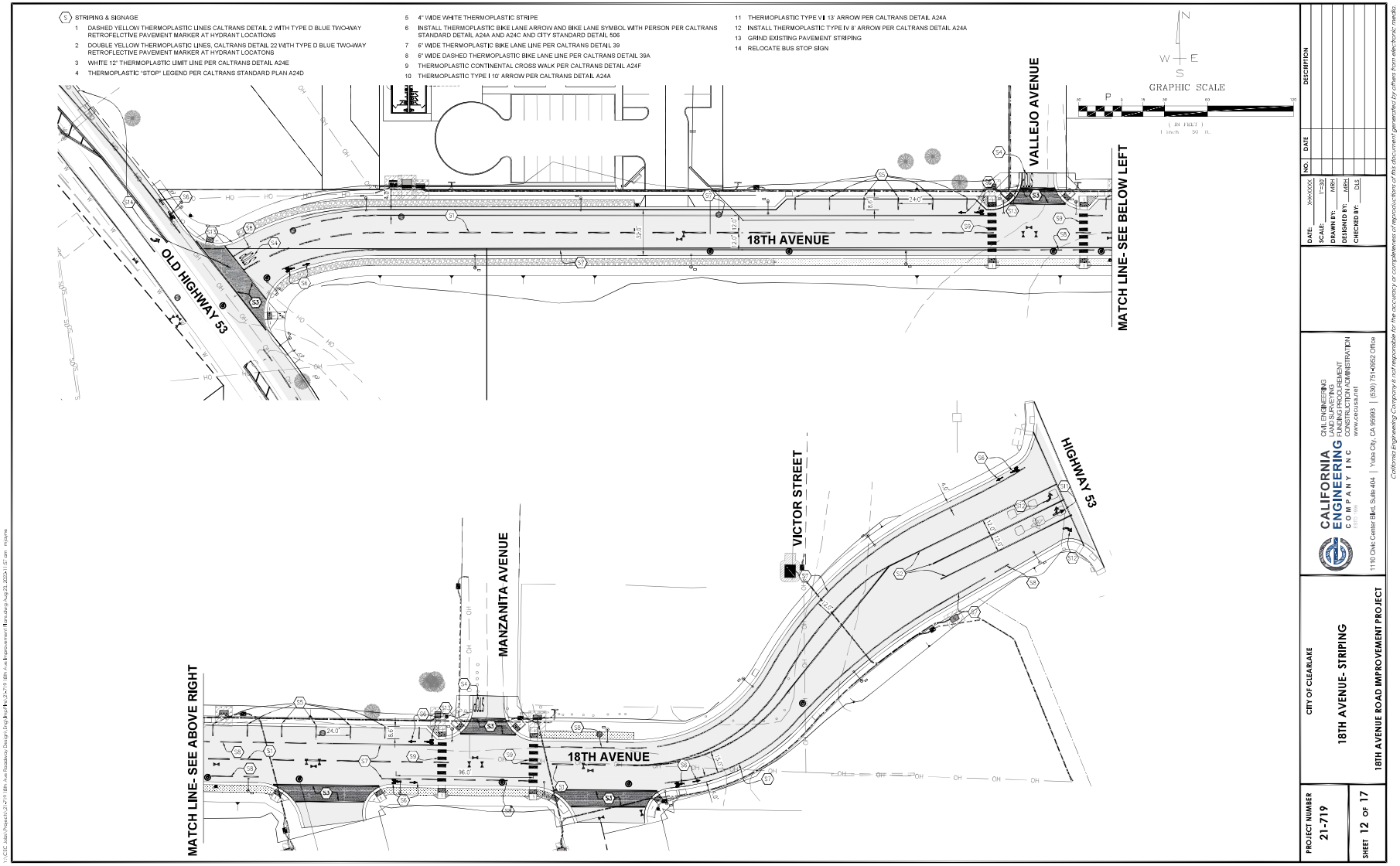
Figure 2 – Site Plan



Source: DVB Architects 8/29

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Figure 3 – Proposed Roadway Improvements

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.

Pedestrian 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 very limited. Sidewalk gaps along connecting roadways impact convenient and continuous access for pedestrians and may present safety concerns in those locations where appropriate pedestrian infrastructure would address potential conflict points.

- **Old Highway 53** – Intermittent coverage is provided on the west side of Old Highway 53 north of the project site. Lighting is not provided.
- **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.
- **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 intersection with 18th Avenue.

Pedestrian Safety

The collision history for the existing study intersection was reviewed to determine any trends or patterns that may indicate a safety issue for pedestrians in the vicinity of the project site. For the same five-year study period used for the vehicle collision analysis of January 1, 2017, through December 31, 2021, there was a single collision reported near SR 53/18th Avenue in November 2020 resulting in a pedestrian fatality. The collision involved a southbound motorist and an elderly westbound pedestrian crossing the south leg of the intersection. Because the pedestrian was deemed at fault and this was an isolated incident with no other pedestrian collisions occurring during the study period and even as far back as 10 years, it can reasonably be determined that the existing pedestrian facilities at the intersection consisting of crosswalks, pedestrian phasing, curb ramps, and overhead intersection lighting provide sufficient crossing measures for pedestrians.

Project Impacts on Pedestrian Facilities

Most hotel guests are expected to use a vehicle to reach the project site, though given the proximity of residential uses surrounding the site, it is reasonable to assume that some project employees may want to walk, bicycle, and/or use transit to travel between the project site and surrounding areas. Additionally, once the Airport property is redeveloped, there is potential for substantial pedestrian travel between the hotel and other commercial and restaurant uses within the Airport redevelopment site. Upon construction of sidewalks along both sides of the extension of 18th Avenue, as proposed, the project site would be connected to the existing and planned pedestrian network. A network of sidewalks would also be provided throughout the project site resulting in connected on-site pedestrian circulation. As shown on the site plan, the design of the Old Highway 53/18th Avenue intersection includes ADA-compliant curb ramps with a marked crosswalk on the stop-controlled 18th Avenue leg as well as overhead intersection lighting.

Finding – Upon constructing sidewalks along both sides of 18th Avenue Extension, the hotel would be connected to the surrounding pedestrian network.

Bicycle Facilities

Existing and Planned Bicycle Facilities

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

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the study area, Class II bike lanes exist on Old Highway 53 and segments of 18th Avenue, Phillips Avenue, Dam Road, and Garner Avenue. Additional Class II bike lanes are planned on Boyles Avenue. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area. Table 3 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *Active Transportation Plan for Lake County*, 2016.

Table 3 – Bicycle Facility Summary

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

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

Bicyclist Safety

Collision records for the study area were reviewed to determine if any bicyclist-involved crashes were reported. During the five-year study period between January 1, 2017, and December 31, 2021, there were no reported collisions involving bicyclists at SR 53/18th Avenue indicating that there are no readily apparent safety issues for cyclists.

Project Impacts on Bicycle Facilities

As part of the project, Class II bike lanes would be provided on the 18th Avenue Extension. These improvements together with existing bicycle lanes on Old Highway 53 and the planned facilities outlined in the County's *Active Transportation Plan* would provide adequate access for bicyclists.

Finding – Bicycle facilities serving the project site would be adequate with the planned provision of Class II bike lanes on 18th Avenue Extension.

Transit Facilities

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 10 operates Monday through Friday with approximately one-hour headways between 5:10 a.m. and 7:10 p.m. Route 11 provides loop service in the central portion of the City and stops on 18th Avenue near the intersection with SR 53. Route 11 operates Monday through Friday between 7:20 a.m. and 5:20 p.m.

Two bicycles can be carried on most Lake Transit buses. Bike rack space is 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.

Impact on Transit Facilities

Existing stops are within an acceptable walking distance of the site and would be reachable upon completion of the proposed sidewalk improvements. The proposed Old Highway 53/18th Avenue intersection would conflict with the location of an existing northbound Route 10 bus stop so the location of the bus stop would be relocated to the north leg of the new intersection. This improvement is indicated in the design plans for the new intersection.

Finding – Existing transit facilities serving the project site are adequate and the stop for Route 10 would operate acceptably upon relocation to the north leg of the new intersection of Old Highway 53/18th Avenue Extension, as proposed.

Vehicle Miles Traveled (VMT)

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

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 project was assessed individually considering the employee and guest uses separately.

Employee VMT

VMT impacts associated with employees of the proposed project were assessed based on guidance contained in the 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. 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.

The RBS includes a link to a web-based VMT screening tool in the appendix of the document that can be used to screen employment-based projects that are located in low VMT-generating areas. The tool uses data from the Wine Country Travel Demand Model (WCTDM) to compare the home-based VMT per worker for the Traffic Analysis Zone (TAZ) in which a study parcel is located to the same measure for the County as a whole. The tool projects the Countywide average baseline VMT per worker to be 12.3 miles per day in 2022. A project generating a VMT that is 15 percent or more below this value, or 10.5 miles per employee or less per day, would have a less-than-significant VMT impact.

The project site is located within TAZ 1915, which is bounded by Spruce Avenue to the west, Victor Street to the north, the proposed 18th Avenue Extension to the south, and Armijo Avenue to the east, and has a baseline VMT per employee of 6.8 miles per day. Because this per capita VMT ratio is below the significance threshold of 10.5 miles per day, the VMT generated by employees of the proposed project would be considered to have a less-than-significant VMT impact. A copy of the VMT screening tool output is provided in Appendix B and the VMT calculations are summarized in Table 4.

Table 4 – Employee Vehicle Miles Traveled Analysis Summary

VMT Metric	Baseline VMT Rate	Significance Threshold	Project VMT Rate	Resulting Significance
Employee VMT per Capita (Countywide Baseline)	12.3	10.5	6.8	Less than significant

Note: VMT is measured in daily miles driven per employee.

Finding – Employees of the proposed project would be expected to have a less-than-significant transportation impact on vehicle miles traveled.

Hotel Guest VMT

The OPR *Technical Advisory* does not specifically address hotel or visitor-based uses, 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 the project. Accordingly, guests of the proposed hotel project would be expected to result in a less-than-significant VMT impact.

Finding – Guests of the proposed hotel would be expected to have a less-than-significant transportation impact on vehicle miles traveled.

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 as well as the adequacy of stacking space in dedicated turn lanes at the study intersections to accommodate additional queuing due to adding project-generated trips. This section addresses the third bullet on the CEQA checklist which is whether or not 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

According to the site plan, the project site would be accessed via a driveway on the north side of the new 18th Avenue Extension. The driveway would be located approximately 300 feet east of the proposed Old Highway 53/18th Avenue Extension intersection.

Sight Distance

Sight distances along Old Highway 53 at the proposed intersection with 18th Avenue near J & L Market and along 18th Avenue at the project driveway 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, while recommended sight distances for minor street approaches that are either a private road or a driveway are based on stopping sight distance. Both use the approach travel speeds as the basis for determining the recommended sight distance. Additionally, the stopping sight distance needed for a following driver to stop if there is a vehicle waiting to turn into a side street or driveway is evaluated based on stopping sight distance criterion and the approach speed on the major street.

Field measurements were obtained at the location of the proposed intersection while sight lines at the project driveway were evaluated using the site plan.

Old Highway 53/18th Avenue Extension Intersection

For the posted speed limit of 35 mph on Old Highway 53, the minimum corner sight distance needed at the proposed intersection is 385 feet. Sight lines were field measured to extend approximately 400 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 right or stopped waiting to turn left onto 18th Avenue.

While sight lines are currently clear, care should be taken to maintain unobstructed sight lines during the design and construction of the proposed intersection and placement of signage, monuments, or other structures should be avoided within the sight triangles, which are denoted graphically in Plate 1. The Intersection Sight Distance (ISD) lengths should be based on corner sight distances of 385 feet.

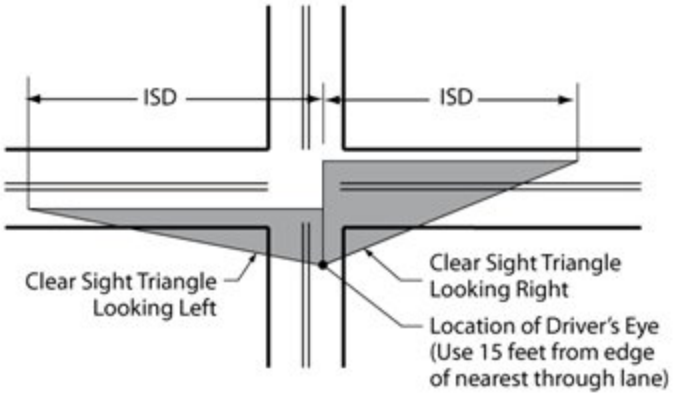

Plate 1 Vision Triangle Graphic

18th Avenue Extension Project Driveway

While 18th Avenue does not have a posted speed limit, travel speeds are anticipated to be 25 to 35 mph so a design speed of 35 mph was used to evaluate the adequacy of stopping sight distance at the proposed hotel driveway location. For speeds of 35 mph, the minimum stopping sight distance needed is 250 feet. Based on a review of the project site plan, it is anticipated that sight lines would extend at least 300 feet in each direction given the straight orientation of 18th Avenue, which would be more than adequate for anticipated travel speeds. Again, any roadside structures to be placed near the project driveway should not obstruct sight lines for motorists entering and exiting the hotel property.

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

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

Left-Turn Lane Warrants

The need for a left-turn lane on 18th Avenue Extension at the project driveway and on Old Highway 53 at the intersection with the 18th Avenue Extension 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.

Using Future plus Project volumes, which represent worst-case conditions, it was determined that a left-turn lane would not be warranted on 18th Avenue Extension at the project driveway. However, a left-turn lane would be warranted on Old Highway 53 at the intersection with 18th Avenue as shown on the improvement plans. Copies of the turn lane warrant spreadsheets are provided in Appendix C.

Left-Turn Lane Design Requirements

In order to determine the necessary storage length for the left-turn lane on Old Highway 53, the projected maximum left-turn queue was determined using a methodology contained in "Estimating Maximum Queue Length at Unsignalized Intersections," John T. Gard, *ITE Journal*, November 2001. Under Future plus Project

volumes, the maximum southbound left-turn queue on Old Highway 53 would be no more than three vehicles. Therefore, it is recommended that the storage be based on three passenger vehicles, or 75 feet. Copies of the queue length calculations are contained in Appendix C.

Finding – Volumes would not be sufficient to warrant installation of a left-turn lane on 18th Avenue Extension at the project driveway; however, volumes would be sufficient to meet the warrant at the Old Highway 53/18th Avenue Extension intersection.

Recommendation – The left-turn lane proposed for the southbound approach to Old Highway 53/18th Avenue Extension should provide a minimum of 75 feet of storage length.

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 the back of queue into a visually restricted area, such as a blind corner.

Signalized Intersection

Under each scenario, the projected 95th percentile queues in dedicated turn lanes at the signalized intersection of SR 53/18th Avenue were determined using the Vistro software. As summarized in Table 5, the existing turn lanes are expected to have adequate storage capacity to accommodate queuing under all scenarios. Copies of the queuing projections are contained in the Vistro output in Appendix D.

Table 5 – 95th Percentile Queues

Study Intersection Turn Lane	Available Storage	95th Percentile Queues											
		Weekday AM Peak Hour						Weekday PM Peak Hour					
		E	E+P	B	B+P	F	F+P	E	E+P	B	B+P	F	F+P
1. SR 53/18th Avenue													
NB Left Turn	675	2	16	2	17	64	118	1	21	1	22	71	142
SB Left Turn	720	21	27	22	29	37	50	21	29	23	31	43	62
WB Right Turn	160	24	31	25	32	24	63	25	32	26	34	48	68

Notes: 95th Percentile Queue based on Vistro output; all distances are measured in feet; E = Existing Conditions; E+P = Existing plus Project Conditions; B = Baseline Conditions; B+P = Baseline plus Project Conditions; F = Future Conditions; F+P = Future plus Project Conditions

Finding – The project would not be expected to cause any queues to exceed available storage or extend into an adjacent intersection, so the impact is considered less than significant.

Emergency Access

The final bullet on the CEQA checklist requires an evaluation as to whether the project would result in inadequate emergency access or not.

Adequacy of Site Access

Emergency response vehicles would access the project site from 18th Avenue Extension via the project driveway, which would have a width of 30 feet according to the preliminary site plan; this would be adequate to satisfy the required minimum driveway width of 24 feet set forth in the City of Clearlake's *Design and Construction Standards*. On-site circulation would include a 25-foot drive aisle, which also exceeds the minimum width of 24 feet. As the project moves through final design, it is anticipated that all aspects of the site including driveway widths and parking lot circulation 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 a minor increase in delay for traffic on SR 53 at the 18th Avenue intersection, 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 should also be 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.

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.

Capacity Analysis

Though not relevant to the CEQA review process, in keeping with General Plan policies, the potential for the project to effect traffic operation was evaluated.

Intersection Level of Service Methodologies

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

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

The Old Highway 53/18th Avenue Extension intersection is proposed to have stop control on the 18th Avenue approach so was evaluated using the "Two-Way Stop-Controlled" intersection capacity methodology from the HCM. This methodology determines a Level of Service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The study intersection of SR 53/18th Avenue is controlled by a traffic signal so was evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether the signals are coordinated or not, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. Delays were calculated using signal timing parameters obtained from Caltrans.

The ranges of delay associated with the various Levels of Service are indicated in Table 6.

Table 6 – Intersection Level of Service Criteria		
LOS	**Two-Way Stop-Controlled**	**Signalized**
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

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

Traffic Operation Standards

City of Clearlake

The City of Clearlake established a standard of LOS D for all intersections and roadways in Policy Cl 1.3.4 of *City of Clearlake 2040 General Plan Update,* City of Clearlake, 2017. Exceptions to this may be considered by the City Council when an unacceptable LOS (E or F) would result in clear public benefit. Such circumstances may include when improvements to achieve the LOS standard would result in impacts to unique historic resources or highly sensitive environmental areas; if right-of-way acquisition is infeasible; and/or if there are overriding economic or social circumstances.

Caltrans

While the SR 53/18th Avenue intersection is on a State highway, Caltrans does not have a standard of significance relative to operation as this is no longer a CEQA issue. The *Vehicle Miles Traveled-Focused Transportation Impact Study Guide* (TISG), published in May 2020, replaced the *Guide for the Preparation of Traffic Impact Studies*, 2002. As indicated in the TISG, the Department is transitioning away from requesting LOS or other vehicle operations analyses of land use projects and will instead focus on Vehicle Miles Traveled (VMT). Therefore, the City's standard of LOS D was applied to this intersection.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the weekday a.m. and weekday p.m. peak periods. This condition does not include project-generated traffic volumes. Volume data was collected in May 2022 during typical traffic conditions and while local schools were in session. Peak hour factors (PHFs) were calculated based on the counts obtained and used in the analysis.

The existing SR 53/18th Avenue intersection is currently operating acceptably at LOS B during both peak hours. The existing traffic volumes are shown in Figure 4. A summary of the intersection Level of Service calculations is contained in Table 7, and copies of the calculations for all evaluated scenarios are provided in Appendix D.

Table 7 – Existing Peak Hour Intersection Levels of Service

Study Intersection	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. SR 53/18th Ave	11.0	B	10.7	B

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

Baseline Conditions

Baseline (Existing plus Approved) operating conditions were determined with traffic from approved or pending projects in the study area that could be operational within the next five-year horizon added to the existing volumes. As directed by City staff, the following pending projects were included in the Baseline Conditions scenario:

- JS Market would be located on the west side of Old Highway 53 south of Lakeview Way and would consist of a 3,095 square-foot convenience store, 980 square feet of retail, 2,245 square feet of fast casual dining, and two dwelling units. ITE standard rates for "Convenience Store" (LU #851), "Strip Retail Plaza" (LU #822), "Fast Casual Restaurant" (LU #930), and "Multifamily Housing" (LU #220) were applied.

- A new gas station with six vehicle fueling positions, a self-service car wash, and a 2,800 square-foot convenience store would be constructed on Dam Road Extension. ITE standard rates for "Convenience Store/Gas Station" (LU #945) were applied, and pass-by trips were deducted.

- A drive-through window would be added to an existing 1,600 square-foot Subway restaurant located at 15060 Lakeshore Drive. ITE standard rates for "Fast-Food Restaurant" (LU #933) were applied.

- An unused Shell gasoline service station located at 15105 Lakeshore Drive would be remodeled and expanded for use with eight vehicle fueling positions. ITE standard rates for "Gasoline/Service Station" (LU #944) were applied, and pass-by trips were deducted.

The trip generation potential for the approved and pending Baseline projects are summarized in Table 8. Collectively, these projects are expected to result in 329 new trips on local streets during the a.m. peak hour and 371 new trips during the p.m. peak hour.

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Figure 4 – Existing, Baseline, and Future Traffic Volumes

W-Trans

Table 8 – Trip Generation Summary for Baseline Projects									
Land Use	**Units**	**AM Peak Hour**				**PM Peak Hour**			
Deduction		**Rate**	**Trips**	**In**	**Out**	**Rate**	**Trips**	**In**	**Out**
JS Market									
Convenience Store	3.095 ksf	62.54	194	97	97	49.11	152	78	74
Strip Retail Plaza	0.98 ksf	2.36	2	1	1	6.59	6	3	3
Fast Casual Restaurant	2.245 ksf	1.43	3	2	1	12.55	28	15	13
Multifamily Housing	2 du	0.40	1	0	1	0.51	1	1	0
JS Market Total			**200**	**100**	**100**		**187**	**97**	**90**
Convenience/Gas Station	5.95 ksf	40.59	242	121	121	48.48	288	144	144
Pass-By Trips		*-60%*	*-146*	*-73*	*-73*	*-56%*	*-162*	*-81*	*-81*
Convenience/Gas Station Total			**96**	**48**	**48**		**126**	**63**	**63**
Subway with Drive-Thru	1.6 ksf	45.42	73	37	36	32.65	52	27	25
Existing without Drive-Thru	*-1.6 ksf*	*43.87*	*-70*	*-42*	*-28*	*26.15*	*-42*	*-21*	*-21*
Subway with Drive-Thru Total			**3**	**-5**	**8**		**10**	**6**	**4**
Shell Gas Station	8 vfp	10.28	82	41	41	13.91	111	56	55
Pass-By Trips		*-64%*	*-52*	*-26*	*-26*	*-57%*	*-63*	*-32*	*-31*
Shell Gas Station Total			**30**	**15**	**15**		**48**	**24**	**24**
Total Baseline Trips			**329**	**158**	**171**		**371**	**190**	**181**

Notes: ksf = 1,000 square feet; du = dwelling units; vfp = vehicle fueling positions

Upon adding trips from approved or pending projects in the study area to existing volumes, the existing study intersection would continue to operate acceptably at LOS B. These results are summarized in Table 9 and Baseline traffic volumes are shown in Figure 4.

Table 9 – Baseline Peak Hour Intersection Levels of Service				
Study Intersection	**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**
1. SR 53/18th Ave	11.2	B	10.8	B

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

Future Conditions

Future volumes for the horizon year 2040, as developed for the *City of Clearlake 2040 General Plan Update* and the *Walmart Expansion Transportation Impact Analysis Report*, Omni-Means, 2016 were used to project future operating conditions at the existing study intersection. It should be noted that the General Plan analysis evaluated two scenarios for buildout, with and without the Dam Road Extension project. Since the Dam Road Extension project has already been constructed, volumes for this scenario were applied. Under these anticipated future volumes, the study intersection is expected to operate acceptably at LOS B during both peak hours. Future volumes are shown in Figure 4, and operating conditions are summarized in Table 10.

Table 10 – Future Peak Hour Intersection Levels of Service				
Study Intersection	**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**
1. SR 53/18th Ave	18.0	B	19.3	B

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

Project Conditions

The proposed 18th Avenue Extension would allow for passage between Old Highway 53 and SR 53 and would therefore be expected to redistribute some of the existing traffic in the area. Motorists traveling between SR 53 and the western part of the City could potentially use 18th Avenue as part of a faster route than through the SR 53/Lakeshore Drive intersection to the north or the SR 53/Old Highway 53-Dam Road intersection to the south. Therefore, under Project Conditions, in addition to assigning new project trips it was also assumed that 10 percent of the existing traffic entering or exiting the west legs of SR 53/Lakeshore Drive and SR 53/Old Highway 53 would be redistributed away from those intersections to the SR 53/18th Avenue and Old Highway 53/18th Avenue intersections. The volumes at these adjacent intersections used for rerouting trips through the proposed 18th Avenue Extension were obtained from the General Plan and Walmart traffic analysis since new turning movement counts were not collected at these intersections.

Existing plus Project Conditions

Upon the addition of trips associated with the proposed project to Existing volumes together with the diversion of existing traffic, the study intersections would be expected to continue operating acceptably during both peak hours. These results are summarized in Table 11. Project-only traffic volumes are shown in Figure 5, and Existing plus Project volumes are shown in Figure 6.

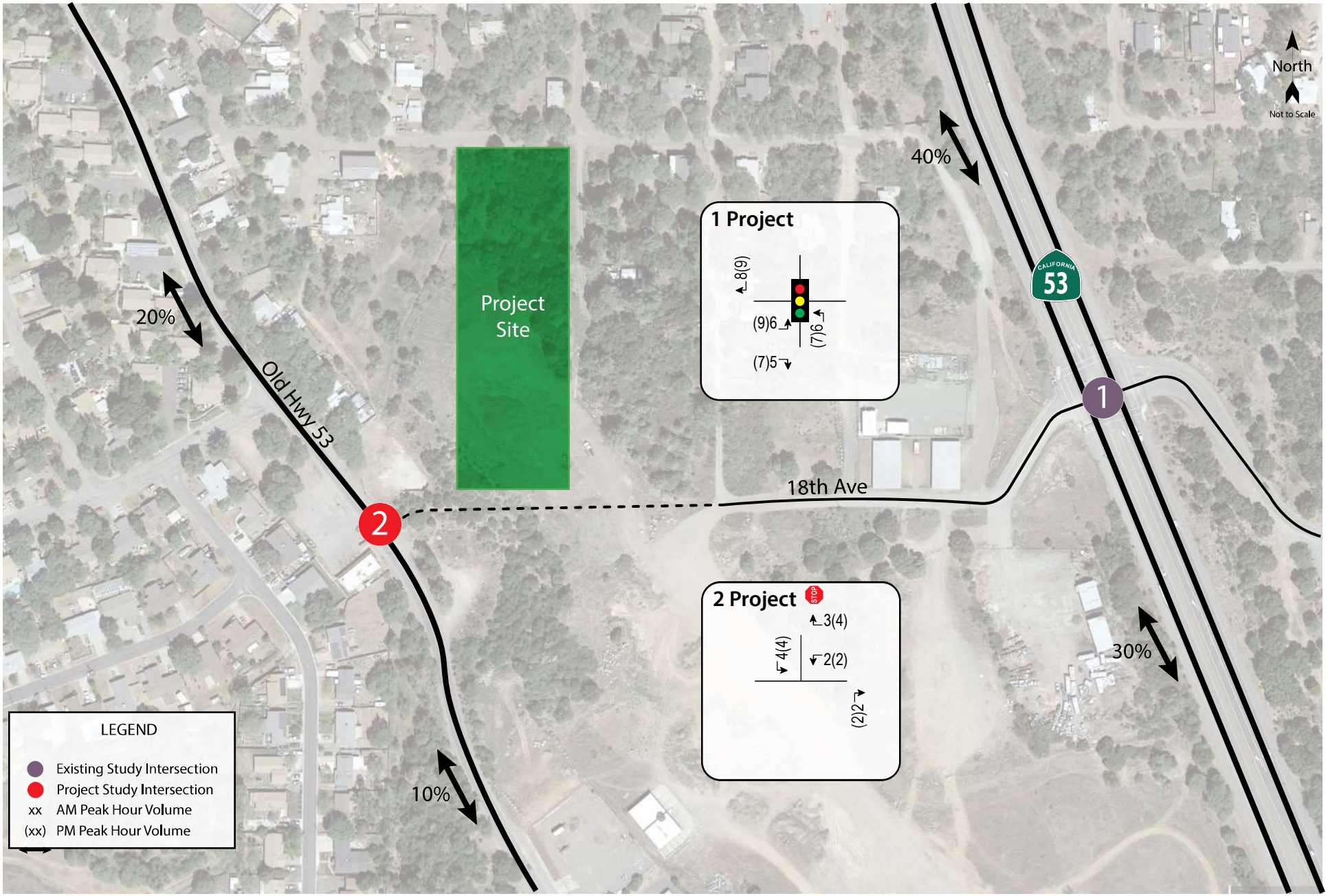

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Figure 5 – Project Traffic Volumes and Trip Distributions

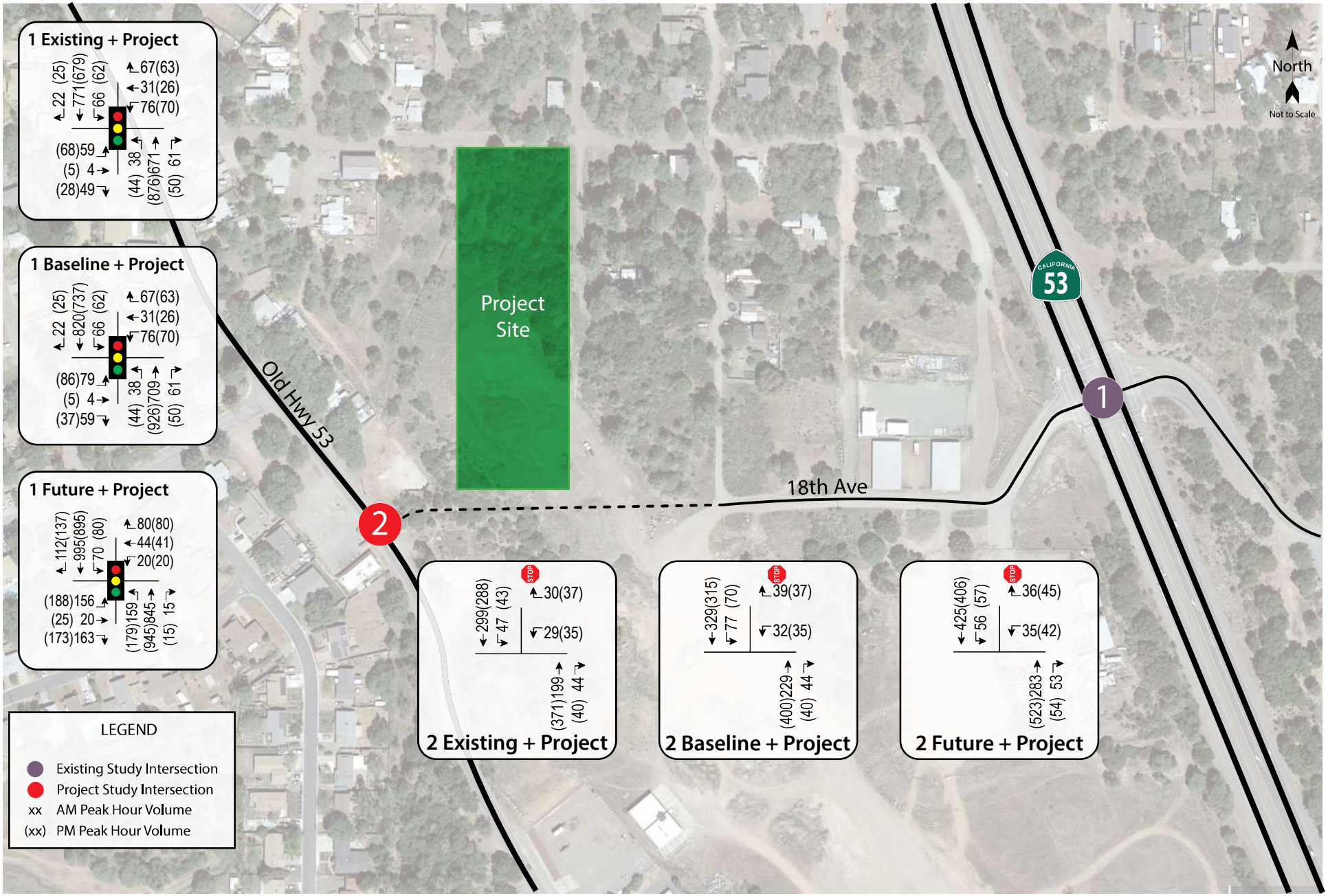

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Figure 6 – Existing plus Project, Baseline plus Project, and Future plus Project Traffic Volumes

Table 11 – Existing and Existing plus Project Peak Hour Intersection Levels of Service								
Study Intersection ***Approach***	**Existing Conditions**				**Existing plus Project**			
	AM Peak		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1. SR 53/18th Ave	11.0	B	10.7	B	15.1	B	15.0	B
2. Old Hwy 53/18th Ave Extension	-	-	-	-	1.8	A	1.8	A
Westbound (18th Ave) Approach	-	-	-	-	*13.2*	*B*	*15.1*	*C*

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

Finding – The study intersections would continue to operate acceptably upon the addition of traffic associated with the proposed project to existing volumes; therefore, the project would have an acceptable effect on operation of the surrounding roadway network.

Baseline plus Project Conditions

With project-related traffic added to the near-term Baseline volumes, the study intersections are expected to continue operating acceptably at LOS A or B overall and LOS B or C on the side-street approach. These results are summarized in Table 12 and Baseline plus Project volumes are shown in Figure 6.

Table 12 – Baseline and Baseline plus Project Peak Hour Intersection Levels of Service								
Study Intersection ***Approach***	**Baseline Conditions**				**Baseline plus Project**			
	AM Peak		**PM Peak**		**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1. SR 53/18th Ave	11.2	B	10.8	B	15.7	B	15.5	B
2. Old Hwy 53/18th Ave Extension	-	-	-	-	2.1	A	2.1	A
Westbound (18th Ave) Approach	-	-	-	-	*15.1*	*B*	*17.1*	*C*

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

Finding – The study intersections are expected to operate acceptably upon the addition of traffic associated with the proposed project to Baseline volumes; therefore, the project would have an acceptable effect on operation of the surrounding roadway network.

Future plus Project Conditions

Upon the addition of project-generated traffic to the anticipated future volumes, the study intersections are expected to continue operating acceptably. The Future plus Project operating conditions are summarized in Table 13 and volumes are shown in Figure 6.

Table 13 – Future and Future plus Project Peak Hour Intersection Levels of Service

Study Intersection *Approach*	Future Conditions				Future plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. SR 53/18th Ave	18.0	B	19.3	B	24.2	C	27.3	C
2. Old Hwy 53/18th Ave Extension	-	-	-	-	1.7	A	2.0	A
Westbound (18th Ave) Approach	-	-	-	-	*14.7*	*B*	*20.2*	*C*

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

Finding – The study intersections are expected to operate acceptably under Future plus Project conditions; therefore, the project's cumulative effect on operation of the surrounding roadway network would be considered acceptable.

Parking

As proposed, the project would have 109 parking spaces on-site. Jurisdiction parking supply requirements are based on the City of Clearlake Municipal Code, Chapter 18-20.090; Parking Space Requirements. Vehicle parking for hotels is required at a rate of 1.2 spaces per guest room in addition to one space per 100 square feet of meeting floor area. This translates to a required parking supply of 113 spaces, making the proposed supply of 109 spaces short by four spaces.

The City's requirements and proposed parking supply are summarized in Table 14.

Table 14 – Parking Analysis Summary

Land Use	Units	City Requirements	
		Rate	Spaces Required
Hotel (Guest Rooms)	75 rms	1.2 spaces per room	90
Meeting Space	2,300 sf	1 space per 100 sf	23
Supply Required per Code			**113**
Proposed Supply			109

Notes: rms = rooms; sf = square feet

Because the proposed supply would be four spaces short of satisfying City code requirements, consideration was given to the anticipated parking demand that would be expected based on standard parking rates developed by ITE in *Parking Generation Manual*, 5th Edition, 2019. Using rates for the "Business Hotel" land use, which would be most applicable to the proposed project, the average and peak parking demands are expected to be 54 and 63 spaces, respectively, on weekdays and less on weekend days. Given that the ITE peak parking demand for the hotel component is anticipated to be 27 spaces fewer than required by City Code, and the project is only four spaces short, it would be reasonable for the City to consider approving the project with fewer spaces than required by standard City rates. City Code allows for a shared parking reduction of 10 percent, which if applied, would reduce the required supply to 102 spaces, which the proposed parking supply exceeds.

Based on requirements stipulated by the Federal Accessibility Guidelines, five accessible stalls, including one van-accessible stall, must be supplied for a vehicle parking supply between 100 and 150 spaces.

Finding – The proposed vehicle parking supply of 109 spaces would be four spaces short of meeting standard City code requirements, though would exceed the minimum requirement with application of a shared parking reduction of 10 percent, as allowed by City Code.

Recommendation – Given that national standard ITE parking demand rates for a business hotels translate to substantially fewer spaces than required by City Code, the City may wish to consider approving the project with a shared parking reduction.

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 109 spaces, a minimum of 17 bicycle parking spaces would need to be provided.

Recommendation – Bicycle parking should be supplied at a rate of 15 percent of the vehicle parking spaces, resulting in a need for 17 bike spaces based on a vehicle supply of 109 spaces.

Conclusions and Recommendations

Conclusions

CEQA Issues

- The proposed project has the potential to result in an average of 599 trips per day, with 35 trips during the weekday a.m. peak hour and 44 new trips during the weekday p.m. peak hour.
- The calculated collision rate for the intersection of SR 53/18th Avenue was determined to be lower than the statewide average rate, indicating that there are no readily apparent safety issues for motorists in the vicinity of the project site.
- Upon constructing sidewalks along 18th Avenue Extension and within the project site itself, the project would be connected to the existing and planned pedestrian network.
- Bicycle facilities serving the project site would be adequate with the planned provision of Class II bike lanes on 18th Avenue Extension.
- Existing transit facilities serving the project site are adequate and would continue to be adequate with the proposed relocation of an existing bus stop on the east side of Old Highway 53 to the north leg of the proposed intersection with 18th Avenue Extension.
- The proposed hotel is anticipated to result in a less-than-significant transportation impact on VMT for both guests and employees.
- Sight lines on Old Highway 53 and 18th Avenue are adequate to accommodate all turns into and out of the proposed intersection and driveway.
- A left-turn lane would be warranted on Old Highway 53 at the intersection with 18th Avenue Extension.
- The project would have a less-than-significant impact on queuing in dedicated turn lanes at the signalized intersection of SR 53/18th Avenue.
- 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.

Policy Issues

- All existing and proposed study intersections are expected to operate at acceptable Levels of Service under Existing, near-term Baseline, and Future conditions without and with the addition of trips from the proposed project assuming implementation of side-street stop controls at the proposed Old Highway 53/18th Avenue Extension intersection.
- The proposed parking supply of 109 spaces would be four spaces short of meeting standard City code requirements, though would be more than adequate to meet the anticipated demand based on application of standard parking rates, and could be approved with application of a shared parking reduction of 10 percent, as allowed by City Code.

Recommendations

CEQA Issues

- Bicycle parking should be supplied at a rate of 15 percent of the required vehicle parking spaces. Based on the proposal of 109 vehicle spaces, this would result in need for 17 bicycle spaces.

- To maintain adequate sight lines on Old Highway 53 and 18th Avenue, any new signage, monuments, or other structures should be kept out of the vision triangles at the access points.

Policy Issues

- Given that national standard ITE parking demand rates for a business hotels translate to substantially fewer spaces than required by City Code, the City may wish to consider approving the project with a shared parking reduction.

Study Participants and References

Study Participants

Principal in Charge	Dalene J. Whitlock, PE, PTOE
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Appendix A

Collision Rate Calculations

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Intersection Collision Rate Worksheet

Airport Hotel

Intersection # 1: SR 53 & 18th Ave
Date of Count: Saturday, January 00, 1900

Number of Collisions: 5
Number of Injuries: 1
Number of Fatalities: 1
Average Daily Traffic (ADT): 21900
Start Date: January 1, 2017
End Date: December 31, 2021
Number of Years: 5

Intersection Type: Four-Legged
Control Type: Signals
Area: Urban

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

$$\text{Collision Rate} = \frac{5 \times 1{,}000{,}000}{21{,}900 \times 365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.13 c/mve**	**20.0%**	**20.0%**
Statewide Average*	**0.24 c/mve**	**0.5%**	**46.9%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2018 Collision Data on California State Highways, Caltrans

Intersection # 2: &
Date of Count: Saturday, January 00, 1900

Number of Collisions: 0
Number of Injuries: 0
Number of Fatalities: 0
Average Daily Traffic (ADT): 0
Start Date: January 0, 1900
End Date: January 0, 1900
Number of Years: 0

Intersection Type: 0
Control Type: 0
Area: 0

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

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

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	**0.00 c/mve**	**0.0%**	**0.0%**
Statewide Average*	**0.26 c/mve**	**1.5%**	**41.4%**

Notes
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2018 Collision Data on California State Highways, Caltrans

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Appendix B

VMT Screening Tool Output

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Screening Results

Screening Inputs

Criteria	Input
VMT Metric	Home-based Work VMT per Worker
Baseline Year	2022
Threshold (% reduction from Baseline Year)	Countywide Benchmark (-15%)

Legend

Category	Color
Selected Project Area	
Traffic Analysis Zone ID	
Low VMT Generating TAZs	

Project Location

Project Proximity to Output Low VMT Generating TAZs

Passed

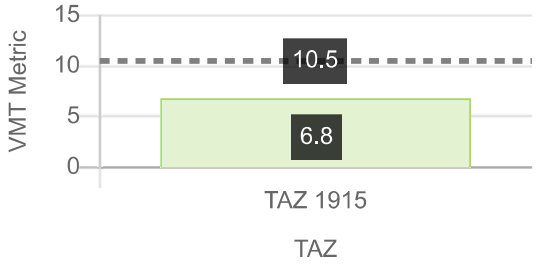
Screening Questions	Results
Within a low VMT generating TAZ?	Yes (Pass)

Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.

Traffic Analysis Zone (TAZ) Details

TAZ Questions	TAZ ID: 1915
Jurisdiction	Clearlake
TAZ VMT	6.8
Countywide Average VMT	12.3
% Difference	-44.7%
VMT Metric	Home-based Work VMT per Worker
Threshold	10.5

Threshold Evaluation



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Appendix C

Turn Lane Warrants and Queuing Spreadsheet

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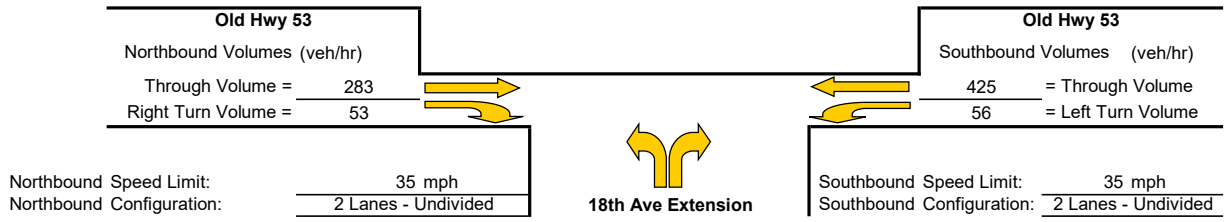
Turn Lane Warrant Analysis - Tee Intersections

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

Direction of Analysis Street: North/South
Cross Street Intersects: From the East



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

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

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 =	652.5
Advancing Volume	Va =	336
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

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	370
Advancing Volume	Va =	336
If AV<Va then warrant is met		No

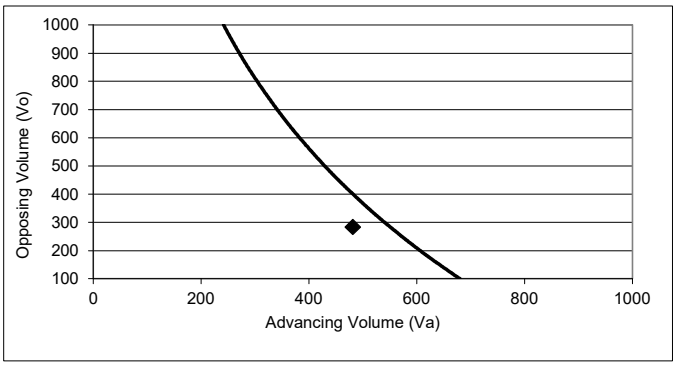
Right Turn Taper Warranted: **NO**

Southbound Left Turn Lane Warrants

Percentage Left Turns %lt 11.6 %

Advancing Volume Threshold AV 551 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 / 18th Ave Extension
Study Scenario: Baseline plus Project PM

Direction of Analysis Street: North/South
Cross Street Intersects: From the East

Old Hwy 53
Northbound Volumes (veh/hr)
Through Volume = 400
Right Turn Volume = 40

Old Hwy 53
Southbound Volumes (veh/hr)
315 = Through Volume
70 = Left Turn Volume

18th Ave Extension

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

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

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 =	750
Advancing Volume	Va =	440
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

Thresholds not met, continue to next step

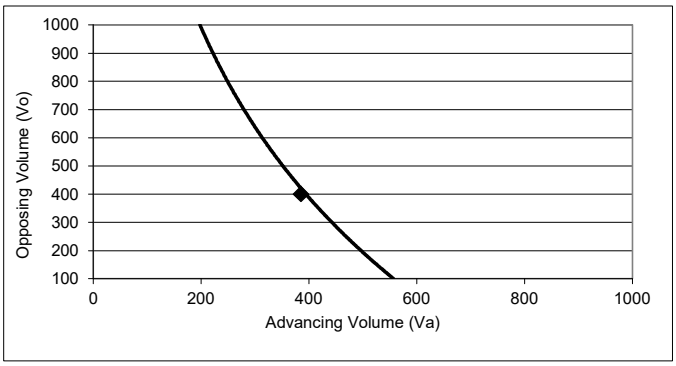
2. Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	500
Advancing Volume	Va =	440
If AV<Va then warrant is met		No

Right Turn Taper Warranted: **NO**

Southbound Left Turn Lane Warrants

Percentage Left Turns %lt 18.2 %
Advancing Volume Threshold AV 394 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

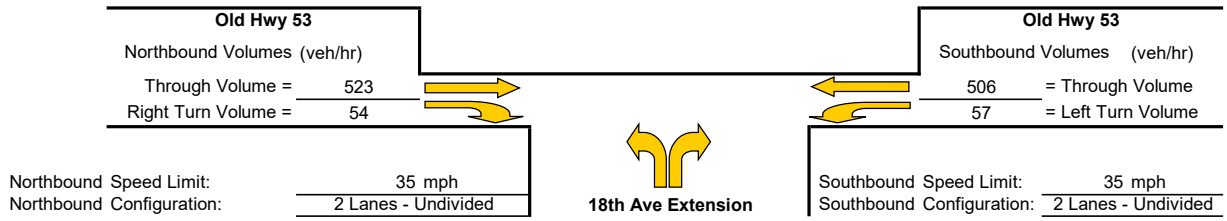
Left Turn Lane Warranted: **NO**

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 / 18th Ave Extension
Study Scenario: Future plus Project PM

Direction of Analysis Street: North/South
Cross Street Intersects: From the East



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

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

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 =	645
Advancing Volume	Va =	577
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

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	360
Advancing Volume	Va =	577
If AV<Va then warrant is met		Yes

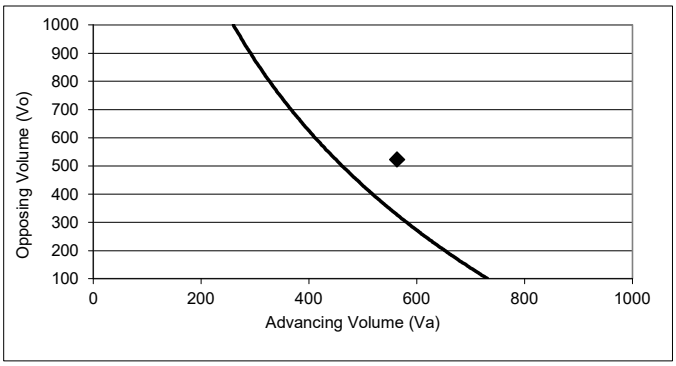
Right Turn Taper Warranted: **YES**

Southbound Left Turn Lane Warrants

Percentage Left Turns %lt 10.1 %

Advancing Volume Threshold AV 450 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

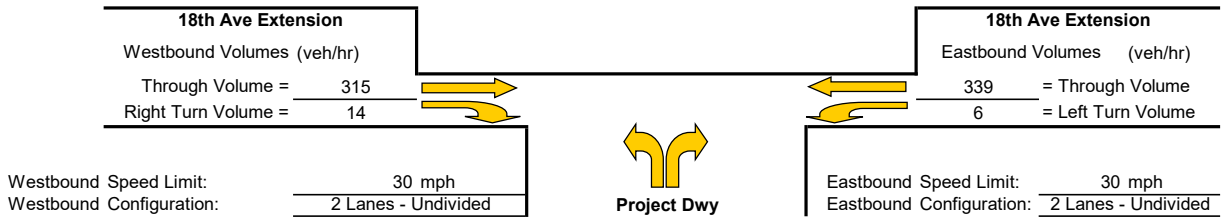
Left Turn Lane Warranted: **YES**

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: 18th Ave Extension / Project Dwy
Study Scenario: Future plus Project AM

Direction of Analysis Street: East/West
Cross Street Intersects: From the North



Westbound Speed Limit: 30 mph
Westbound Configuration: 2 Lanes - Undivided

Eastbound Speed Limit: 30 mph
Eastbound Configuration: 2 Lanes - Undivided

Westbound 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 =	945.1
Advancing Volume	Va =	329
If AV<Va then warrant is met		No

Right Turn Lane Warranted: **NO**

Westbound 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 =	329
If AV<Va then warrant is met		-

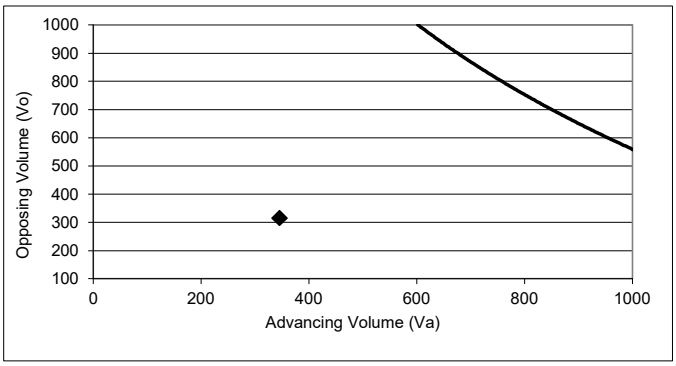
Right Turn Taper Warranted: **NO**

Eastbound Left Turn Lane Warrants

Percentage Left Turns %lt 1.7 %

Advancing Volume Threshold AV 1325 veh/hr

If AV<Va then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 30 mph

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

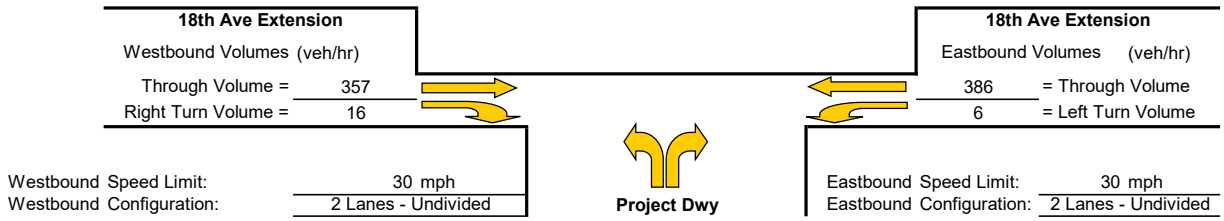
Left Turn Lane Warranted: **NO**

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: 18th Ave Extension / Project Dwy
Study Scenario: Future plus Project PM

Direction of Analysis Street: East/West
Cross Street Intersects: From the North



Westbound Speed Limit: 30 mph
Westbound Configuration: 2 Lanes - Undivided

Eastbound Speed Limit: 30 mph
Eastbound Configuration: 2 Lanes - Undivided

Westbound 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 =	930.1
Advancing Volume	Va =	373
If AV<Va then warrant is met		No

Right Turn Lane Warranted: **NO**

Westbound 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 =	373
If AV<Va then warrant is met		-

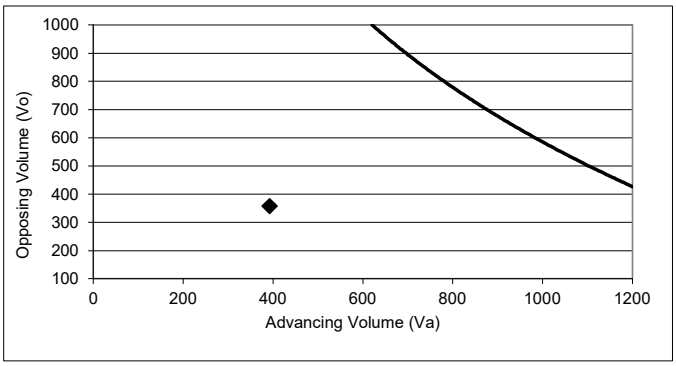
Right Turn Taper Warranted: **NO**

Eastbound Left Turn Lane Warrants

Percentage Left Turns %lt 1.5 %

Advancing Volume Threshold AV 1300 veh/hr

If AV<Va then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 30 mph

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

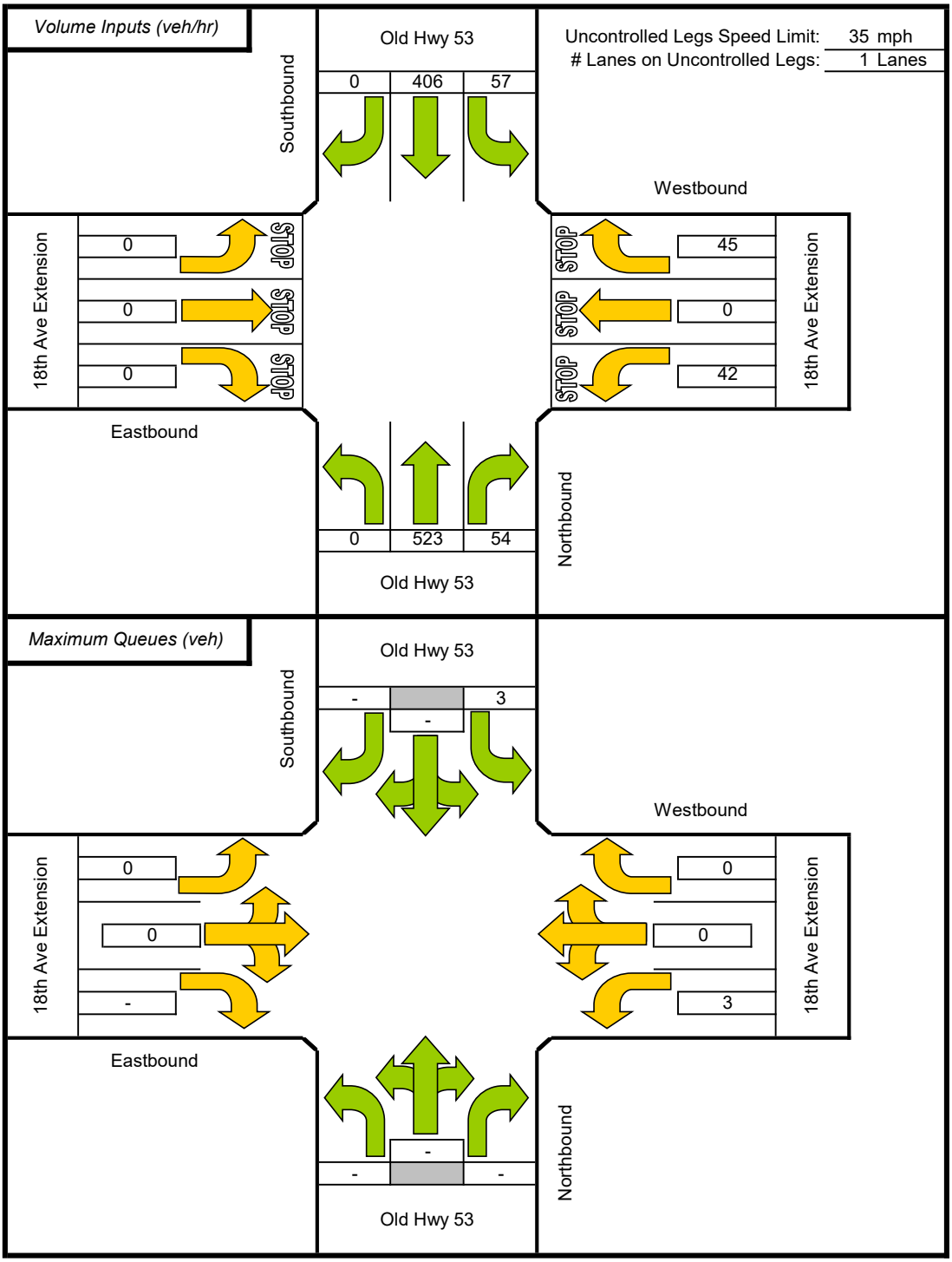
Left Turn Lane Warranted: **NO**

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.

Maximum Queue Length
Two-Way Stop-Controlled Intersections

Through Street: Old Hwy 53
Side Street: 18th Ave Extension

Scenario: Future plus Project PM
Stop Controlled Legs: East/West



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

Appendix D

Intersection Level of Service and Queuing Calculations

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Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.365

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	5	671	61	66	771	5	3	4	9	76	13	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	671	61	66	771	5	3	4	9	76	13	67
Peak Hour Factor	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970
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	187	17	18	215	1	1	1	3	21	4	19
Total Analysis Volume [veh/h]	6	748	68	74	860	6	3	4	10	85	14	75
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	R
C, Cycle Length [s]	45	45	45	45	45	45	45	45	45
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
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
I2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_i, Effective Green Time [s]	6	17	17	9	21	21	7	11	11
g / C, Green / Cycle	0.13	0.39	0.39	0.21	0.47	0.47	0.15	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.00	0.25	0.25	0.05	0.26	0.26	0.01	0.06	0.05
s, saturation flow rate [veh/h]	1603	1683	1634	1603	1683	1679	1513	1614	1431
c, Capacity [veh/h]	204	655	636	338	795	793	221	411	364
d1, Uniform Delay [s]	17.18	11.13	11.13	14.68	8.43	8.43	16.57	13.31	13.18
k, delay calibration	0.04	0.11	0.11	0.04	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
d2, Incremental Delay [s]	0.02	1.02	1.05	0.12	0.59	0.59	0.15	0.30	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
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	0.03	0.63	0.63	0.22	0.55	0.55	0.08	0.24	0.21
d, Delay for Lane Group [s/veh]	17.20	12.14	12.18	14.80	9.01	9.01	16.72	13.61	13.46
Lane Group LOS	B	B	B	B	A	A	B	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.04	2.16	2.10	0.46	1.62	1.62	0.14	0.71	0.53
50th-Percentile Queue Length [ft/ln]	1.06	53.92	52.54	11.54	40.56	40.47	3.56	17.72	13.36
95th-Percentile Queue Length [veh/ln]	0.08	3.88	3.78	0.83	2.92	2.91	0.26	1.28	0.96
95th-Percentile Queue Length [ft/ln]	1.91	97.05	94.57	20.78	73.00	72.84	6.40	31.90	24.04

Movement, Approach, & Intersection Results

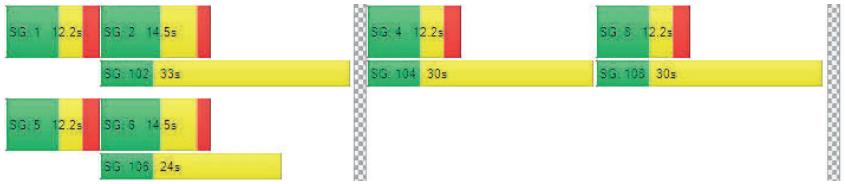
d_M, Delay for Movement [s/veh]	17.20	12.16	12.18	14.80	9.01	9.01	16.72	16.72	16.72	13.61	13.61	13.46
Movement LOS	B	B	B	B	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	12.20			9.47			16.72			13.54		
Approach LOS	B			A			B			B		
d_I, Intersection Delay [s/veh]	11.04											
Intersection LOS	B											
Intersection V/C	0.365											

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]	12.76	12.76	12.76	12.76
l_p,int, Pedestrian LOS Score for Intersection	2.895	2.891	1.695	2.004
Crosswalk LOS	C	C	A	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]	357	357	312	312
d_b, Bicycle Delay [s]	15.13	15.13	15.96	15.96
l_b,int, Bicycle LOS Score for Intersection	2.238	2.335	1.588	1.847
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	10.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.407

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	2	876	50	62	679	3	0	5	3	70	8	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	876	50	62	679	3	0	5	3	70	8	63
Peak Hour Factor	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090
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	241	14	17	187	1	0	1	1	19	2	17
Total Analysis Volume [veh/h]	2	964	55	68	747	3	0	6	3	77	9	69
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	R
C, Cycle Length [s]	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
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
l2, Clearance Lost Time [s]	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	21	21	9	25	25	6	11	11
g / C, Green / Cycle	0.11	0.44	0.44	0.20	0.52	0.52	0.13	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.00	0.31	0.31	0.04	0.22	0.22	0.01	0.05	0.05
s, saturation flow rate [veh/h]	1603	1683	1651	1603	1683	1681	1589	1611	1431
c, Capacity [veh/h]	181	738	724	316	880	879	200	383	340
d1, Uniform Delay [s]	18.75	10.80	10.80	16.02	6.98	6.98	18.30	14.61	14.53
k, delay calibration	0.04	0.11	0.11	0.04	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
d2, Incremental Delay [s]	0.01	1.20	1.22	0.12	0.33	0.33	0.09	0.29	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.01	0.70	0.70	0.22	0.43	0.43	0.04	0.22	0.20
d, Delay for Lane Group [s/veh]	18.76	12.00	12.03	16.15	7.30	7.31	18.39	14.91	14.82
Lane Group LOS	B	B	B	B	A	A	B	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.02	2.76	2.71	0.48	1.18	1.18	0.08	0.68	0.55
50th-Percentile Queue Length [ft/ln]	0.40	68.96	67.78	11.94	29.58	29.54	2.08	17.07	13.68
95th-Percentile Queue Length [veh/ln]	0.03	4.97	4.88	0.86	2.13	2.13	0.15	1.23	0.99
95th-Percentile Queue Length [ft/ln]	0.71	124.13	122.00	21.49	53.24	53.18	3.75	30.72	24.63

Movement, Approach, & Intersection Results

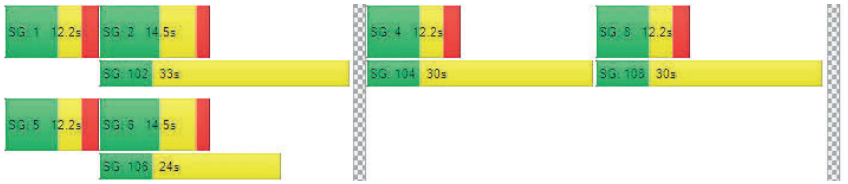
d_M, Delay for Movement [s/veh]	18.76	12.01	12.03	16.15	7.31	7.31	18.39	18.39	18.39	14.91	14.91	14.82
Movement LOS	B	B	B	B	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	12.03			8.04			18.39			14.87		
Approach LOS	B			A			B			B		
d_I, Intersection Delay [s/veh]	10.65											
Intersection LOS	B											
Intersection V/C	0.407											

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]	14.03	14.03	14.03	14.03
I_p,int, Pedestrian LOS Score for Intersection	2.924	2.925	1.689	1.996
Crosswalk LOS	C	C	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]	337	337	295	295
d_b, Bicycle Delay [s]	16.43	16.43	17.27	17.27
I_b,int, Bicycle LOS Score for Intersection	2.402	2.234	1.574	1.815
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	11.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.384

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	5	671	61	66	771	5	3	4	9	76	13	67
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	58	0	0	59	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	729	61	66	830	5	3	4	9	76	13	67
Peak Hour Factor	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970
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	17	18	231	1	1	1	3	21	4	19
Total Analysis Volume [veh/h]	6	813	68	74	925	6	3	4	10	85	14	75
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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

Generated with PTV VISTRO Airport Hotel Project 6/29/2022
Version 2021 (SP 0-6)

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	46	46	46	46	46	46	46	46	46
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
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
I2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_i, Effective Green Time [s]	6	19	19	10	22	22	7	11	11
g / C, Green / Cycle	0.12	0.40	0.40	0.21	0.49	0.49	0.14	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.00	0.27	0.27	0.05	0.28	0.28	0.01	0.06	0.05
s, saturation flow rate [veh/h]	1603	1683	1638	1603	1683	1679	1513	1614	1431
c, Capacity [veh/h]	198	679	661	330	817	816	216	400	355
d1, Uniform Delay [s]	17.84	11.21	11.22	15.30	8.47	8.47	17.22	13.95	13.82
k, delay calibration	0.04	0.11	0.11	0.04	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
d2, Incremental Delay [s]	0.02	1.09	1.12	0.13	0.63	0.63	0.15	0.32	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.03	0.66	0.66	0.22	0.57	0.57	0.08	0.25	0.21
d, Delay for Lane Group [s/veh]	17.86	12.31	12.34	15.43	9.10	9.10	17.37	14.27	14.11
Lane Group LOS	B	B	B	B	A	A	B	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.04	2.42	2.36	0.49	1.81	1.81	0.15	0.75	0.56
50th-Percentile Queue Length [ft/ln]	1.12	60.43	58.96	12.25	45.22	45.13	3.72	18.71	14.10
95th-Percentile Queue Length [veh/ln]	0.08	4.35	4.25	0.88	3.26	3.25	0.27	1.35	1.02
95th-Percentile Queue Length [ft/ln]	2.01	108.77	106.13	22.04	81.40	81.23	6.70	33.69	25.38

Movement, Approach, & Intersection Results

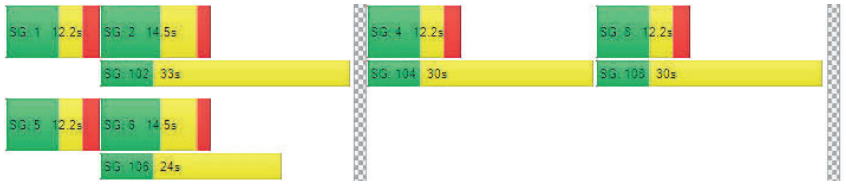
d_M, Delay for Movement [s/veh]	17.86	12.32	12.34	15.43	9.10	9.10	17.37	17.37	17.37	14.27	14.27	14.11
Movement LOS	B	B	B	B	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	12.36			9.56			17.37			14.20		
Approach LOS	B			A			B			B		
d_I, Intersection Delay [s/veh]	11.21											
Intersection LOS	B											
Intersection V/C	0.384											

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]	13.41	13.41	13.41	13.41
l_p,int, Pedestrian LOS Score for Intersection	2.943	2.939	1.697	2.006
Crosswalk LOS	C	C	A	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]	346	346	303	303
d_b, Bicycle Delay [s]	15.79	15.79	16.63	16.63
l_b,int, Bicycle LOS Score for Intersection	2.291	2.389	1.588	1.847
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	10.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.429

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	2	876	50	62	679	3	0	5	3	70	8	63
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	68	0	0	67	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	944	50	62	746	3	0	5	3	70	8	63
Peak Hour Factor	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090
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	260	14	17	205	1	0	1	1	19	2	17
Total Analysis Volume [veh/h]	2	1039	55	68	821	3	0	6	3	77	9	69
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	R
C, Cycle Length [s]	49	49	49	49	49	49	49	49	49
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
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
l2, Clearance Lost Time [s]	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	22	22	9	27	27	6	11	11
g / C, Green / Cycle	0.11	0.46	0.46	0.19	0.54	0.54	0.12	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.00	0.33	0.33	0.04	0.24	0.24	0.01	0.05	0.05
s, saturation flow rate [veh/h]	1603	1683	1653	1603	1683	1681	1589	1611	1431
c, Capacity [veh/h]	175	767	753	308	906	905	194	371	330
d1, Uniform Delay [s]	19.65	10.91	10.91	16.86	6.98	6.98	19.17	15.47	15.38
k, delay calibration	0.04	0.11	0.11	0.04	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
d2, Incremental Delay [s]	0.01	1.29	1.31	0.13	0.36	0.36	0.10	0.32	0.31
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	0.01	0.72	0.72	0.22	0.46	0.46	0.05	0.23	0.21
d, Delay for Lane Group [s/veh]	19.66	12.19	12.22	16.99	7.34	7.34	19.27	15.78	15.69
Lane Group LOS	B	B	B	B	A	A	B	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.02	3.10	3.05	0.51	1.35	1.35	0.09	0.73	0.58
50th-Percentile Queue Length [ft/ln]	0.42	77.57	76.36	12.80	33.82	33.78	2.20	18.20	14.59
95th-Percentile Queue Length [veh/ln]	0.03	5.59	5.50	0.92	2.43	2.43	0.16	1.31	1.05
95th-Percentile Queue Length [ft/ln]	0.76	139.63	137.45	23.03	60.87	60.80	3.96	32.76	26.26

Movement, Approach, & Intersection Results

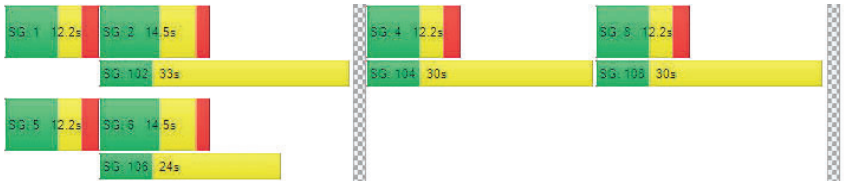
d_M, Delay for Movement [s/veh]	19.66	12.21	12.22	16.99	7.34	7.34	19.27	19.27	19.27	15.78	15.78	15.69
Movement LOS	B	B	B	B	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	12.22			8.07			19.27			15.74		
Approach LOS	B			A			B			B		
d_I, Intersection Delay [s/veh]	10.78											
Intersection LOS	B											
Intersection V/C	0.429											

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]	14.89	14.89	14.89	14.89
I_p,int, Pedestrian LOS Score for Intersection	2.979	2.980	1.692	1.998
Crosswalk LOS	C	C	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]	324	324	284	284
d_b, Bicycle Delay [s]	17.31	17.31	18.16	18.16
I_b,int, Bicycle LOS Score for Intersection	2.464	2.296	1.574	1.815
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	18.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.606

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	120	845	15	70	995	90	90	20	115	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
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	845	15	70	995	90	90	20	115	20	25	80
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	211	4	18	249	23	23	5	29	5	6	20
Total Analysis Volume [veh/h]	120	845	15	70	995	90	90	20	115	20	25	80
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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

Generated with PTV VISTRO Airport Hotel Project 6/29/2022
Version 2021 (SP 0-6)

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65
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
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
I2, Clearance Lost Time [s]	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	29	29	10	27	27	14	11	11
g / C, Green / Cycle	0.18	0.44	0.44	0.16	0.42	0.42	0.22	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.07	0.26	0.26	0.04	0.33	0.33	0.15	0.03	0.06
s, saturation flow rate [veh/h]	1603	1683	1673	1603	1683	1634	1516	1646	1431
c, Capacity [veh/h]	283	745	741	254	715	694	336	292	254
d1, Uniform Delay [s]	23.72	13.50	13.50	23.97	15.90	15.91	23.03	22.50	23.19
k, delay calibration	0.04	0.11	0.11	0.04	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
d2, Incremental Delay [s]	0.38	0.71	0.72	0.22	1.79	1.85	2.32	0.24	0.70
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	0.42	0.58	0.58	0.28	0.77	0.77	0.67	0.15	0.32
d, Delay for Lane Group [s/veh]	24.10	14.22	14.22	24.18	17.69	17.76	25.35	22.75	23.89
Lane Group LOS	C	B	B	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.42	3.61	3.59	0.83	5.50	5.36	3.14	0.57	1.05
50th-Percentile Queue Length [ft/ln]	35.57	90.27	89.74	20.63	137.55	134.06	78.59	14.21	26.36
95th-Percentile Queue Length [veh/ln]	2.56	6.50	6.46	1.49	9.35	9.16	5.66	1.02	1.90
95th-Percentile Queue Length [ft/ln]	64.02	162.49	161.54	37.14	233.73	229.01	141.46	25.57	47.45

Movement, Approach, & Intersection Results

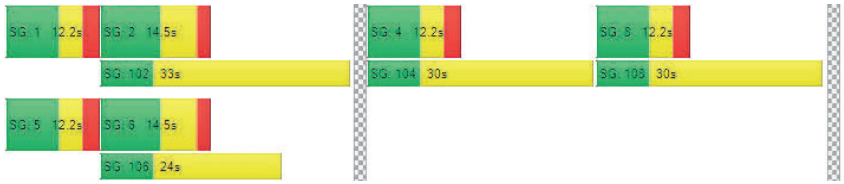
d_M, Delay for Movement [s/veh]	24.10	14.22	14.22	24.18	17.72	17.76	25.35	25.35	25.35	22.75	22.75	23.89
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	15.43			18.11			25.35			23.48		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	17.98											
Intersection LOS	B											
Intersection V/C	0.606											

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]	22.21	22.21	22.21	22.21
l_p,int, Pedestrian LOS Score for Intersection	3.036	3.057	1.921	1.997
Crosswalk LOS	C	C	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]	248	248	217	217
d_b, Bicycle Delay [s]	24.77	24.77	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	2.368	2.512	1.931	1.766
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	19.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.616

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	130	945	15	80	895	110	110	25	130	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
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	945	15	80	895	110	110	25	130	20	20	80
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	236	4	20	224	28	28	6	33	5	5	20
Total Analysis Volume [veh/h]	130	945	15	80	895	110	110	25	130	20	20	80
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65
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
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
l2, Clearance Lost Time [s]	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	27	27	11	26	26	16	11	11
g / C, Green / Cycle	0.18	0.42	0.42	0.16	0.40	0.40	0.25	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.08	0.29	0.29	0.05	0.30	0.30	0.17	0.02	0.06
s, saturation flow rate [veh/h]	1603	1683	1674	1603	1683	1619	1520	1642	1431
c, Capacity [veh/h]	284	701	697	260	676	650	374	287	250
d1, Uniform Delay [s]	24.06	15.56	15.56	24.12	16.79	16.80	22.46	22.77	23.53
k, delay calibration	0.04	0.11	0.11	0.04	0.11	0.11	0.12	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
d2, Incremental Delay [s]	0.43	1.20	1.21	0.25	1.77	1.84	2.78	0.22	0.73
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	0.46	0.69	0.69	0.31	0.76	0.76	0.71	0.14	0.32
d, Delay for Lane Group [s/veh]	24.49	16.77	16.78	24.36	18.56	18.64	25.24	22.99	24.26
Lane Group LOS	C	B	B	C	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.57	4.64	4.62	0.96	5.34	5.16	3.74	0.51	1.07
50th-Percentile Queue Length [ft/ln]	39.27	116.05	115.46	23.88	133.58	128.93	93.54	12.77	26.76
95th-Percentile Queue Length [veh/ln]	2.83	8.18	8.14	1.72	9.13	8.88	6.73	0.92	1.93
95th-Percentile Queue Length [ft/ln]	70.68	204.38	203.57	42.99	228.36	222.04	168.37	22.99	48.18

Movement, Approach, & Intersection Results

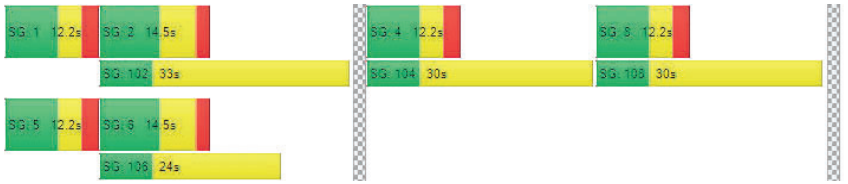
d_M, Delay for Movement [s/veh]	24.49	16.77	16.78	24.36	18.59	18.64	25.24	25.24	25.24	22.99	22.99	24.26
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.69			19.02			25.24			23.84		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	19.33											
Intersection LOS	B											
Intersection V/C	0.616											

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]	22.49	22.49	22.49	22.49
I_p,int, Pedestrian LOS Score for Intersection	3.045	3.076	1.953	2.000
Crosswalk LOS	C	C	A	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]	246	246	215	215
d_b, Bicycle Delay [s]	25.06	25.06	25.94	25.94
I_b,int, Bicycle LOS Score for Intersection	2.459	2.455	1.997	1.758
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.448

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	5	671	61	66	771	5	3	4	9	76	13	67
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]	27	0	0	0	0	9	50	0	35	0	18	0
Site-Generated Trips [veh/h]	6	0	0	0	0	8	6	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	671	61	66	771	22	59	4	49	76	31	67
Peak Hour Factor	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970
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]	11	187	17	18	215	6	16	1	14	21	9	19
Total Analysis Volume [veh/h]	42	748	68	74	860	25	66	4	55	85	35	75
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	R
C, Cycle Length [s]	52	52	52	52	52	52	52	52	52
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
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
I2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_i, Effective Green Time [s]	8	19	19	10	21	21	11	12	12
g / C, Green / Cycle	0.16	0.37	0.37	0.19	0.40	0.40	0.21	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.03	0.25	0.25	0.05	0.26	0.26	0.08	0.07	0.05
s, saturation flow rate [veh/h]	1603	1683	1634	1603	1683	1666	1524	1625	1431
c, Capacity [veh/h]	260	623	605	304	669	662	325	369	325
d1, Uniform Delay [s]	18.74	13.68	13.68	17.91	12.84	12.84	17.53	16.77	16.39
k, delay calibration	0.04	0.11	0.11	0.04	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
d2, Incremental Delay [s]	0.11	1.23	1.26	0.15	1.15	1.16	0.74	0.51	0.36
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	0.16	0.66	0.66	0.24	0.67	0.67	0.38	0.33	0.23
d, Delay for Lane Group [s/veh]	18.85	14.91	14.95	18.06	13.98	13.99	18.27	17.28	16.75
Lane Group LOS	B	B	B	B	B	B	B	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.35	2.99	2.91	0.61	3.03	3.01	1.22	1.12	0.68
50th-Percentile Queue Length [ft/ln]	8.87	74.75	72.78	15.17	75.85	75.15	30.43	28.00	17.12
95th-Percentile Queue Length [veh/ln]	0.64	5.38	5.24	1.09	5.46	5.41	2.19	2.02	1.23
95th-Percentile Queue Length [ft/ln]	15.97	134.54	131.00	27.30	136.53	135.27	54.77	50.40	30.82

Movement, Approach, & Intersection Results

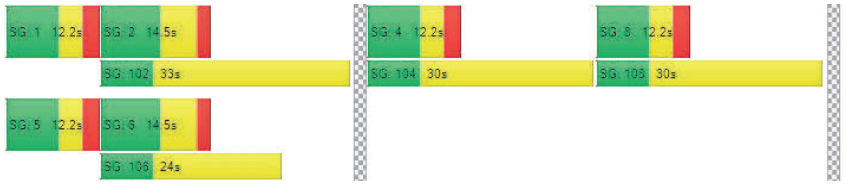
d_M, Delay for Movement [s/veh]	18.85	14.92	14.95	18.06	13.99	13.99	18.27	18.27	18.27	17.28	17.28	16.75
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	15.12			14.30			18.27			17.08		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	15.12											
Intersection LOS	B											
Intersection V/C	0.448											

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]	16.09	16.09	16.09	16.09
l_p,int, Pedestrian LOS Score for Intersection	2.933	2.929	1.794	2.020
Crosswalk LOS	C	C	A	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]	309	309	270	270
d_b, Bicycle Delay [s]	18.54	18.54	19.40	19.40
l_b,int, Bicycle LOS Score for Intersection	2.267	2.351	1.766	1.881
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 2: Old Hwy 53/18th Ave Extension

Control Type:	Two-way stop	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.091

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	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		18th Ave Extension	
Base Volume Input [veh/h]	199	0	0	299	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	42	43	0	27	27
Site-Generated Trips [veh/h]	0	2	4	0	2	3
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]	199	44	47	299	29	30
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	13	14	88	9	9
Total Analysis Volume [veh/h]	234	52	55	352	34	35
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	0.09	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.95	0.00	15.78	10.74
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.14	0.14	0.47	0.47
95th-Percentile Queue Length [ft/ln]	0.00	0.00	3.38	3.38	11.73	11.73
d_A, Approach Delay [s/veh]	0.00		1.07		13.22	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.77					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.485

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	2	876	50	62	679	3	0	5	3	70	8	63
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]	35	0	0	0	0	13	59	0	18	0	18	0
Site-Generated Trips [veh/h]	7	0	0	0	0	9	9	0	7	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	876	50	62	679	25	68	5	28	70	26	63
Peak Hour Factor	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	241	14	17	187	7	19	1	8	19	7	17
Total Analysis Volume [veh/h]	48	964	55	68	747	28	75	6	31	77	29	69
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	R
C, Cycle Length [s]	56	56	56	56	56	56	56	56	56
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
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
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_i, Effective Green Time [s]	9	23	23	10	24	24	11	12	12
g / C, Green / Cycle	0.16	0.42	0.42	0.18	0.43	0.43	0.20	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.03	0.31	0.31	0.04	0.23	0.23	0.07	0.07	0.05
s, saturation flow rate [veh/h]	1603	1683	1651	1603	1683	1662	1555	1624	1431
c, Capacity [veh/h]	255	704	691	281	731	722	305	341	300
d1, Uniform Delay [s]	20.41	13.63	13.63	19.90	11.66	11.66	19.49	18.70	18.37
k, delay calibration	0.04	0.11	0.11	0.04	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
d2, Incremental Delay [s]	0.13	1.48	1.50	0.16	0.61	0.61	0.74	0.51	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
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	0.19	0.73	0.73	0.24	0.53	0.53	0.37	0.31	0.23
d, Delay for Lane Group [s/veh]	20.54	15.11	15.14	20.07	12.27	12.27	20.22	19.22	18.75
Lane Group LOS	C	B	B	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.46	4.00	3.93	0.64	2.54	2.51	1.22	1.11	0.71
50th-Percentile Queue Length [ft/ln]	11.41	100.06	98.33	15.92	63.57	62.82	30.50	27.81	17.81
95th-Percentile Queue Length [veh/ln]	0.82	7.20	7.08	1.15	4.58	4.52	2.20	2.00	1.28
95th-Percentile Queue Length [ft/ln]	20.54	180.11	177.00	28.66	114.42	113.08	54.91	50.06	32.05

Movement, Approach, & Intersection Results

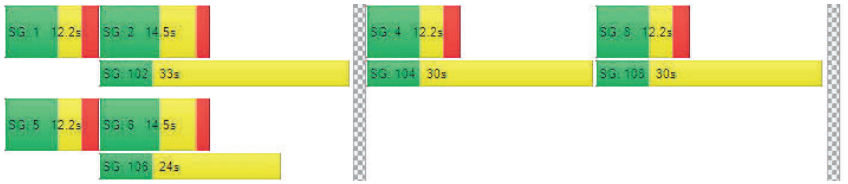
d_M, Delay for Movement [s/veh]	20.54	15.12	15.14	20.07	12.27	12.27	20.22	20.22	20.22	19.22	19.22	18.75
Movement LOS	C	B	B	C	B	B	C	C	C	B	B	B
d_A, Approach Delay [s/veh]	15.37			12.90			20.22			19.03		
Approach LOS	B			B			C			B		
d_I, Intersection Delay [s/veh]	14.96											
Intersection LOS	B											
Intersection V/C	0.485											

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]	18.04	18.04	18.04	18.04
I_p,int, Pedestrian LOS Score for Intersection	2.960	2.971	1.794	2.012
Crosswalk LOS	C	C	A	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]	286	286	250	250
d_b, Bicycle Delay [s]	20.53	20.53	21.39	21.39
I_b,int, Bicycle LOS Score for Intersection	2.440	2.255	1.744	1.848
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 2: Old Hwy 53/18th Ave Extension

Control Type:	Two-way stop	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.116

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	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		18th Ave Extension	
Base Volume Input [veh/h]	371	0	0	288	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	38	39	0	33	33
Site-Generated Trips [veh/h]	0	2	4	0	2	4
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]	371	40	43	288	35	37
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	100	11	12	77	9	10
Total Analysis Volume [veh/h]	398	43	46	309	38	40
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	0.12	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	8.36	0.00	17.80	12.48
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.13	0.13	0.65	0.65
95th-Percentile Queue Length [ft/ln]	0.00	0.00	3.21	3.21	16.14	16.14
d_A, Approach Delay [s/veh]	0.00		1.08		15.07	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.78					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	15.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.484

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	5	671	61	66	771	5	3	4	9	76	13	67
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]	27	0	0	0	0	9	50	0	35	0	18	0
Site-Generated Trips [veh/h]	6	38	0	0	49	8	26	0	15	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	709	61	66	820	22	79	4	59	76	31	67
Peak Hour Factor	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970	0.8970
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]	11	198	17	18	229	6	22	1	16	21	9	19
Total Analysis Volume [veh/h]	42	790	68	74	914	25	88	4	66	85	35	75
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	R
C, Cycle Length [s]	54	54	54	54	54	54	54	54	54
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
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
I2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_i, Effective Green Time [s]	8	20	20	10	22	22	12	12	12
g / C, Green / Cycle	0.16	0.38	0.38	0.19	0.40	0.40	0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.03	0.26	0.26	0.05	0.28	0.28	0.10	0.07	0.05
s, saturation flow rate [veh/h]	1603	1683	1637	1603	1683	1667	1528	1625	1431
c, Capacity [veh/h]	254	637	620	297	682	675	330	359	316
d1, Uniform Delay [s]	19.51	13.98	13.98	18.68	13.20	13.20	18.41	17.60	17.20
k, delay calibration	0.04	0.11	0.11	0.04	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
d2, Incremental Delay [s]	0.11	1.30	1.34	0.16	1.27	1.28	1.08	0.54	0.38
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	0.17	0.68	0.68	0.25	0.69	0.69	0.48	0.33	0.24
d, Delay for Lane Group [s/veh]	19.62	15.28	15.32	18.85	14.47	14.48	19.49	18.14	17.58
Lane Group LOS	B	B	B	B	B	B	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.37	3.30	3.21	0.64	3.41	3.38	1.64	1.18	0.72
50th-Percentile Queue Length [ft/ln]	9.35	82.41	80.32	16.03	85.20	84.46	41.12	29.52	18.05
95th-Percentile Queue Length [veh/ln]	0.67	5.93	5.78	1.15	6.13	6.08	2.96	2.13	1.30
95th-Percentile Queue Length [ft/ln]	16.83	148.35	144.57	28.86	153.35	152.02	74.02	53.14	32.49

Movement, Approach, & Intersection Results

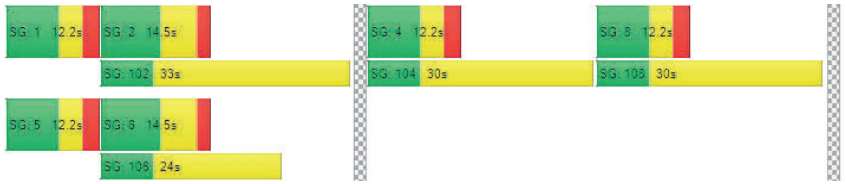
d_M, Delay for Movement [s/veh]	19.62	15.30	15.32	18.85	14.47	14.48	19.49	19.49	19.49	18.14	18.14	17.58
Movement LOS	B	B	B	B	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	15.50			14.79			19.49			17.93		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	15.67											
Intersection LOS	B											
Intersection V/C	0.484											

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]	16.89	16.89	16.89	16.89
l_p,int, Pedestrian LOS Score for Intersection	2.973	2.973	1.812	2.022
Crosswalk LOS	C	C	A	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]	299	299	262	262
d_b, Bicycle Delay [s]	19.36	19.36	20.22	20.22
l_b,int, Bicycle LOS Score for Intersection	2.302	2.395	1.820	1.881
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 2: Old Hwy 53/18th Ave Extension

Control Type:	Two-way stop	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.116

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	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		18th Ave Extension	
Base Volume Input [veh/h]	199	0	0	299	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	42	43	0	27	27
Site-Generated Trips [veh/h]	30	2	34	30	2	3
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]	229	44	77	329	29	30
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	13	23	97	9	9
Total Analysis Volume [veh/h]	269	52	91	387	34	35
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	0.07	0.00	0.12	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	8.14	0.00	18.87	11.48
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.24	0.24	0.57	0.57
95th-Percentile Queue Length [ft/ln]	0.00	0.00	5.94	5.94	14.37	14.37
d_A, Approach Delay [s/veh]	0.00		1.55		15.12	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.06					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.521

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	2	876	50	62	679	3	0	5	3	70	8	63
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]	35	0	0	0	0	13	59	0	18	0	18	0
Site-Generated Trips [veh/h]	7	50	0	0	58	9	27	0	16	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	926	50	62	737	25	86	5	37	70	26	63
Peak Hour Factor	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090	0.9090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	255	14	17	203	7	24	1	10	19	7	17
Total Analysis Volume [veh/h]	48	1019	55	68	811	28	95	6	41	77	29	69
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	R
C, Cycle Length [s]	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
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
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_i, Effective Green Time [s]	9	25	25	10	26	26	12	12	12
g / C, Green / Cycle	0.15	0.43	0.43	0.17	0.44	0.44	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.03	0.32	0.32	0.04	0.25	0.25	0.09	0.07	0.05
s, saturation flow rate [veh/h]	1603	1683	1653	1603	1683	1663	1552	1624	1431
c, Capacity [veh/h]	248	724	711	272	749	741	307	329	290
d1, Uniform Delay [s]	21.48	13.97	13.97	20.98	11.97	11.97	20.66	19.84	19.48
k, delay calibration	0.04	0.11	0.11	0.04	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
d2, Incremental Delay [s]	0.14	1.58	1.61	0.18	0.67	0.67	1.09	0.56	0.42
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	0.19	0.75	0.75	0.25	0.56	0.56	0.46	0.32	0.24
d, Delay for Lane Group [s/veh]	21.62	15.54	15.58	21.15	12.64	12.65	21.75	20.40	19.90
Lane Group LOS	C	B	B	C	B	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.49	4.47	4.40	0.68	2.93	2.90	1.67	1.19	0.76
50th-Percentile Queue Length [ft/ln]	12.17	111.79	110.01	17.02	73.20	72.39	41.73	29.65	18.98
95th-Percentile Queue Length [veh/ln]	0.88	7.94	7.84	1.23	5.27	5.21	3.00	2.13	1.37
95th-Percentile Queue Length [ft/ln]	21.91	198.49	196.01	30.63	131.76	130.30	75.11	53.37	34.16

Movement, Approach, & Intersection Results

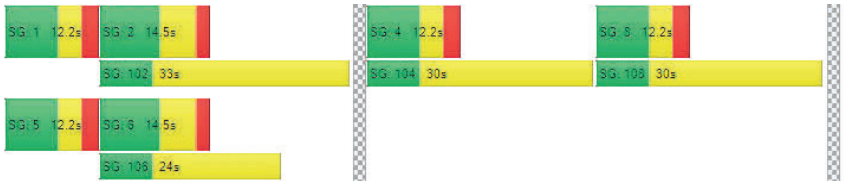
d_M, Delay for Movement [s/veh]	21.62	15.56	15.58	21.15	12.64	12.65	21.75	21.75	21.75	20.40	20.40	19.90
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	B
d_A, Approach Delay [s/veh]	15.82			13.28			21.75			20.20		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	15.52											
Intersection LOS	B											
Intersection V/C	0.521											

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]	19.14	19.14	19.14	19.14
I_p,int, Pedestrian LOS Score for Intersection	3.009	3.023	1.811	2.015
Crosswalk LOS	C	C	A	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]	275	275	241	241
d_b, Bicycle Delay [s]	21.65	21.65	22.52	22.52
I_b,int, Bicycle LOS Score for Intersection	2.485	2.308	1.794	1.848
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report
Intersection 2: Old Hwy 53/18th Ave Extension

Control Type:	Two-way stop	Delay (sec / veh):	20.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.142

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	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		18th Ave Extension	
Base Volume Input [veh/h]	371	0	0	288	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	38	39	0	33	33
Site-Generated Trips [veh/h]	29	2	31	27	2	4
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]	400	40	70	315	35	37
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	107	11	19	85	9	10
Total Analysis Volume [veh/h]	430	43	75	338	38	40
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	0.07	0.00	0.14	0.07
d_M, Delay for Movement [s/veh]	0.00	0.00	8.55	0.00	20.93	13.41
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.22	0.22	0.77	0.77
95th-Percentile Queue Length [ft/ln]	0.00	0.00	5.54	5.54	19.25	19.25
d_A, Approach Delay [s/veh]	0.00		1.55		17.07	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.05					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	120	845	15	70	995	90	90	20	115	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]	33	0	0	0	0	14	60	0	43	0	19	0
Site-Generated Trips [veh/h]	6	0	0	0	0	8	6	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	159	845	15	70	995	112	156	20	163	20	44	80
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	211	4	18	249	28	39	5	41	5	11	20
Total Analysis Volume [veh/h]	159	845	15	70	995	112	156	20	163	20	44	80
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	R
C, Cycle Length [s]	79	79	79	79	79	79	79	79	79
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
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
I2, Clearance Lost Time [s]	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	34	34	11	33	33	22	12	12
g / C, Green / Cycle	0.16	0.44	0.44	0.14	0.41	0.41	0.28	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.10	0.26	0.26	0.04	0.33	0.34	0.22	0.04	0.06
s, saturation flow rate [veh/h]	1603	1683	1673	1603	1683	1624	1519	1657	1431
c, Capacity [veh/h]	251	733	728	217	697	673	423	250	216
d1, Uniform Delay [s]	31.21	16.94	16.94	30.89	20.37	20.39	26.49	29.65	30.20
k, delay calibration	0.04	0.11	0.11	0.04	0.11	0.12	0.34	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
d2, Incremental Delay [s]	0.99	0.76	0.76	0.31	2.41	2.53	10.58	0.54	1.06
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	0.63	0.59	0.59	0.32	0.81	0.81	0.80	0.26	0.37
d, Delay for Lane Group [s/veh]	32.20	17.70	17.71	31.20	22.79	22.92	37.06	30.19	31.26
Lane Group LOS	C	B	B	C	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.62	5.00	4.97	1.11	7.93	7.69	6.88	1.08	1.40
50th-Percentile Queue Length [ft/ln]	65.54	125.06	124.32	27.78	198.14	192.16	172.12	27.09	34.89
95th-Percentile Queue Length [veh/ln]	4.72	8.67	8.63	2.00	12.54	12.23	11.19	1.95	2.51
95th-Percentile Queue Length [ft/ln]	117.98	216.76	215.75	50.00	313.56	305.83	279.70	48.77	62.81

Movement, Approach, & Intersection Results

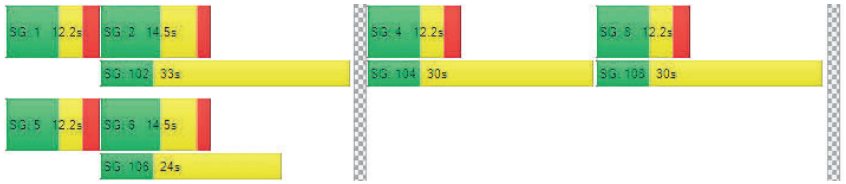
d_M, Delay for Movement [s/veh]	32.20	17.70	17.71	31.20	22.84	22.92	37.06	37.06	37.06	30.19	30.19	31.26
Movement LOS	C	B	B	C	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	19.97			23.35			37.06			30.78		
Approach LOS	B			C			D			C		
d_I, Intersection Delay [s/veh]	24.20											
Intersection LOS	C											
Intersection V/C	0.713											

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]	29.21	29.21	29.21	29.21
I_p,int, Pedestrian LOS Score for Intersection	3.078	3.100	2.026	2.014
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]	203	203	177	177
d_b, Bicycle Delay [s]	31.85	31.85	32.75	32.75
I_b,int, Bicycle LOS Score for Intersection	2.400	2.531	2.119	1.797
Bicycle LOS	B	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 2: Old Hwy 53/18th Ave Extension

Control Type:	Two-way stop	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.112

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	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		18th Ave Extension	
Base Volume Input [veh/h]	199	0	0	299	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	1.4200	1.4200	1.4200	1.4200	1.4200	1.4200
In-Process Volume [veh/h]	0	51	52	0	33	33
Site-Generated Trips [veh/h]	0	2	4	0	2	3
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]	283	53	56	425	35	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	71	13	14	106	9	9
Total Analysis Volume [veh/h]	283	53	56	425	35	36
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	0.05	0.00	0.11	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	8.08	0.00	18.09	11.49
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.14	0.14	0.57	0.57
95th-Percentile Queue Length [ft/ln]	0.00	0.00	3.59	3.59	14.25	14.25
d_A, Approach Delay [s/veh]	0.00		0.94		14.74	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.69					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 1: SR 53/18th Ave

Control Type:	Signalized	Delay (sec / veh):	27.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

Name	SR 53			SR 53			18th Ave Extension			18th Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	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	100.00	100.00	100.00	150.00
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 Extension			18th Ave		
Base Volume Input [veh/h]	130	945	15	80	895	110	110	25	130	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]	42	0	0	0	0	18	69	0	36	0	21	0
Site-Generated Trips [veh/h]	7	0	0	0	0	9	9	0	7	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	179	945	15	80	895	137	188	25	173	20	41	80
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	236	4	20	224	34	47	6	43	5	10	20
Total Analysis Volume [veh/h]	179	945	15	80	895	137	188	25	173	20	41	80
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	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

Control Type	Protect	Permis	Permis	Protect	Permis	Permis	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	8	0	7	8	0	0	7	0	0	7	0
Maximum Green [s]	20	50	0	20	50	0	0	20	0	0	20	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]	12	14	0	12	14	0	0	12	0	0	12	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	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	
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	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	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	R
C, Cycle Length [s]	83	83	83	83	83	83	83	83	83
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
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
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_i, Effective Green Time [s]	14	35	35	11	32	32	25	12	12
g / C, Green / Cycle	0.17	0.42	0.42	0.13	0.39	0.39	0.30	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.11	0.29	0.29	0.05	0.31	0.31	0.25	0.04	0.06
s, saturation flow rate [veh/h]	1603	1683	1674	1603	1683	1606	1525	1656	1431
c, Capacity [veh/h]	267	711	707	214	656	626	459	237	205
d1, Uniform Delay [s]	32.62	19.47	19.47	32.95	22.63	22.64	27.29	31.77	32.41
k, delay calibration	0.04	0.11	0.11	0.04	0.11	0.11	0.47	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
d2, Incremental Delay [s]	1.10	1.14	1.14	0.40	2.43	2.57	15.92	0.57	1.21
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	0.67	0.68	0.68	0.37	0.81	0.81	0.84	0.26	0.39
d, Delay for Lane Group [s/veh]	33.71	20.61	20.62	33.35	25.07	25.21	43.20	32.34	33.62
Lane Group LOS	C	C	C	C	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	3.15	6.52	6.48	1.37	8.20	7.86	8.89	1.11	1.50
50th-Percentile Queue Length [ft/ln]	78.87	162.94	162.12	34.30	205.11	196.56	222.27	27.72	37.56
95th-Percentile Queue Length [veh/ln]	5.68	10.70	10.66	2.47	12.90	12.46	13.78	2.00	2.70
95th-Percentile Queue Length [ft/ln]	141.96	267.62	266.52	61.73	322.55	311.52	344.52	49.89	67.60

Generated with PTV VISTRO Airport Hotel Project 6/29/2022
Version 2021 (SP 0-6)

Movement, Approach, & Intersection Results

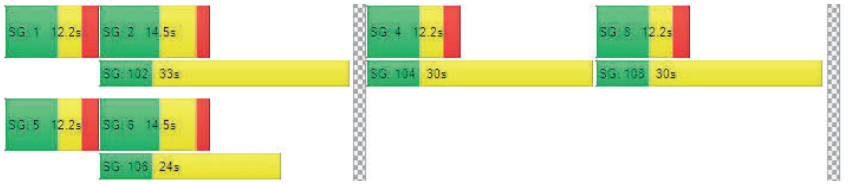
d_M, Delay for Movement [s/veh]	33.71	20.61	20.62	33.35	25.12	25.21	43.20	43.20	43.20	32.34	32.34	33.62
Movement LOS	C	C	C	C	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	22.67			25.73			43.20			33.07		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	27.28											
Intersection LOS	C											
Intersection V/C	0.735											

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]	31.34	31.34	31.34	31.34
I_p,int, Pedestrian LOS Score for Intersection	3.091	3.126	2.073	2.020
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]	192	192	168	168
d_b, Bicycle Delay [s]	33.99	33.99	34.90	34.90
I_b,int, Bicycle LOS Score for Intersection	2.499	2.477	2.197	1.792
Bicycle LOS	B	B	B	A

Sequence

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



Intersection Level Of Service Report
Intersection 2: Old Hwy 53/18th Ave Extension

Control Type:	Two-way stop	Delay (sec / veh):	24.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.185

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	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		18th Ave Extension	
Base Volume Input [veh/h]	371	0	0	288	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	1.4100	1.4100	1.4100	1.4100	1.4100	1.4100
In-Process Volume [veh/h]	0	52	53	0	40	41
Site-Generated Trips [veh/h]	0	2	4	0	2	4
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]	523	54	57	406	42	45
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	131	14	14	102	11	11
Total Analysis Volume [veh/h]	523	54	57	406	42	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	0.01	0.00	0.06	0.00	0.19	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	8.83	0.00	24.94	15.79
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.18	0.18	1.07	1.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	4.54	4.54	26.69	26.69
d_A, Approach Delay [s/veh]	0.00		1.09		20.21	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.01					
Intersection LOS	C					