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TECHNICAL MEMORANDUM

Date: January 29, 2021

TO: Jill Short Milne, Executive Director, Project SNOW
Emilio Balingit, Urban Planning Partners, Inc.

FROM: Gordon Shaw, PE and Sierra Brown, EIT, LSC Transportation Consultants,
Inc.

RE: Squaw S.N.O.W. Museum – Trip Generation, Level of Service and Roadway
Capacity

This memorandum documents the findings and conclusions of an analysis of trip generation, intersection Level of Service (LOS), queuing and roadway capacity analysis regarding the proposed Squaw Valley Olympic Museum project located at the existing Squaw Valley Park property on the south side of Squaw Valley Road immediately west of State Route (SR) 89. This analysis is an update of the analysis presented in the *Squaw Valley Olympic Museum Transportation Impact Analysis* (LSC, March 2, 2020). The purpose of this analysis is to present determine the impacts of the traffic generated by the project on the surrounding roadway infrastructure. Next, it is identified whether mitigation is required to allow transportation facilities to operate in conformance with adopted standards and consistent with pertinent policies under the current adopted Placer County and Caltrans standards. Finally, the project's consistency with the traffic policies in the Squaw Valley General Plan is evaluated.

Based upon input provided by Placer County staff, the following intersections were identified for quantitative analysis:

- SR 89/Squaw Valley Road
- Squaw Valley Road/Squaw Park Driveway (site access intersection)

The following roadway segments were identified for analysis:

- SR 89 north of Squaw Valley Road
- SR 89 south of Squaw Valley Road

This analysis considers the following four scenarios:

1. Existing Year without Project
2. Existing Year with Project
3. Future Cumulative (20-Year Horizon) without Project
4. Future Cumulative with Project

Trip Generation

TRIP GENERATION OF PROPOSED MUSEUM

Project Description

The proposed museum building would provide about 12,000 square feet of use area for museum operations and a limited number of special events. The museum is anticipated to be open daily from 10 AM to 6 PM. A total of 6 employees (3 full-time and 3 part-time) are expected to report to the site over the course of a busy day. Visitation levels at the museum would vary by season, day of week, and time of day. Consistent with typical tourism trends, the highest visitation levels would generally occur during winter and summer peak/holiday periods. Friday through Sunday would typically be busier than Monday through Thursday.

Based on visitation data provided by Squaw Valley Ski Museum Foundation staff, approximately 300 visitors are anticipated over the course of a peak winter Sunday, and 225 on a peak summer day. Over the course of a peak day, the number of visitors at the museum would be highest during the afternoon period from about 3 PM to 6 PM. In addition, an average of 6 special events per year would be held at the museum, with up to 100 guests per event. Special events would occur in the evening, between 6 PM and 10 PM, in order to avoid peak traffic periods.

Access to the museum would be provided via the existing Squaw Valley Park driveway located on the south side of Squaw Valley Road immediately west of its intersection with SR 89. The existing parking lot would serve both the park and the museum.

Trip Generation of Museum

The first step in the analysis of future traffic impacts is to prepare an estimate of the number of one-way vehicle-trips generated by the proposed project. While standard trip generation rates for a museum are provided in the Institute of Transportation Engineers (ITE) *Trip Generation, 10th Edition* (2017) manual, the rates are based on data collected at only one museum. In order to provide a more accurate estimate of site-generated traffic, a detailed analysis is performed to estimate the vehicular trip generation of the museum based on the number of employees, visitors, and service vehicles, factored by expected travel modes and vehicle occupancy rates. The trip generation of the project is evaluated for typical museum operations on a winter Sunday, a summer Friday and a summer weekend day.

The trip generation analysis is summarized in Table 1. The following assumptions are applied:

- Some visitors are expected to make trips to/from the site via non-auto modes, such as transit trips. Considering the site’s location along the TART transit route and the winter Mountaineer and Squaw Valley-Alpine Meadows skier shuttle service, approximately 4 percent of visitor trips to/from the museum during the winter are assumed to be made by non-auto modes. Given that the site is also served by a Class I trail (bike path) in the summer, approximately 15 percent of visitor trips on a summer day are assumed to be made via non-auto modes.
- About 5 percent of employee trips are assumed to be made via non-auto modes during the winter and summer.
- An average vehicle occupancy rate of 2.1 visitors per vehicle is assumed, consistent with other recent studies. Museum employees traveling via private automobile are assumed to have an average vehicle occupancy rate of 1 employee per vehicle, conservatively.
- About half of the employees are assumed to make one round-trip off the site during the workday for lunch, errands, etc.
- Approximately 2 service/delivery vehicles are anticipated to visit the site over the course of a busy day.

TABLE 1: Squaw Valley Olympic Museum - Trip Generation at Site Driveway

Description	Quantity	Units	Trip Generation Rates ¹				Vehicle Trips at Site Driveway ²				% Daily Trips Generated by Visitors	Pass-by Reduction	Daily Trips	
			Daily	PM Peak Hour			Daily	PM Peak Hour					Pass-by	New
				In	Out	Total		In	Out	Total				
Proposed Project³														
Peak Summer Friday	12.00	KSF	person trip analysis				203	6	22	28	90%	20%	36	167
Peak Summer Saturday	12.00	KSF	person trip analysis				268	7	30	37	92%	20%	49	219
Peak Winter Sunday	12.00	KSF	person trip analysis				301	8	33	41	93%	25%	70	231

KSF = 1,000 square feet of floor area
 Note: Excludes special events at museum.
 Note 1: Trip generation rates are based on a person-trip analysis as Trip Generation, 10th Edition (ITE, 2017) does not have sufficient data.
 Note 2: These are not all "new" trips to the roadway network. See discussion in text report.
 Source: LSC Transportation Consultants, Inc.

Trip Generation at Site Driveway

Multiplying the number of person-trips by the auto mode split and dividing by the average vehicle occupancy rate yields the number of one-way vehicle trips generated at the site driveway. Adding the visitor, employee, and service/delivery vehicle trips yields a total of approximately 301 daily one-way vehicle trips on a winter Sunday, 203 daily trips on a summer Friday and 268 daily trips on a summer Saturday. Note that these are not all ‘new’ trips on the surrounding roadway network, as discussed below.



To estimate the portion of total daily trips that occur during the PM peak hours, an average 'PM-to-daily' trip factor of approximately 13.7 percent is applied. This factor is derived from a review of PM-to-daily factors for similar land use types in the ITE Trip Generation Manual. The resulting number of PM peak-hour one-way trips generated by the proposed museum is approximately 41 (8 entering and 33 exiting) on a winter Sunday, 28 (6 entering and 22 exiting) on a summer Friday and 37 (7 entering and 30 exiting) during the weekend mid-day peak hour.

Trip Generation of Special Events

Museum staff indicates that special events are planned to occur in the evening starting at or after 6 PM. The following assumptions are applied:

- A special event is assumed to have 100 guests and about 10 staff.
- Considering that special events would occur in the evening and that guests could be coming from outside Squaw Valley, all guests are assumed to arrive via automobile. About 5 percent of event staff trips are assumed to be made via non-auto modes during the winter and summer.
- An additional 2 service/delivery vehicles are assumed to be associated with a special event.

Multiplying the number of person-trips by the auto mode split and dividing by the average vehicle occupancy rate yields the number of one-way vehicle trips generated at the site driveway. Adding the guest, staff, and service/delivery vehicle trips yields a total of approximately 119 daily one-way vehicle trips generated at the site driveway by a special event.

Pass-by Versus New Trips

A portion of trips associated with the museum are expected to be "pass-by" trips, or trips attracted from traffic passing the site on SR 89 or Squaw Valley Road. Pass-by trips generate traffic on the access driveway, but do not add new traffic on regional roadways (as they are made by vehicles already passing by the site that will divert to the new land use as part of a longer trip). As an example, tourists passing by the site along SR 89 might decide to stop at the site, thereby generating new trips on Squaw Valley Road and the site access driveway but not generating new trips along SR 89. (This is technically called a "diverted-link" trip, given that the site driveway does not front on the highway. For simplicity, it is referred to as a pass-by trip.)

Data on the proportion of trips that are pass-by have been collected for a variety of land uses. As examples, the following are the average observed pass-by percentages as reported in the *ITE Trip Generation Handbook*:

- Variety Store – 34 percent
- Supermarket – 36 percent
- Shopping Center (Saturday, Mid-day) – 26 percent

Unfortunately, there is no available published data on the pass-by proportion for a museum. Efforts to research pass-by trips for similar existing sports museums did not result in any



useable data, though a study of the State Rail Museum in Sacramento indicated that 30 percent of visitors were already in the vicinity. In estimating an appropriate value, the following was considered:

- The proposed museum is relatively modest in size compared with a large museum in an urban area. Rather than being a day-long activity, a relatively short stay can be expected¹. This would indicate that many visitors will stop by the museum as part of longer trips with multiple destinations.
- The location along the access route to Squaw Valley, Alpine Meadows (and other ski areas) means that much of the traffic on the adjacent roadways consists of persons interested in outdoor recreation and specifically skiers that would have a relatively high level of interest in visiting a museum dedicated to the Winter Olympics. In particular, a pattern of stopping by the museum at the end of a ski day would be expected.
- Many summer visitors to the region make multiple stops as part of a day trip exploring the area. The Museum would be a logical additional stop along a longer such trip.

The portion of pass-by trips generated during typical operations at the museum is estimated as follows:

- Over the course of a busy **winter day**, the total portion of museum trips that are on the adjacent roadways (pass-by) is estimated to be 25 percent. Of this, 34 percent is generated by vehicles passing by on SR 89 (proceeding straight through the Squaw Valley Road intersection) while 66 percent is generated by vehicles passing by on Squaw Valley Road.
- Over the course of a busy **summer day**, the total proportion of pass-by trips would be slightly lower at 20 percent, reflecting that a smaller proportion of summer travelers have an interest in winter sports. Reflecting the relatively low traffic activity on Squaw Valley Road in the summer compared to the winter, 62 percent of this pass-by activity is generated by travelers passing by on SR 89 and 38 percent by those on Squaw Valley Road.

As shown in the right portion of Table 1, applying these proportions to the proportion of daily trips generated by visitors yields the daily pass-by trips for the three analysis days. Subtracting these pass-by trips from the total trip generation yields the daily new vehicle-trips (those that would not be on the adjacent roadways in the absence of the proposed project). These new trips equal 167 on a summer Friday, 219 on a summer Saturday and 231 on a winter Sunday. It is important to note that no pass-by reductions are applied to the peak-hour trip generation in order to yield a conservative analysis of peak-hour LOS, and to reflect that pass-by trips diverting off of SR 89 still represent new traffic activity on Squaw Valley Road.

LOS Description

Traffic operations at the study intersections are assessed in terms of Level of Service (LOS) and

¹ As an example, surveys of visitors to the existing Tahoe Maritime Museum indicate an average length of stay of 2 hours.

delay. LOS is a concept that was developed by transportation engineers to quantify the level of operation of intersections and roadways (*Highway Capacity Manual*, Transportation Research Board). LOS measures are classified in grades "A" through "F," indicating the range of operation. LOS "A" signifies the best level of operation, while "F" represents the worst. A detailed description of LOS criteria is provided in Appendix A.

For signalized intersections, LOS is primarily measured in terms of average delay per vehicle entering the intersection. LOS at unsignalized intersections is reported in terms of delay on the worst movement. Unsignalized intersection LOS is based upon the theory of gap acceptance for side-street stop sign-controlled approaches, while signalized intersection LOS is based upon the assessment of volume-to-capacity ratios and control delay.

LOS Standards

The LOS thresholds applicable to the study area are discussed below.

Caltrans

According to the *SR 89 Transportation Corridor Concept Report* (Caltrans District 3, April 2012), the minimum acceptable LOS along SR 89 over the next 20 years is "E."

Placer County

Placer County defines its LOS standard as "D" for locations within one-half mile of a state highway, and "C" for other locations in the study area. Roadway LOS is measured according to ADT (Average Daily Traffic) per travel lane, using a lookup table provided in the *Placer County Congestion Management Plan*. For the study area, Placer County requires evaluation of summer or winter ADT, whichever is higher. According to County policy, the County's LOS standards for the state highway system shall be no worse than those adopted in the Placer County Congestion Management Program (CMP). The LOS standard in the CMP for roadways and signalized intersections located along state highways is "E." If worst movement LOS at an unsignalized intersection in Placer County exceeds LOS standards, a "Peak-Hour" signal warrant analysis, consistent with the Manual of Uniform Traffic Control Devices (MUTCD), is required. If the intersection attains minimum signal warrant volumes, mitigation is required.

The segments of SR 89 (located in Placer County) are measured against the Caltrans standard of LOS E, as Placer County typically defers to Caltrans LOS standards on State facilities.

Placer County may allow exceptions to its LOS standards where it finds that the improvements or other measures required to achieve the LOS standards is unacceptable based on established criteria. In allowing any exceptions to established LOS standards, the County shall consider the following factors:

- The number of hours per day that the intersection or roadway segment would operate the conditions worse than the standard.

- The ability of the required improvement to significantly reduce peak-hour delay and improve traffic operations.
- The right-of-way needs and the physical impacts on surrounding properties.
- The visual aesthetics of the required improvement and its impact on community identity and character.
- Environmental impacts including air quality and noise impacts.
- Construction and right-of-way acquisition costs.
- The impacts on general safety.
- The impacts of the required construction phasing and traffic maintenance.
- The impacts on quality of life as perceived by residents.
- Consideration of other environmental, social or economic factors on which the County may base findings to allow exceedance of the standards.

Exceptions to the standards will only be allowed after all feasible measures and options are explored, including alternative forms of transportation.

Finally, as of the time when this traffic analysis was initiated, Placer County adopted an "Impact Analysis Methodology of Assessment" for County roadways and intersections (including State facilities) to ensure that mitigation measures are proportionate to the level of impact a specific project has on an intersection or roadway. The methodology document is included in Appendix B. This methodology establishes guidelines for when a project may be considered to exceed the minimum LOS policies.

For roadway segments, *"a project may be considered to exceed the minimum LOS policies if:*

1. *A roadway segment operating at or above the established Placer County policy without the project traffic trips will decrease to an unacceptable LOS with the project; **or***
2. *A roadway segment currently operating below the established acceptable LOS policy will experience an increase in V/C (volume to capacity) ratio of 0.05 or greater with the project; **or***
3. *A roadway segment currently operating below the established acceptable LOS policy experiences an increase in ADT of 100 or more project generated trips, per lane."*

For signalized intersections, *"a project may be considered to exceed the minimum LOS*

policies if:

- 1. An intersection operating at or above the established Placer County policies without the project traffic trips will decrease to an unacceptable LOS with the project; **or***
- 2. An intersection currently operating below the established acceptable LOS policy will experience an increase in V/C (volume to capacity) ratio of 0.05 (5%) or greater; **or***
- 3. An intersection currently operating below the established acceptable LOS policy will experience an increase in overall average intersection delay of 4 seconds or greater."*

For unsignalized intersections, "a project may be considered to exceed the minimum LOS policies if:

- 1. An all way stop or side street controlled intersection, which currently operates at or above the established Placer County policies without the project, will deteriorate to an unacceptable LOS with the project and cause the intersection to meet MUTCD traffic signal warrant(s) **or***
- 2. An all way stop or side street controlled intersection which currently operates below the established acceptable LOS policy and meets MUTCD traffic signal warrant(s) will experience an increase of 2.5 seconds or more with the project.*

Further consideration will be given in situations where the existing level of service is just above or at the approved minimum level of service and any increase in vehicle trips, or even daily fluctuations in traffic, will deteriorate the level of service to an unacceptable level. In such cases, it may be determined by the County that part (2) or (3) of the above exceptions is more applicable and should be used to analyze a proposed project's impacts."

Squaw Valley General Plan Policies

The *Squaw Valley Land Use Plan and Land Use Ordinance* was adopted in 1983. With regards to traffic impacts on the roadway network, the following policy discussion is included (p 44):

"The major existing development is the ski hill, which causes most of the present peak-traffic problems. The following policies and requirements regarding additional sports/recreation development are necessary to keep existing traffic problems from becoming worse and to protect public safety, convenience, and general welfare:

- A) Present peak-period congestion and delay shall not be worsened; levels of service on area's road network shall not deteriorate within Squaw Valley, or at the Squaw Valley Road/State Hwy 89 intersection, or at the State Hwy 89/28 intersection.*

B) The duration and number of occurrences of such traffic problems shall not increase within Squaw Valley, or at the Squaw Valley Road/State Hwy 89 intersection, or at the State Hwy 89/28 intersection.

While these policies are not specifically pertinent to the proposed museum project (as it is not a sports/recreation land use), these policies provide a useful measure for considering impacts on Squaw Valley Road.

Intersection LOS

The peak-hour trip generation volumes shown in Table 1 were distributed to the study intersections based on the distribution pattern presented in the *Squaw Valley Olympic Museum Transportation Impact Analysis* (LSC, March 2, 2020). In addition, that document presents the existing and no-project traffic volumes. The resulting volumes were used to evaluate intersection LOS at the signalized SR 89/Squaw Valley Road intersection and at the unsignalized "T" intersection formed by the site driveway and Squaw Valley Road. These intersections are evaluated to determine existing and future cumulative operational conditions during the winter PM, summer PM and summer weekend mid-day peak hours, with and without the proposed project. The results are summarized in Table 2.

TABLE 2: Squaw Valley Olympic Museum - Intersection LOS Summary						
Scenario	Intersection	Control	No Project		With Project	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Existing Year						
Winter PM	SR 89 / Squaw Valley Road ¹	Signal	14.3	B	14.5	B
Winter PM	Squaw / Site Access ²	Stop	15.6	C	9.1	A
Summer Friday PM	SR 89 / Squaw Valley Road ¹	Signal	9.5	A	9.6	A
Summer Friday PM	Squaw / Site Access ²	Stop	3.8	A	4.1	A
Summer Weekend Mid-Day	SR 89 / Squaw Valley Road ¹	Signal	10.4	B	12.0	B
Summer Weekend Mid-Day	Squaw / Site Access ²	Stop	3.8	A	4.3	A
Future Year						
Winter PM	SR 89 / Squaw Valley Road ¹	Signal	31.6	C	31.2	C
Winter PM	Squaw / Site Access ²	Stop	OVF	F	OVF	F
Summer PM	SR 89 / Squaw Valley Road ¹	Signal	34.7	C	29.3	C
Summer PM	Squaw / Site Access ²	Stop	8.7	A	11.1	B
<p>BOLD text indicates that LOS standard has been exceeded.</p> <p>OVF = Overflow. Overflow indicates a delay greater than 200 seconds per vehicle, which cannot be accurately calculated.</p> <p>NOTE: Future summer weekend LOS would be no worse than summer Friday, as the volumes would be lower.</p> <p>NOTE 1: Level of service for signalized intersections is reported for the total intersection.</p> <p>NOTE 2: Level of service for unsignalized intersections is reported for the worst movement.</p> <p>Source: LSC Transportation Consultants, Inc.</p>						

Squaw Olympic.xlsx

LOS Analysis Methodology and Assumptions

In order to reflect the effects of the downstream lane drop on SR 89 to the north of Squaw Valley Road, the yield-controlled right-turn movements, and the queuing between the closely-spaced intersections along Squaw Valley Road, a microscopic traffic simulation was created for the study area using the SimTraffic software package (Version 10, TrafficWare). The intersection LOS analysis is based on the results of the simulation. Computer output of the simulation runs is provided in Appendix C.

Existing Year Intersection LOS

As indicated in the table, the two intersections currently operate at an acceptable LOS C or better during the winter and summer peak hours. Implementation of the proposed project under existing year conditions would not affect the LOS at the SR 89/Squaw Valley Road intersection, although the average vehicular delays would increase slightly. The site access intersection would operate at an acceptable LOS C or better. As such, no intersection LOS deficiencies are identified under existing year conditions, with or without the proposed project.

Future Cumulative Intersection LOS

Although the forecasted growth in background traffic (including traffic generated by the approved Village at Squaw Valley Specific Plan Project and the proposed Base-to-Base Gondola Project) would cause the LOS to degrade under some scenarios, the SR 89/Squaw Valley Road intersection would continue to operate within the applicable LOS thresholds without the proposed project. However, the forecasted growth in background traffic would degrade the site access approach on Squaw Valley Road to LOS F during winter PM peak periods when skier traffic is exiting the valley. Although average driver delays would increase slightly with implementation of the proposed project, the SR 89/Squaw Valley Road intersection would continue to operate at an acceptable LOS, while the site driveway would continue to operate at LOS F in the winter PM. No LOS deficiencies are identified during the summer, with or without the project.

According to the County's methodology of assessment for unsignalized intersections, "a project may be considered to exceed the minimum LOS policies if a side-street-controlled intersection (such as the site access intersection) which currently operates below the established acceptable LOS policy and meets MUTCD traffic signal warrant(s) will experience an increase in delay of 2.5 seconds or more with the project. As the 'future with project' peak-hour traffic volumes at this intersection do not meet the MUTCD's peak-hour volume signal warrant criteria, the proposed project would not exceed the County's minimum LOS policies at the Squaw Valley Road/Site Access intersection.

Intersection Queuing Analysis

Traffic queues at specific intersections that exceed the storage capacity of turn lanes or ramps, or that block turn movements at important nearby intersections or driveways can cause operational problems beyond those identified in the LOS analysis. The 95th-percentile traffic queue lengths (the length that is only exceeded 5 percent of the time during the analysis period) were reviewed at intersection locations where queuing could potentially interfere with adjacent roads or driveways. The results of the simulation indicate no existing traffic queuing concerns at the two study intersections, except left turns from the 7-11 driveway onto Squaw Valley Road are currently hindered by the eastbound traffic queues forming at the signal during winter PM periods. Implementation of the proposed project in the existing year is not expected to materially affect the traffic queue lengths during winter or summer PM peak periods.

Under future cumulative conditions without the proposed project, eastbound traffic queues on Squaw Valley Road are expected to be notably longer than under existing year conditions. Left turns from the 7-11 driveway would continue to be hindered by this queue during winter periods. These turns would also be hindered during summer peak periods. Additionally, the 95th-percentile queues on eastbound Squaw Valley Road would block turns from the site driveway during winter PM peak periods, as well as left turns into the site. The average (50th-percentile) queues would not be expected to block the site driveway. Finally, although the 95th-percentile queue lengths in the northbound and southbound left-turn lanes on SR 89 would exceed the available storage length during some future peak periods, the proposed project would not be expected to exacerbate this issue.

Roadway Capacity

Roadway capacity is evaluated in order to determine whether a specific roadway segment should be widened to accommodate existing or future traffic volumes. Different methodologies can be employed to determine capacity, but generally, the calculation will incorporate a series of factors including roadway facility type, evaluation period, and level of service thresholds. The roadway LOS was determined by applying the Placer County standard to the Average Daily Traffic volume (ADT). Placer County policy on roadway LOS defers to the Caltrans concept LOS standard for state highways. Therefore, the roadway LOS for SR 89 is evaluated against the Caltrans LOS standard of LOS E. The LOS threshold and estimated ADT for SR 89 north and south of Squaw Valley Road are shown in Table 2, along with the maximum allowable traffic volumes to obtain the LOS threshold. As shown in the table, SR 89 would operate within the LOS thresholds under all existing year scenarios, with or without the proposed project.

Roadway LOS under future cumulative conditions is summarized in Table 3. SR 89 would continue to operate within the LOS thresholds under all winter future cumulative analysis periods, with or without the proposed project. However, summer future cumulative conditions

TABLE 3: 2019 Squaw Valley Olympic Museum - Existing Roadway LOS

Roadway Segments	Classification	LOS Threshold	Peak-Hour Two Way Volume	Peak-Hour Peak-Direction Volume	ADT	Maximum Allowable Two-way ADT to Obtain LOS Threshold	LOS Threshold Exceeded?
Existing No Project							
<u>Winter</u>							
SR 89 immediately north of Squaw Valley Rd	Rural Highway-Level	E	1,702	1,363	15,370	25,000	No
SR 89 immediately south of Squaw Valley Rd	Rural Highway-Level	E	1,267	852	14,490	25,000	No
<u>Summer Friday PM</u>							
SR 89 immediately north of Squaw Valley Rd	Rural Highway-Level	E	1,314	724	15,270	25,000	No
SR 89 immediately south of Squaw Valley Rd	Rural Highway-Level	E	1,295	687	13,140	25,000	No
<u>Summer Weekend Mid-Day</u>							
SR 89 immediately north of Squaw Valley Rd	Rural Highway-Level	E	1,437	837	16,700	25,000	No
SR 89 immediately south of Squaw Valley Rd	Rural Highway-Level	E	1,427	833	14,480	25,000	No
Existing With Project							
<u>Winter</u>							
SR 89 immediately north of Squaw Valley Rd	Rural Highway-Level	E	n/a	n/a	15,430	25,000	No
SR 89 immediately south of Squaw Valley Rd	Rural Highway-Level	E	n/a	n/a	14,500	25,000	No
<u>Summer Friday PM</u>							
SR 89 immediately north of Squaw Valley Rd	Rural Highway-Level	E	n/a	n/a	15,320	25,000	No
SR 89 immediately south of Squaw Valley Rd	Rural Highway-Level	E	n/a	n/a	13,190	25,000	No
<u>Summer Weekend Mid-Day</u>							
SR 89 immediately north of Squaw Valley Rd	Rural Highway-Level	E	n/a	n/a	16,760	25,000	No
SR 89 immediately south of Squaw Valley Rd	Rural Highway-Level	E	n/a	n/a	14,540	25,000	No

Source: LSC Transportation Consultants, Inc.

TABLE 4: Squaw Valley Olympic Museum - Future Cumulative Roadway LOS

Roadway Segments	Classification	LOS Threshold	Peak-Hour Two Way Volume	Peak-Hour Peak-Direction Volume	ADT	Maximum Allowable Two-way ADT to Obtain LOS Threshold	LOS Threshold Exceeded?
Future Without Project							
<u>Winter</u>							
SR 89 immediately north of Squaw Valley Rd	Rural Highway-Level	E	2,237	1,797	20,210	25,000	No
SR 89 immediately south of Squaw Valley Rd	Rural Highway-Level	E	1,430	840	16,350	25,000	No
<u>Summer</u>							
SR 89 immediately north of Squaw Valley Rd	Rural Highway-Level	E	2,374	1,350	27,600	25,000	Yes
SR 89 immediately south of Squaw Valley Rd	Rural Highway-Level	E	2,262	1,338	22,950	25,000	No
Future With Project							
<u>Winter</u>							
SR 89 immediately north of Squaw Valley Rd	Rural Highway-Level	E	n/a	n/a	20,270	25,000	No
SR 89 immediately south of Squaw Valley Rd	Rural Highway-Level	E	n/a	n/a	16,360	25,000	No
<u>Summer</u>							
SR 89 immediately north of Squaw Valley Rd	Rural Highway-Level	E	n/a	n/a	27,660	25,000	Yes
SR 89 immediately south of Squaw Valley Rd	Rural Highway-Level	E	n/a	n/a	23,010	25,000	No

Note: 'With Project' ADT calculated from daily project-generated volumes less pass by, then added to 'No Project' ADT.

Source: LSC Transportation Consultants, Inc.



exceed the threshold at SR 89 immediately north of Squaw Valley Road, due to growth in future background traffic. According to the County's methodology of assessment for roadway segments, *"a project may be considered to exceed the minimum LOS policies if:*

- 1. A roadway segment operating at or above the established Placer County policy without the project traffic trips will decrease to an unacceptable LOS with the project; **or***
- 2. A roadway segment currently operating below the established acceptable LOS policy will experience an increase in V/C (volume to capacity) ratio of 0.05 or greater with the project; **or***
- 3. A roadway segment currently operating below the established acceptable LOS policy experiences an increase in ADT of 100 or more project generated trips, per lane."*

Condition 1 does not apply to this segment, as it operates below the standard under 'future no project' conditions. Condition 2 is not met, as the increase in V/C due to the project is calculated to be less than 0.01. Regarding Condition 3, the increase in ADT on this segment in the summer is estimated to be about 60, which is less than the 100 ADT threshold. Therefore, the proposed project would not exceed the County's minimum LOS policies on SR 89 immediately north of Squaw Valley Road.

IMPACTS AND MITIGATION

The following potential areas of transportation impacts are considered in this section:

- Intersection LOS
- Intersection Queuing
- Roadway LOS
- Project's Consistency with Squaw Valley General Plan

Intersection LOS

No intersection LOS concerns are identified under existing year conditions, with or without the proposed project. Under future cumulative conditions, the Squaw Valley Road/Site Access intersection is shown to operate at LOS F during winter PM peak periods when skier traffic is exiting the valley. However, as the peak-hour traffic volumes at this intersection do not meet the MUTCD's peak-hour volume signal warrant criteria, the proposed project would not exceed the County's minimum LOS policies at this intersection. As such, no intersection LOS mitigation measures are necessary under typical museum operations.

On a busy winter day, a 100-person event with the majority of guests arriving after 6 PM is not expected to result in delays exceeding those already occurring in the peak hours.

During the non-winter seasons, a 100-person event would not be expected to result in any intersection LOS concerns, even if the event lets out during the summer PM peak hour.

Intersection Queuing

The results of the simulation indicate left turns from the 7-11 driveway onto Squaw Valley Road are currently hindered by the eastbound traffic queues forming at the signal during winter PM periods. No additional traffic queuing issues are identified in the site vicinity under existing winter and summer "design hour" conditions. Note that the simulation model does not reflect conditions during winter storm events. Implementation of the proposed project in the existing year is not expected to materially affect the traffic queue lengths during winter or summer peak periods.

Under future cumulative conditions without the proposed project, left turns from the 7-11 driveway would continue to be hindered by the eastbound traffic queues on Squaw Valley Road during winter PM peak periods. These turns would also be hindered during summer PM peak periods. With the proposed project, the 95th-percentile queues in the eastbound left-turn lanes would interfere with turns from the site driveway during winter PM peak periods, as well as left turns into the site. Average (50th-percentile) queues would not be expected to block the site driveway. Furthermore, the number of vehicles turning left from the site driveway during peak periods is expected to be relatively low (less than one vehicle every 8 minutes, on average). Finally, the proposed project is not expected to exacerbate any queuing issues on the SR 89 approaches to Squaw Valley Road. As such, the proposed project is considered to have a minimal impact on intersection traffic queues.

Roadway LOS

The study roadway (SR 89) is shown to operate within the established LOS standards under all existing year scenarios. SR 89 would continue to operate within the LOS thresholds under all winter future cumulative analysis periods, with or without the proposed project. However, summer future cumulative conditions exceed the threshold at SR 89 immediately north of Squaw Valley Road, due to growth in future background traffic. The proposed project would not exceed the County's minimum LOS policies for this roadway segment. As such, no roadway LOS mitigation measures are expected to be necessary.

Consistency with Squaw Valley General Plan

The project's consistency with the key policies and requirements set forth in the 1983 *Squaw Valley General Plan* Traffic/Circulation section (as presented above) was evaluated. As the *General Plan* policies regarding traffic operations on Squaw Valley Road are limited to the impacts of "sports/recreation land use", they do not directly pertain to a proposed museum use. The following summary is therefore provided for informational purposes only.

Implementation of the proposed project is expected to result in a negligible increase (a calculated increase of approximately 0.2 seconds per vehicle) in average vehicular delays at the SR 89/Squaw Valley Road intersection during the winter PM period. During the summer peak hours, average driver delays at intersections are calculated to increase by up to 1.6 seconds per vehicle. Summer LOS remains relatively good (LOS C or better) and well attains LOS standards. In addition, as implementation of the proposed project in the existing year is not expected to materially affect the intersection traffic queue lengths during winter or summer peak periods, the project would not be expected to worsen present peak-period congestion.

According to the Draft EIR for the Base-to-Base Gondola Project, Squaw Valley Road currently operates at an acceptable LOS B during the winter, with an existing ADT of 13,100. (The ADT in summer is typically lower than winter.) The maximum ADT threshold for LOS B is 15,750. With implementation of the proposed museum project, the ADT on Squaw Valley Road would be well within this threshold. As such, the project would not deteriorate the LOS on the area's road network within Squaw Valley. Additionally, the existing LOS at the intersections along SR 89 would not degrade as a result of the proposed project.

In addition, the proposed project would not be expected to significantly increase the duration or number of occurrences of any existing traffic queuing issues or LOS issues within Squaw Valley, or at intersections along SR 89.

Given that the *Squaw Valley General Plan* includes no policies directly pertinent to a proposed museum land use, the project's impact on driver delays would be negligible in winter and minimal in summer, the project would not materially affect existing traffic queue lengths during peak periods, the project would not deteriorate the existing LOS on the Squaw Valley roadway network during peak periods, and that the existing LOS at intersections along SR 89 would not deteriorate, no inconsistencies with the General Plan are identified.

Mitigation Summary

No mitigation measures are identified as a part of this analysis.

Conclusions

In sum, the proposed project would result in a relatively small increase in traffic volumes on the adjacent roadways. As a key example, the eastbound winter peak-hour traffic volume on Squaw Valley Road approaching SR 89 would be increased by 27 vehicles (roughly 1 vehicle every 2 minutes), or 3 percent over existing volumes. However, there would be no degradations in intersection or roadway level of service under any study periods or analysis

scenarios. The proposed project is not inconsistent with the traffic policies of the Squaw Valley General Plan.

Attached: Appendix A – LOS Descriptions
 Appendix B – Placer County’s “Impact Analysis Methodology of Assessment”
 Appendix C – LOS Simulation Output

DESCRIPTIONS OF LEVELS OF SERVICE

The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level of service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with level of service A representing the best operating conditions and level of service F the worst.

Level of Service Definitions

In general, the various levels of service are defined as follows for uninterrupted flow facilities:

- **Level of service A** represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.
- **Level of service B** is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.
- **Level of service C** is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.
- **Level of Service D** represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
- **Level of service E** represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to “give way” to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.
- **Level of service F** is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level of service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and level of service F is an appropriate designation for such points.

MEMORANDUM

DEPARTMENT OF PUBLIC WORKS AND FACILITIES County of Placer

TO: Placer County Public Works DATE: October 5, 2015

FROM: Ken Grehm, Director

SUBJECT: **IMPACT ANALYSIS METHODOLOGY OF ASSESSMENT**

Placer County, along with surrounding jurisdictions, has experienced significant growth in recent years. The resulting traffic volume increases on County roadways and intersections have outpaced available roadway and intersection infrastructure construction activities. Achieving Level of Service (LOS) policy(s), as shown in the current Placer County General Plan, various Community Plans, and Specific Plans, remains the goal on all Placer County roadway facilities.

Due to overall decreases in operational efficiency and infrastructure construction timing throughout the County, some of the existing transportation networks are occasionally overburdened and traffic operations have declined. Development project proposals which would generate small amounts of new traffic are more and more often expected to fund large improvements because nearby roadways or intersections already operate just within or below the County LOS policies. Available roadway and/or intersection capacities for small increases in traffic volumes can be limited without relatively large infrastructure upgrade requirements. This can cause smaller development projects to become economically infeasible.

Placer County has developed the following methodology of assessment of project impact(s) for County roadway segments and/or intersections associated with LOS standards as defined in the General Plan, Community Plans, and Specific Plans within Placer County. The goal of this methodology of assessment is to ensure that project associated construction mitigation(s) are proportionate to the level of impact a specific project has on an intersection or roadway.

Traffic Impact Analysis:

If necessary, a traffic impact analysis shall be performed which includes the following analysis scenarios; Existing, Existing plus Project, Cumulative, and Cumulative plus Project. The project applicant/consultant shall consult with the Department of Public Works and Facilities prior to beginning the Traffic Impact Analysis (TIA) to finalize a scope of work.

Roadway Segment Assessment Methodology:

A project may be considered to exceed the minimum LOS policies if;

- 1) A roadway segment operating at or above the established Placer County policy without the project traffic trips will decrease to an unacceptable LOS with the project; or
- 2) A roadway segment currently operating below the established acceptable LOS policy will experience an increase in V/C (volume to capacity) ratio of 0.05 or greater with the project; or
- 3) A roadway segment currently operating below the established acceptable LOS policy experience an increase in ADT of 100 or more project generated trips, per lane.

Signalized Intersection Assessment Methodology:

A project may be considered to exceed the minimum LOS policies if;

- 1) An intersection operating at or above the established Placer County policies without the project traffic trips will decrease to an unacceptable LOS with the project; or
- 2) An intersection currently operating below the established acceptable LOS policy will experience an increase in the V/C (volume to capacity) ratio of 0.05 (5%) or greater; or
- 3) An intersection currently operating below the established acceptable LOS policy will experience an increase in overall average intersection delay of 4 seconds or greater.

Unsignalized Intersection Assessment Methodology:

A project may be considered to exceed the minimum LOS policies if;

- 1) An all way stop or side street controlled intersection, which currently operates at or above the established Placer County policies without the project, will deteriorate to an unacceptable LOS with the project and cause the intersection to meet MUTCD traffic signal warrant(s)¹
or

- 2) An all way stop or side street controlled intersection which currently operates below the established acceptable LOS policy and meets MUTCD signal warrant(s)¹ will experience an increase of 2.5 seconds² or more with the project.

Further consideration will be given in situations where the existing level of service is just above or at the approved minimum level of service and any increase in vehicle trips, or even daily fluctuations in traffic, will deteriorate the level of service to an unacceptable level. In such cases, it may be determined by the County that part (2) or (3) of the above exceptions is more applicable and should be used to analyze a proposed project's impacts.

- ¹ Applicable MUTCD signal warrants to be determined in consultation with DPW Transportation staff. (2010 HCM)
- ² Intersection delay for all-way stop intersections to be defined as the "overall intersection delay". Intersection delay for side street stop intersections to be defined as the "overall weighted average delay for movements yielding the ROW." (2010 HCM)

1: SR 89 & Squaw Valley Rd Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	2.6	0.0	0.1	1.1	3.4	1.0	0.1	8.3
Total Del/Veh (s)	13.7	1.0	1.9	27.3	17.7	17.9	2.2	14.3
Avg Speed (mph)	7	20	14	9	15	10	20	11
Vehicles Entered	688	1	219	144	680	200	147	2079
Vehicles Exited	688	1	219	145	678	200	148	2079
Hourly Exit Rate	688	1	219	145	678	200	148	2079
Input Volume	664	1	219	153	699	202	143	2081
% of Volume	104	100	100	95	97	99	103	100

2: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.2	0.2
Avg Speed (mph)	34	34
Vehicles Entered	306	306
Vehicles Exited	306	306
Hourly Exit Rate	306	306
Input Volume	308	308
% of Volume	99	99

3: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	1.2	1.2
Total Del/Veh (s)	3.2	3.2
Avg Speed (mph)	36	36
Vehicles Entered	1395	1395
Vehicles Exited	1396	1396
Hourly Exit Rate	1396	1396
Input Volume	1403	1403
% of Volume	100	100

4: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.4	0.4
Avg Speed (mph)	45	45
Vehicles Entered	412	412
Vehicles Exited	412	412
Hourly Exit Rate	412	412
Input Volume	415	415
% of Volume	99	99

6: Squaw Valley Rd & 7-11 driveway Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.4	0.3	0.0	0.0	0.0	0.7
Total Del/Veh (s)	4.8	1.5	3.5	2.7	19.8	3.5	2.1
Avg Speed (mph)	14	26	13	11	7	14	20
Vehicles Entered	31	903	279	14	5	26	1258
Vehicles Exited	31	903	280	14	5	26	1259
Hourly Exit Rate	31	903	280	14	5	26	1259
Input Volume	36	879	281	15	5	27	1243
% of Volume	86	103	100	93	100	96	101

7: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.3	0.3
Avg Speed (mph)	22	22
Vehicles Entered	45	45
Vehicles Exited	45	45
Hourly Exit Rate	45	45
Input Volume	51	51
% of Volume	88	88

8: Site access & Squaw Valley Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.5	0.2	0.0	0.0	0.1	0.1	0.3
Total Delay (hr)	0.2	0.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	0.8	0.6	6.6	0.5	23.6	7.5	0.9
Avg Speed (mph)	33	27	12	29	6	11	32
Vehicles Entered	928	3	5	302	6	6	1250
Vehicles Exited	927	3	5	302	6	6	1249
Hourly Exit Rate	927	3	5	302	6	6	1249
Input Volume	909	5	5	304	5	5	1233
% of Volume	102	60	100	99	120	120	101

9: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.4	0.4
Avg Speed (mph)	21	21
Vehicles Entered	8	8
Vehicles Exited	8	8
Hourly Exit Rate	8	8
Input Volume	10	10
% of Volume	80	80

10: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.2	0.0	0.2
Denied Del/Veh (s)	0.9	0.0	0.6
Total Delay (hr)	0.4	1.0	1.4
Total Del/Veh (s)	1.9	8.6	4.1
Avg Speed (mph)	23	20	21
Vehicles Entered	824	411	1235
Vehicles Exited	825	412	1237
Hourly Exit Rate	825	412	1237
Input Volume	852	415	1267
% of Volume	97	99	98

11: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	2.6	0.1	2.7
Total Del/Veh (s)	7.0	1.0	5.8
Avg Speed (mph)	17	33	18
Vehicles Entered	1366	342	1708
Vehicles Exited	1365	341	1706
Hourly Exit Rate	1365	341	1706
Input Volume	1363	339	1702
% of Volume	100	101	100

12: SR 89 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	2.9	0.5	0.0	0.0	0.0	0.0	3.4
Denied Del/Veh (s)	230.1	232.3	0.0	0.0	0.3	0.3	6.7
Total Delay (hr)	5.3	0.8	0.0	0.7	0.2	0.0	6.9
Total Del/Veh (s)	461.1	453.4	2.2	1.9	1.9	0.1	13.9
Avg Speed (mph)	0	0	13	24	41	34	8
Vehicles Entered	39	6	6	1383	335	26	1795
Vehicles Exited	34	6	6	1383	336	26	1791
Hourly Exit Rate	34	6	6	1383	336	26	1791
Input Volume	45	6	5	1379	333	27	1795
% of Volume	76	100	120	100	101	96	100

13: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.1	0.1
Avg Speed (mph)	21	21
Vehicles Entered	31	31
Vehicles Exited	31	31
Hourly Exit Rate	31	31
Input Volume	32	32
% of Volume	97	97

Total Network Performance

Denied Delay (hr)	3.7
Denied Del/Veh (s)	5.9
Total Delay (hr)	21.8
Total Del/Veh (s)	34.5
Avg Speed (mph)	18
Vehicles Entered	2235
Vehicles Exited	2234
Hourly Exit Rate	2234
Input Volume	11540
% of Volume	19

Intersection: 1: SR 89 & Squaw Valley Rd

Movement	EB	EB	NB	NB	NB	SB
Directions Served	L	LT	L	T	TR	T
Maximum Queue (ft)	209	164	171	293	248	169
Average Queue (ft)	135	97	77	155	98	71
95th Queue (ft)	194	159	135	257	218	134
Link Distance (ft)	156	156		488		260
Upstream Blk Time (%)	4	0				
Queuing Penalty (veh)	10	1				
Storage Bay Dist (ft)			500		300	
Storage Blk Time (%)				0		0
Queuing Penalty (veh)				1		1

Intersection: 6: Squaw Valley Rd & 7-11 driveway

Movement	EB	EB	SB
Directions Served	LT	T	LR
Maximum Queue (ft)	105	30	62
Average Queue (ft)	20	1	21
95th Queue (ft)	69	18	50
Link Distance (ft)	176	176	332
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Site access & Squaw Valley Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	39	32
Average Queue (ft)	3	8
95th Queue (ft)	20	26
Link Distance (ft)	176	284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: SR 89

Movement	EB	NB	NB	B11	B11
Directions Served	LR	L	T	T	
Maximum Queue (ft)	200	24	48	343	261
Average Queue (ft)	149	2	4	56	18
95th Queue (ft)	249	13	25	242	124
Link Distance (ft)	198		76	260	260
Upstream Blk Time (%)	40			1	0
Queuing Penalty (veh)	0			9	1
Storage Bay Dist (ft)		75			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 23

1: SR 89 & Squaw Valley Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	NBL	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0		0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	0.8	0.0	0.1	0.0	0.8	0.9	0.0	1.5	0.1	4.4
Total Del/Veh (s)	15.5		1.8	23.2	18.1	6.5	28.8	12.8	2.4	9.5
Avg Speed (mph)	7	34	14	2	12	28	6	13	19	16
Vehicles Entered	194	0	181	1	164	521	3	427	159	1650
Vehicles Exited	193	0	181	1	164	521	3	426	158	1647
Hourly Exit Rate	193	0	181	1	164	521	3	426	158	1647
Input Volume	196	1	178	1	159	528	3	441	158	1665
% of Volume	98	0	102	100	103	99	100	97	100	99

2: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.2	0.2
Avg Speed (mph)	34	34
Vehicles Entered	310	310
Vehicles Exited	311	311
Hourly Exit Rate	311	311
Input Volume	305	305
% of Volume	102	102

3: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.2	0.2
Total Del/Veh (s)	0.9	0.9
Avg Speed (mph)	45	45
Vehicles Entered	758	758
Vehicles Exited	757	757
Hourly Exit Rate	757	757
Input Volume	764	764
% of Volume	99	99

4: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.1	0.1
Total Del/Veh (s)	0.5	0.5
Avg Speed (mph)	45	45
Vehicles Entered	598	598
Vehicles Exited	598	598
Hourly Exit Rate	598	598
Input Volume	608	608
% of Volume	98	98

5: External Performance by approach

Approach	EB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	1.1	1.1
Avg Speed (mph)	16	16
Vehicles Entered	3	3
Vehicles Exited	3	3
Hourly Exit Rate	3	3
Input Volume	3	3
% of Volume	100	100

6: Squaw Valley Rd & 7-11 driveway Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.3	0.0	0.0	0.0	0.5
Total Del/Veh (s)	4.6	1.0	3.8	2.0	14.8	3.1	2.4
Avg Speed (mph)	14	27	13	12	9	14	17
Vehicles Entered	17	371	299	23	4	27	741
Vehicles Exited	17	370	299	23	4	27	740
Hourly Exit Rate	17	370	299	23	4	27	740
Input Volume	19	369	297	20	5	25	735
% of Volume	89	100	101	115	80	108	101

7: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.2	0.2
Avg Speed (mph)	22	22
Vehicles Entered	40	40
Vehicles Exited	41	41
Hourly Exit Rate	41	41
Input Volume	39	39
% of Volume	105	105

8: Site access & Squaw Valley Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.3	0.1	0.0	0.0	0.1	0.1	0.2
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	0.3	0.0	3.1	0.5	7.2	3.2	0.6
Avg Speed (mph)	34	28	16	29	11	13	31
Vehicles Entered	366	3	19	307	4	21	720
Vehicles Exited	367	3	19	308	4	21	722
Hourly Exit Rate	367	3	19	308	4	21	722
Input Volume	369	3	20	303	3	19	717
% of Volume	99	100	95	102	133	111	101

9: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.3	0.3
Avg Speed (mph)	22	22
Vehicles Entered	22	22
Vehicles Exited	22	22
Hourly Exit Rate	22	22
Input Volume	23	23
% of Volume	96	96

10: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.1	0.0	0.1
Denied Del/Veh (s)	0.6	0.0	0.3
Total Delay (hr)	0.3	1.3	1.6
Total Del/Veh (s)	1.8	7.5	4.5
Avg Speed (mph)	24	23	23
Vehicles Entered	687	597	1284
Vehicles Exited	686	598	1284
Hourly Exit Rate	686	598	1284
Input Volume	687	608	1295
% of Volume	100	98	99

11: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	0.5	0.2	0.7
Total Del/Veh (s)	2.3	1.3	1.9
Avg Speed (mph)	29	30	29
Vehicles Entered	714	580	1294
Vehicles Exited	714	580	1294
Hourly Exit Rate	714	580	1294
Input Volume	724	590	1314
% of Volume	99	98	98

12: SR 89 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.5	0.4	0.2
Total Delay (hr)	0.3	0.0	0.0	0.1	0.4	0.0	0.9
Total Del/Veh (s)	23.9	9.2	4.1	0.6	2.6	0.4	2.3
Avg Speed (mph)	4	9	10	39	38	30	32
Vehicles Entered	48	6	5	724	573	28	1384
Vehicles Exited	48	6	5	724	573	28	1384
Hourly Exit Rate	48	6	5	724	573	28	1384
Input Volume	45	6	5	735	584	25	1400
% of Volume	107	100	100	99	98	112	99

13: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.1	0.1
Avg Speed (mph)	19	19
Vehicles Entered	33	33
Vehicles Exited	32	32
Hourly Exit Rate	32	32
Input Volume	30	30
% of Volume	107	107

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.5
Total Delay (hr)	8.4
Total Del/Veh (s)	16.8
Avg Speed (mph)	25
Vehicles Entered	1794
Vehicles Exited	1790
Hourly Exit Rate	1790
Input Volume	8898
% of Volume	20

Intersection: 1: SR 89 & Squaw Valley Rd

Movement	EB	EB	WB	NB	NB	NB	SB	SB	SB	B11
Directions Served	L	LT	LTR	L	T	TR	L	T	R	T
Maximum Queue (ft)	110	91	24	133	149	104	58	210	52	30
Average Queue (ft)	61	20	1	69	56	11	4	96	2	2
95th Queue (ft)	95	60	11	114	113	55	32	184	37	31
Link Distance (ft)	156	156	94		488			260		76
Upstream Blk Time (%)								1	0	0
Queuing Penalty (veh)								4	0	3
Storage Bay Dist (ft)				500		300	160		280	
Storage Blk Time (%)								2	0	
Queuing Penalty (veh)								3	0	

Intersection: 6: Squaw Valley Rd & 7-11 driveway

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	52	61
Average Queue (ft)	9	21
95th Queue (ft)	35	49
Link Distance (ft)	176	332
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Site access & Squaw Valley Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	40	32
Average Queue (ft)	6	13
95th Queue (ft)	26	33
Link Distance (ft)	176	284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	77
Average Queue (ft)	3
95th Queue (ft)	54
Link Distance (ft)	488
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: SR 89

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	74	31	11	19
Average Queue (ft)	33	3	0	1
95th Queue (ft)	67	16	6	16
Link Distance (ft)	198		76	479
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		75		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 10

1: SR 89 & Squaw Valley Rd Performance by movement

Movement	EBL	EBT	EBR	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0		0.3	0.0	0.1
Total Delay (hr)	0.6	0.0	0.1	0.0	0.6	0.7	0.0	0.0	2.9	0.2	5.0
Total Del/Veh (s)	16.6	5.9	1.8	3.9	16.5	5.3	1.3		15.6	3.1	10.4
Avg Speed (mph)	6	12	14	8	13	31	28	10	11	18	15
Vehicles Entered	136	3	178	1	138	449	4	0	659	179	1747
Vehicles Exited	136	3	178	1	138	449	4	0	660	180	1749
Hourly Exit Rate	136	3	178	1	138	449	4	0	660	180	1749
Input Volume	138	2	175	1	130	461	3	1	678	178	1767
% of Volume	99	150	102	100	106	97	133	0	97	101	99

2: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.2	0.2
Avg Speed (mph)	34	34
Vehicles Entered	278	278
Vehicles Exited	279	279
Hourly Exit Rate	279	279
Input Volume	265	265
% of Volume	105	105

3: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.1	0.1
Total Del/Veh (s)	0.8	0.8
Avg Speed (mph)	46	46
Vehicles Entered	628	628
Vehicles Exited	628	628
Hourly Exit Rate	628	628
Input Volume	640	640
% of Volume	98	98

4: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.1	0.1
Total Del/Veh (s)	0.5	0.5
Avg Speed (mph)	43	43
Vehicles Entered	818	818
Vehicles Exited	818	818
Hourly Exit Rate	818	818
Input Volume	833	833
% of Volume	98	98

5: External Performance by approach

Approach	EB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.7	0.7
Avg Speed (mph)	16	16
Vehicles Entered	6	6
Vehicles Exited	6	6
Hourly Exit Rate	6	6
Input Volume	5	5
% of Volume	120	120

6: Squaw Valley Rd & 7-11 driveway Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.3	0.0	0.1	0.0	0.6
Total Del/Veh (s)	4.5	1.2	4.0	2.8	12.9	3.9	3.0
Avg Speed (mph)	14	24	12	11	9	14	15
Vehicles Entered	33	295	299	20	21	30	698
Vehicles Exited	33	295	300	20	21	31	700
Hourly Exit Rate	33	295	300	20	21	31	700
Input Volume	30	293	288	21	22	29	683
% of Volume	110	101	104	95	95	107	102

7: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.3	0.3
Avg Speed (mph)	22	22
Vehicles Entered	53	53
Vehicles Exited	53	53
Hourly Exit Rate	53	53
Input Volume	51	51
% of Volume	104	104

8: Site access & Squaw Valley Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.5	0.3	0.0	0.0	0.1	0.1	0.2
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	0.4	0.2	3.0	0.7	8.8	3.1	1.0
Avg Speed (mph)	34	27	16	28	10	14	28
Vehicles Entered	274	8	57	273	7	53	672
Vehicles Exited	274	8	58	273	7	53	673
Hourly Exit Rate	274	8	58	273	7	53	673
Input Volume	267	6	58	259	7	55	652
% of Volume	103	133	100	105	100	96	103

9: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.3	0.3
Avg Speed (mph)	22	22
Vehicles Entered	65	65
Vehicles Exited	65	65
Hourly Exit Rate	65	65
Input Volume	64	64
% of Volume	102	102

10: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.1	0.0	0.1
Denied Del/Veh (s)	0.5	0.0	0.2
Total Delay (hr)	0.3	1.8	2.1
Total Del/Veh (s)	1.8	7.9	5.4
Avg Speed (mph)	24	23	23
Vehicles Entered	591	820	1411
Vehicles Exited	591	818	1409
Hourly Exit Rate	591	818	1409
Input Volume	594	833	1427
% of Volume	99	98	99

11: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	0.3	0.4	0.7
Total Del/Veh (s)	1.9	1.9	1.9
Avg Speed (mph)	31	25	29
Vehicles Entered	585	823	1408
Vehicles Exited	586	822	1408
Hourly Exit Rate	586	822	1408
Input Volume	600	837	1437
% of Volume	98	98	98

12: SR 89 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.2	0.0	0.2
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.8	0.9	0.5
Total Delay (hr)	0.7	0.0	0.0	0.1	0.9	0.0	1.7
Total Del/Veh (s)	54.7	23.3	9.8	0.4	3.9	0.6	4.1
Avg Speed (mph)	2	4	6	41	33	27	26
Vehicles Entered	44	7	5	596	816	36	1504
Vehicles Exited	44	7	5	595	816	37	1504
Hourly Exit Rate	44	7	5	595	816	37	1504
Input Volume	45	6	5	609	831	46	1542
% of Volume	98	117	100	98	98	80	98

13: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.2	0.2
Avg Speed (mph)	19	19
Vehicles Entered	42	42
Vehicles Exited	42	42
Hourly Exit Rate	42	42
Input Volume	51	51
% of Volume	82	82

Total Network Performance

Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.7
Total Delay (hr)	10.7
Total Del/Veh (s)	19.7
Avg Speed (mph)	24
Vehicles Entered	1923
Vehicles Exited	1923
Hourly Exit Rate	1923
Input Volume	9417
% of Volume	20

Intersection: 1: SR 89 & Squaw Valley Rd

Movement	EB	EB	WB	NB	NB	NB	SB	SB	SB	B11
Directions Served	L	LT	LTR	L	T	TR	L	T	R	T
Maximum Queue (ft)	99	74	24	128	106	44	10	312	206	64
Average Queue (ft)	49	16	1	59	40	5	0	157	22	4
95th Queue (ft)	84	51	10	103	85	26	5	281	142	36
Link Distance (ft)	156	156	94		488			260		76
Upstream Blk Time (%)								2	0	0
Queuing Penalty (veh)								14	0	3
Storage Bay Dist (ft)				500		300	160		280	
Storage Blk Time (%)								8	0	
Queuing Penalty (veh)								15	1	

Intersection: 6: Squaw Valley Rd & 7-11 driveway

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	67	68
Average Queue (ft)	14	28
95th Queue (ft)	46	51
Link Distance (ft)	176	332
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Site access & Squaw Valley Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	40	52
Average Queue (ft)	13	23
95th Queue (ft)	40	42
Link Distance (ft)	176	284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: SR 89

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	103	30	12	24
Average Queue (ft)	42	4	0	1
95th Queue (ft)	89	20	6	17
Link Distance (ft)	198		76	479
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		75		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 33

1: SR 89 & Squaw Valley Rd Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	2.7	0.0	0.1	1.1	3.5	1.0	0.1	8.5
Total Del/Veh (s)	14.0	2.2	1.9	27.2	18.0	18.4	2.1	14.5
Avg Speed (mph)	7	19	14	9	15	9	20	11
Vehicles Entered	696	2	231	145	701	193	142	2110
Vehicles Exited	695	2	231	145	700	194	142	2109
Hourly Exit Rate	695	2	231	145	700	194	142	2109
Input Volume	683	1	227	154	699	202	144	2110
% of Volume	102	200	102	94	100	96	99	100

2: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.2	0.2
Avg Speed (mph)	34	34
Vehicles Entered	296	296
Vehicles Exited	297	297
Hourly Exit Rate	297	297
Input Volume	311	311
% of Volume	95	95

3: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	1.3	1.3
Total Del/Veh (s)	3.3	3.3
Avg Speed (mph)	36	36
Vehicles Entered	1414	1414
Vehicles Exited	1415	1415
Hourly Exit Rate	1415	1415
Input Volume	1423	1423
% of Volume	99	99

4: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.1	0.1
Total Del/Veh (s)	0.4	0.4
Avg Speed (mph)	45	45
Vehicles Entered	420	420
Vehicles Exited	419	419
Hourly Exit Rate	419	419
Input Volume	423	423
% of Volume	99	99

6: Squaw Valley Rd & 7-11 driveway Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.4	0.3	0.0	0.0	0.0	0.7
Total Del/Veh (s)	4.7	1.5	3.5	2.3	22.0	2.7	2.1
Avg Speed (mph)	14	25	13	12	7	15	20
Vehicles Entered	30	926	272	15	3	22	1268
Vehicles Exited	31	925	274	15	3	22	1270
Hourly Exit Rate	31	925	274	15	3	22	1270
Input Volume	38	905	283	15	5	27	1273
% of Volume	82	102	97	100	60	81	100

7: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.4	0.4
Avg Speed (mph)	22	22
Vehicles Entered	45	45
Vehicles Exited	45	45
Hourly Exit Rate	45	45
Input Volume	53	53
% of Volume	85	85

8: Site access & Squaw Valley Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.5	0.2	0.0	0.0	0.1	0.1	0.3
Total Delay (hr)	0.2	0.0	0.0	0.0	0.0	0.1	0.4
Total Del/Veh (s)	0.9	0.2	7.9	0.5	16.0	7.6	1.1
Avg Speed (mph)	33	29	11	29	7	10	31
Vehicles Entered	926	7	6	290	7	32	1268
Vehicles Exited	924	7	6	291	6	32	1266
Hourly Exit Rate	924	7	6	291	6	32	1266
Input Volume	909	10	7	304	8	34	1272
% of Volume	102	70	86	96	75	94	100

9: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.3	0.3
Avg Speed (mph)	21	21
Vehicles Entered	13	13
Vehicles Exited	13	13
Hourly Exit Rate	13	13
Input Volume	17	17
% of Volume	76	76

10: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.2	0.0	0.2
Denied Del/Veh (s)	0.9	0.0	0.6
Total Delay (hr)	0.4	1.0	1.5
Total Del/Veh (s)	1.9	8.8	4.2
Avg Speed (mph)	23	20	21
Vehicles Entered	846	419	1265
Vehicles Exited	846	420	1266
Hourly Exit Rate	846	420	1266
Input Volume	853	423	1276
% of Volume	99	99	99

11: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	2.7	0.1	2.8
Total Del/Veh (s)	7.0	1.0	5.9
Avg Speed (mph)	17	34	18
Vehicles Entered	1395	330	1725
Vehicles Exited	1392	330	1722
Hourly Exit Rate	1392	330	1722
Input Volume	1382	340	1722
% of Volume	101	97	100

12: SR 89 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	3.7	0.4	0.0	0.0	0.0	0.0	4.2
Denied Del/Veh (s)	326.8	217.5	0.0	0.0	0.3	0.3	8.3
Total Delay (hr)	6.4	1.1	0.0	0.8	0.2	0.0	8.5
Total Del/Veh (s)	661.7	647.5	2.8	2.0	1.9	0.1	16.8
Avg Speed (mph)	0	0	13	24	41	34	7
Vehicles Entered	32	6	6	1408	325	28	1805
Vehicles Exited	27	5	6	1409	325	28	1800
Hourly Exit Rate	27	5	6	1409	325	28	1800
Input Volume	46	7	5	1398	333	27	1816
% of Volume	59	71	120	101	98	104	99

13: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.1	0.1
Avg Speed (mph)	21	21
Vehicles Entered	34	34
Vehicles Exited	34	34
Hourly Exit Rate	34	34
Input Volume	32	32
% of Volume	106	106

Total Network Performance

Denied Delay (hr)	4.5
Denied Del/Veh (s)	7.1
Total Delay (hr)	23.8
Total Del/Veh (s)	37.4
Avg Speed (mph)	18
Vehicles Entered	2263
Vehicles Exited	2253
Hourly Exit Rate	2253
Input Volume	11728
% of Volume	19

Intersection: 1: SR 89 & Squaw Valley Rd

Movement	EB	EB	NB	NB	NB	SB
Directions Served	L	LT	L	T	TR	T
Maximum Queue (ft)	216	160	160	305	256	159
Average Queue (ft)	140	100	77	159	97	69
95th Queue (ft)	201	154	134	256	208	130
Link Distance (ft)	156	156		488		260
Upstream Blk Time (%)	4	0				
Queuing Penalty (veh)	13	1				
Storage Bay Dist (ft)			500		300	
Storage Blk Time (%)				0	0	0
Queuing Penalty (veh)				1	0	0

Intersection: 6: Squaw Valley Rd & 7-11 driveway

Movement	EB	EB	WB	SB
Directions Served	LT	T	TR	LR
Maximum Queue (ft)	93	25	13	67
Average Queue (ft)	21	1	0	20
95th Queue (ft)	68	14	5	49
Link Distance (ft)	176	176	156	332
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Site access & Squaw Valley Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	51	63
Average Queue (ft)	5	20
95th Queue (ft)	27	45
Link Distance (ft)	176	284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: SR 89






















Movement	EB	NB	NB	B11	B11
Directions Served	LR	L	T	T	
Maximum Queue (ft)	217	33	49	323	245
Average Queue (ft)	176	2	6	55	13
95th Queue (ft)	262	15	31	242	108
Link Distance (ft)	198		76	260	260
Upstream Blk Time (%)	66			1	0
Queuing Penalty (veh)	0			9	1
Storage Bay Dist (ft)		75			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 26

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	683	0	227	0	0	0	154	699	0	0	196	144
Future Volume (vph)	683	0	227	0	0	0	154	699	0	0	196	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	500		300	160		280
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected	0.950	0.950					0.950					
Satd. Flow (prot)	1681	1681	1583	0	1863	0	1770	3438	0	1863	1810	1583
Flt Permitted	0.950	0.950					0.950					
Satd. Flow (perm)	1681	1681	1583	0	1863	0	1770	3438	0	1863	1810	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			247									182
Link Speed (mph)		35			25			55			55	
Link Distance (ft)		233			143			555			325	
Travel Time (s)		4.5			3.9			6.9			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	742	0	247	0	0	0	167	760	0	0	213	157
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	371	371	247	0	0	0	167	760	0	0	213	157
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm				Prot	NA		Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4	8								6
Detector Phase	4	4	4	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	10.0	10.0		9.5	22.5		9.5	22.5	22.5
Total Split (s)	38.0	38.0	38.0	10.0	10.0		17.0	32.5		9.5	25.0	25.0
Total Split (%)	42.2%	42.2%	42.2%	11.1%	11.1%		18.9%	36.1%		10.6%	27.8%	27.8%
Maximum Green (s)	33.5	33.5	33.5	5.5	5.5		12.5	28.0		5.0	20.5	20.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5		4.5	4.5		4.5	4.5	4.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	Min	Min
Walk Time (s)	7.0	7.0	7.0					7.0			7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0					11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0	0					0			0	0
Act Effct Green (s)	21.3	21.3	21.3				10.8	28.5			12.9	12.9
Actuated g/C Ratio	0.36	0.36	0.36				0.18	0.48			0.22	0.22
v/c Ratio	0.61	0.61	0.34				0.52	0.46			0.54	0.32
Control Delay	21.0	21.0	3.6				31.9	12.4			28.4	5.1
Queue Delay	0.0	0.0	0.0				0.0	0.0			0.0	0.0
Total Delay	21.0	21.0	3.6				31.9	12.4			28.4	5.1
LOS	C	C	A				C	B			C	A
Approach Delay		16.6						15.9			18.6	
Approach LOS		B						B			B	
Queue Length 50th (ft)	111	111	0				54	88			69	0
Queue Length 95th (ft)	221	221	40				139	177			154	33
Internal Link Dist (ft)		153			63			475			245	
Turn Bay Length (ft)							500					280
Base Capacity (vph)	1004	1004	1045				394	1846			661	694
Starvation Cap Reductn	0	0	0				0	0			0	0
Spillback Cap Reductn	0	0	0				0	0			0	0
Storage Cap Reductn	0	0	0				0	0			0	0
Reduced v/c Ratio	0.37	0.37	0.24				0.42	0.41			0.32	0.23

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	59.3
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.61
Intersection Signal Delay:	16.6
Intersection LOS:	B
Intersection Capacity Utilization:	53.7%
ICU Level of Service:	A
Analysis Period (min):	15

Lanes, Volumes, Timings
 1: SR 89 & Squaw Valley Rd

02/19/2020

Splits and Phases: 1: SR 89 & Squaw Valley Rd

↙ Ø1	↑ Ø2	↘ Ø4	← Ø8
9.5 s	32.5 s	38 s	10 s
↙ Ø5	↓ Ø6		
17 s	25 s		

Lanes, Volumes, Timings
6: Squaw Valley Rd & 7-11 driveway

02/19/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑		↓	
Traffic Volume (vph)	38	905	283	15	5	27
Future Volume (vph)	38	905	283	15	5	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Frt			0.993		0.885	
Flt Protected		0.998			0.993	
Satd. Flow (prot)	0	5075	1850	0	1637	0
Flt Permitted		0.998			0.993	
Satd. Flow (perm)	0	5075	1850	0	1637	0
Link Speed (mph)		35	35		20	
Link Distance (ft)		210	233		372	
Travel Time (s)		4.1	4.5		12.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	984	308	16	5	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1025	324	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.4% ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings
8: Site access & Squaw Valley Rd

02/19/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑	
Traffic Volume (vph)	909	10	7	303	8	34
Future Volume (vph)	909	10	7	303	8	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	80		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00
Frt	0.998				0.891	
Flt Protected				0.999	0.990	
Satd. Flow (prot)	5075	0	0	3536	1643	0
Flt Permitted				0.999	0.990	
Satd. Flow (perm)	5075	0	0	3536	1643	0
Link Speed (mph)	35			35	20	
Link Distance (ft)	785			210	348	
Travel Time (s)	15.3			4.1	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	988	11	8	329	9	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	999	0	0	337	46	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

12: SR 89

02/19/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	46	7	5	1377	333	27
Future Volume (vph)	46	7	5	1377	333	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981				0.990	
Flt Protected	0.959		0.950			
Satd. Flow (prot)	1752	0	1770	1863	1844	0
Flt Permitted	0.959		0.950			
Satd. Flow (perm)	1752	0	1770	1863	1844	0
Link Speed (mph)	30			55	55	
Link Distance (ft)	236			130	511	
Travel Time (s)	5.4			1.6	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	8	5	1497	362	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	5	1497	391	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	82.5%
ICU Level of Service	E
Analysis Period (min)	15

1: SR 89 & Squaw Valley Rd Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.9	0.1	0.0	0.8	1.0	0.0	1.6	0.1	4.5
Total Del/Veh (s)	15.7	1.9		18.2	6.8	25.3	12.8	2.4	9.6
Avg Speed (mph)	7	14	2	12	27	7	13	19	16
Vehicles Entered	201	192	0	163	513	2	438	160	1669
Vehicles Exited	201	192	0	164	511	2	437	160	1667
Hourly Exit Rate	201	192	0	164	511	2	437	160	1667
Input Volume	204	188	1	161	528	3	441	161	1687
% of Volume	99	102	0	102	97	67	99	99	99

2: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.2	0.2
Avg Speed (mph)	34	34
Vehicles Entered	313	313
Vehicles Exited	315	315
Hourly Exit Rate	315	315
Input Volume	308	308
% of Volume	102	102

3: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.2	0.2
Total Del/Veh (s)	1.0	1.0
Avg Speed (mph)	45	45
Vehicles Entered	747	747
Vehicles Exited	747	747
Hourly Exit Rate	747	747
Input Volume	767	767
% of Volume	97	97

4: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.1	0.1
Total Del/Veh (s)	0.5	0.5
Avg Speed (mph)	44	44
Vehicles Entered	617	617
Vehicles Exited	617	617
Hourly Exit Rate	617	617
Input Volume	618	618
% of Volume	100	100

5: External Performance by approach

Approach	EB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	1.1	1.1
Avg Speed (mph)	16	16
Vehicles Entered	2	2
Vehicles Exited	2	2
Hourly Exit Rate	2	2
Input Volume	3	3
% of Volume	67	67

6: Squaw Valley Rd & 7-11 driveway Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.3	0.0	0.0	0.0	0.5
Total Del/Veh (s)	5.0	1.1	3.6	3.0	10.9	2.8	2.4
Avg Speed (mph)	13	26	13	11	10	15	17
Vehicles Entered	20	387	306	17	6	27	763
Vehicles Exited	20	386	305	17	6	27	761
Hourly Exit Rate	20	386	305	17	6	27	761
Input Volume	20	387	302	20	5	25	759
% of Volume	100	100	101	85	120	108	100

7: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.3	0.3
Avg Speed (mph)	22	22
Vehicles Entered	38	38
Vehicles Exited	37	37
Hourly Exit Rate	37	37
Input Volume	40	40
% of Volume	92	92

8: Site access & Squaw Valley Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.4	0.1	0.0	0.0	0.1	0.1	0.2
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	0.3	0.3	3.3	0.6	8.2	3.5	0.8
Avg Speed (mph)	34	28	15	29	11	13	30
Vehicles Entered	363	3	25	307	6	43	747
Vehicles Exited	364	3	25	307	6	43	748
Hourly Exit Rate	364	3	25	307	6	43	748
Input Volume	369	4	25	302	6	38	744
% of Volume	99	75	100	102	100	113	101

9: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.3	0.3
Avg Speed (mph)	22	22
Vehicles Entered	28	28
Vehicles Exited	28	28
Hourly Exit Rate	28	28
Input Volume	29	29
% of Volume	97	97

10: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.1	0.0	0.1
Denied Del/Veh (s)	0.6	0.0	0.3
Total Delay (hr)	0.3	1.3	1.7
Total Del/Veh (s)	1.8	7.7	4.6
Avg Speed (mph)	24	23	23
Vehicles Entered	675	617	1292
Vehicles Exited	676	617	1293
Hourly Exit Rate	676	617	1293
Input Volume	689	618	1307
% of Volume	98	100	99

11: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	0.5	0.2	0.7
Total Del/Veh (s)	2.4	1.2	1.9
Avg Speed (mph)	28	31	29
Vehicles Entered	712	588	1300
Vehicles Exited	712	588	1300
Hourly Exit Rate	712	588	1300
Input Volume	732	593	1325
% of Volume	97	99	98

12: SR 89 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.5	0.5	0.2
Total Delay (hr)	0.3	0.0	0.0	0.1	0.4	0.0	0.8
Total Del/Veh (s)	26.6	10.7	3.8	0.6	2.5	0.2	2.1
Avg Speed (mph)	4	8	11	38	38	31	33
Vehicles Entered	37	5	3	726	584	24	1379
Vehicles Exited	37	5	3	726	583	24	1378
Hourly Exit Rate	37	5	3	726	583	24	1378
Input Volume	40	6	5	742	587	25	1405
% of Volume	92	83	60	98	99	96	98

13: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.1	0.1
Avg Speed (mph)	19	19
Vehicles Entered	27	27
Vehicles Exited	27	27
Hourly Exit Rate	27	27
Input Volume	30	30
% of Volume	90	90

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.5
Total Delay (hr)	8.6
Total Del/Veh (s)	17.0
Avg Speed (mph)	25
Vehicles Entered	1802
Vehicles Exited	1801
Hourly Exit Rate	1801
Input Volume	9022
% of Volume	20

Intersection: 1: SR 89 & Squaw Valley Rd

Movement	EB	EB	WB	NB	NB	NB	SB	SB	B11
Directions Served	L	LT	LTR	L	T	TR	L	T	T
Maximum Queue (ft)	115	96	9	160	119	91	22	216	9
Average Queue (ft)	61	23	0	71	59	10	2	100	0
95th Queue (ft)	100	67	5	126	108	45	13	178	6
Link Distance (ft)	156	156	94		488			260	76
Upstream Blk Time (%)	0							0	
Queuing Penalty (veh)	0							1	
Storage Bay Dist (ft)				500		300	160		
Storage Blk Time (%)								1	
Queuing Penalty (veh)								2	

Intersection: 6: Squaw Valley Rd & 7-11 driveway

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	57	49
Average Queue (ft)	9	22
95th Queue (ft)	37	46
Link Distance (ft)	176	332
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Site access & Squaw Valley Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	45	59
Average Queue (ft)	9	21
95th Queue (ft)	35	43
Link Distance (ft)	176	284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: SR 89























Movement	EB	NB	NB
Directions Served	LR	L	T
Maximum Queue (ft)	78	24	6
Average Queue (ft)	30	2	0
95th Queue (ft)	64	13	4
Link Distance (ft)	198		76
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		75	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 3

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	0	188	1	0	0	161	528	0	3	429	161
Future Volume (vph)	204	0	188	1	0	0	161	528	0	3	429	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	500		300	160		280
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected	0.950	0.950			0.950		0.950			0.950		
Satd. Flow (prot)	1681	1681	1583	0	1770	0	1770	3438	0	1770	1810	1583
Flt Permitted	0.950	0.950					0.950			0.950		
Satd. Flow (perm)	1681	1681	1583	0	1863	0	1770	3438	0	1770	1810	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			221									189
Link Speed (mph)		35			25			55			55	
Link Distance (ft)		233			143			555			325	
Travel Time (s)		4.5			3.9			6.9			4.0	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	240	0	221	1	0	0	189	621	0	4	505	189
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	120	120	221	0	1	0	189	621	0	4	505	189
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4	8								6
Detector Phase	4	4	4	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	10.0	10.0		22.5	22.5		9.5	22.5	22.5
Total Split (s)	38.0	38.0	38.0	10.0	10.0		22.5	32.5		9.5	25.0	25.0
Total Split (%)	39.8%	39.8%	39.8%	10.5%	10.5%		23.6%	34.0%		9.9%	26.2%	26.2%
Maximum Green (s)	33.5	33.5	33.5	5.5	5.5		18.0	28.0		5.0	20.5	20.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5		4.5	4.5		4.5	4.5	4.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	Min	Min
Walk Time (s)	7.0	7.0	7.0					7.0				
Flash Dont Walk (s)	11.0	11.0	11.0					11.0				
Pedestrian Calls (#/hr)	0	0	0					69				
Act Effct Green (s)	10.2	10.2	10.2		5.7		11.6	35.9		5.1	21.1	21.1
Actuated g/C Ratio	0.17	0.17	0.17		0.10		0.20	0.62		0.09	0.36	0.36
v/c Ratio	0.41	0.41	0.48		0.01		0.54	0.29		0.03	0.77	0.27
Control Delay	27.3	27.3	8.0		30.0		28.3	7.8		30.7	30.1	4.8
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	27.3	27.3	8.0		30.0		28.3	7.8		30.7	30.1	4.8
LOS	C	C	A		C		C	A		C	C	A
Approach Delay		18.1			30.0			12.6			23.3	
Approach LOS		B			C			B			C	
Queue Length 50th (ft)	36	36	0		0		55	34		1	136	0
Queue Length 95th (ft)	95	95	45		5		132	140		10	#420	39
Internal Link Dist (ft)		153			63			475			245	
Turn Bay Length (ft)							500			160		280
Base Capacity (vph)	994	994	1027		180		562	2133		156	655	693
Starvation Cap Reductn	0	0	0		0		0	0		0	0	0
Spillback Cap Reductn	0	0	0		0		0	0		0	0	0
Storage Cap Reductn	0	0	0		0		0	0		0	0	0
Reduced v/c Ratio	0.12	0.12	0.22		0.01		0.34	0.29		0.03	0.77	0.27

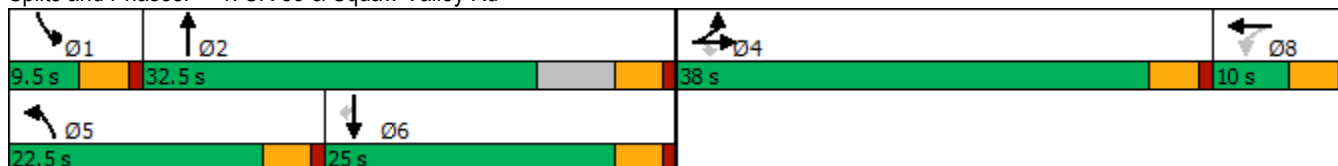
Intersection Summary

Area Type:	Other
Cycle Length:	95.5
Actuated Cycle Length:	58.3
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	17.7
Intersection LOS:	B
Intersection Capacity Utilization:	49.6%
ICU Level of Service:	A
Analysis Period (min):	15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 89 & Squaw Valley Rd



Lanes, Volumes, Timings
6: Squaw Valley Rd & 7-11 driveway

02/19/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑		↓	
Traffic Volume (vph)	20	387	302	20	5	25
Future Volume (vph)	20	387	302	20	5	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Frt			0.991		0.888	
Flt Protected		0.998			0.992	
Satd. Flow (prot)	0	5075	1846	0	1641	0
Flt Permitted		0.998			0.992	
Satd. Flow (perm)	0	5075	1846	0	1641	0
Link Speed (mph)		35	35		20	
Link Distance (ft)		210	233		372	
Travel Time (s)		4.1	4.5		12.7	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	24	455	355	24	6	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	479	379	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.6%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
8: Site access & Squaw Valley Rd

02/19/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑	
Traffic Volume (vph)	369	4	25	302	6	38
Future Volume (vph)	369	4	25	302	6	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	80		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00
Frt	0.998				0.883	
Flt Protected				0.996	0.993	
Satd. Flow (prot)	5075	0	0	3525	1633	0
Flt Permitted				0.996	0.993	
Satd. Flow (perm)	5075	0	0	3525	1633	0
Link Speed (mph)	35			35	20	
Link Distance (ft)	785			210	348	
Travel Time (s)	15.3			4.1	11.9	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	434	5	29	355	7	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	439	0	0	384	52	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

12: SR 89

02/19/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	40	6	5	727	587	25
Future Volume (vph)	40	6	5	727	587	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981				0.995	
Flt Protected	0.959		0.950			
Satd. Flow (prot)	1752	0	1770	1863	1853	0
Flt Permitted	0.959		0.950			
Satd. Flow (perm)	1752	0	1770	1863	1853	0
Link Speed (mph)	30			55	55	
Link Distance (ft)	236			130	511	
Travel Time (s)	5.4			1.6	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	7	5	790	638	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	5	790	665	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	48.3%
	ICU Level of Service A
Analysis Period (min)	15

1: SR 89 & Squaw Valley Rd Performance by movement

Movement	EBL	EBT	EBR	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.6	0.3	0.3
Total Delay (hr)	0.7	0.0	0.1	0.0	0.7	0.7	0.0	0.0	3.7	0.2	6.1
Total Del/Veh (s)	16.8	3.0	1.8	4.6	18.2	5.4	2.1	30.1	19.2	3.9	12.0
Avg Speed (mph)	6	16	14	7	12	30	26	5	9	16	14
Vehicles Entered	145	3	190	1	137	465	4	1	697	184	1827
Vehicles Exited	145	3	190	1	137	465	4	1	697	183	1826
Hourly Exit Rate	145	3	190	1	137	465	4	1	697	183	1826
Input Volume	149	2	186	1	133	461	3	1	678	181	1795
% of Volume	97	150	102	100	103	101	133	100	103	101	102

2: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.2	0.2
Avg Speed (mph)	34	34
Vehicles Entered	275	275
Vehicles Exited	275	275
Hourly Exit Rate	275	275
Input Volume	271	271
% of Volume	101	101

3: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.2	0.2
Total Del/Veh (s)	0.8	0.8
Avg Speed (mph)	46	46
Vehicles Entered	651	651
Vehicles Exited	652	652
Hourly Exit Rate	652	652
Input Volume	651	651
% of Volume	100	100

4: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.1	0.1
Total Del/Veh (s)	0.6	0.6
Avg Speed (mph)	43	43
Vehicles Entered	866	866
Vehicles Exited	866	866
Hourly Exit Rate	866	866
Input Volume	844	844
% of Volume	103	103

5: External Performance by approach

Approach	EB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.5	0.5
Avg Speed (mph)	15	15
Vehicles Entered	5	5
Vehicles Exited	5	5
Hourly Exit Rate	5	5
Input Volume	5	5
% of Volume	100	100

6: Squaw Valley Rd & 7-11 driveway Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.3	0.0	0.1	0.0	0.6
Total Del/Veh (s)	5.0	1.1	4.0	3.0	12.6	4.0	3.0
Avg Speed (mph)	12	24	12	11	9	14	15
Vehicles Entered	31	316	300	22	21	29	719
Vehicles Exited	31	315	299	22	21	29	717
Hourly Exit Rate	31	315	299	22	21	29	717
Input Volume	32	314	294	21	22	29	712
% of Volume	97	100	102	105	95	100	101

7: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.3	0.3
Avg Speed (mph)	22	22
Vehicles Entered	52	52
Vehicles Exited	53	53
Hourly Exit Rate	53	53
Input Volume	53	53
% of Volume	100	100

8: Site access & Squaw Valley Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.5	0.1	0.0	0.0	0.1	0.1	0.2
Total Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.1	0.2
Total Del/Veh (s)	0.3	0.0	3.3	0.7	7.5	3.8	1.3
Avg Speed (mph)	34	28	15	28	11	13	27
Vehicles Entered	263	6	61	264	14	83	691
Vehicles Exited	264	6	62	264	14	83	693
Hourly Exit Rate	264	6	62	264	14	83	693
Input Volume	267	7	64	259	13	79	689
% of Volume	99	86	97	102	108	105	101

9: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.3	0.3
Avg Speed (mph)	22	22
Vehicles Entered	67	67
Vehicles Exited	67	67
Hourly Exit Rate	67	67
Input Volume	71	71
% of Volume	94	94

10: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.1	0.0	0.1
Denied Del/Veh (s)	0.5	0.0	0.2
Total Delay (hr)	0.3	2.0	2.3
Total Del/Veh (s)	1.8	8.3	5.6
Avg Speed (mph)	24	23	23
Vehicles Entered	606	866	1472
Vehicles Exited	606	866	1472
Hourly Exit Rate	606	866	1472
Input Volume	597	844	1441
% of Volume	102	103	102

11: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	0.3	0.6	0.9
Total Del/Veh (s)	2.0	2.5	2.3
Avg Speed (mph)	31	22	27
Vehicles Entered	611	858	1469
Vehicles Exited	612	857	1469
Hourly Exit Rate	612	857	1469
Input Volume	611	840	1451
% of Volume	100	102	101

12: SR 89 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.2	0.0	0.2
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.8	0.8	0.5
Total Delay (hr)	0.6	0.1	0.0	0.1	1.1	0.0	1.9
Total Del/Veh (s)	54.5	37.2	8.8	0.5	4.7	1.1	4.3
Avg Speed (mph)	2	3	6	40	31	26	26
Vehicles Entered	40	6	3	623	852	38	1562
Vehicles Exited	40	6	4	624	852	38	1564
Hourly Exit Rate	40	6	4	624	852	38	1564
Input Volume	45	6	5	620	834	46	1556
% of Volume	89	100	80	101	102	83	101

13: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.2	0.2
Avg Speed (mph)	18	18
Vehicles Entered	41	41
Vehicles Exited	41	41
Hourly Exit Rate	41	41
Input Volume	51	51
% of Volume	80	80

Total Network Performance

Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.8
Total Delay (hr)	12.4
Total Del/Veh (s)	22.1
Avg Speed (mph)	22
Vehicles Entered	2000
Vehicles Exited	1999
Hourly Exit Rate	1999
Input Volume	9590
% of Volume	21

Intersection: 1: SR 89 & Squaw Valley Rd

Movement	EB	EB	WB	NB	NB	NB	SB	SB	SB	B11
Directions Served	L	LT	LTR	L	T	TR	L	T	R	T
Maximum Queue (ft)	94	75	18	140	117	48	16	331	208	115
Average Queue (ft)	50	16	1	63	44	5	1	190	48	13
95th Queue (ft)	84	52	10	112	91	26	8	335	213	76
Link Distance (ft)	156	156	94		488			260		76
Upstream Blk Time (%)								5	0	2
Queuing Penalty (veh)								43	0	17
Storage Bay Dist (ft)				500		300	160		280	
Storage Blk Time (%)								15	0	
Queuing Penalty (veh)								28	2	

Intersection: 6: Squaw Valley Rd & 7-11 driveway

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	60	13	69
Average Queue (ft)	15	0	28
95th Queue (ft)	46	6	55
Link Distance (ft)	176	156	332
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Site access & Squaw Valley Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	60	74
Average Queue (ft)	16	30
95th Queue (ft)	46	53
Link Distance (ft)	176	284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Existing Summer Weekend Plus Project Mid-Day

02/07/2020

Intersection: 12: SR 89

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	103	24	6	106
Average Queue (ft)	38	3	0	5
95th Queue (ft)	81	17	4	51
Link Distance (ft)	198		76	479
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		75		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 89

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	1	186	0	0	1	133	461	3	1	658	181
Future Volume (vph)	149	1	186	0	0	1	133	461	3	1	658	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	500		300	160		280
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850		0.865			0.999				0.850
Flt Protected	0.950	0.953					0.950			0.950		
Satd. Flow (prot)	1681	1686	1583	0	1611	0	1770	3435	0	1770	1810	1583
Flt Permitted	0.950	0.953					0.950			0.950		
Satd. Flow (perm)	1681	1686	1583	0	1611	0	1770	3435	0	1770	1810	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207		445			1				171
Link Speed (mph)		35			25			55				55
Link Distance (ft)		233			143			555				325
Travel Time (s)		4.5			3.9			6.9				4.0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	166	1	207	0	0	1	148	512	3	1	731	201
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	83	84	207	0	1	0	148	515	0	1	731	201
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Split	NA	Perm		NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4			8		5	2		1		6

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4	8								6
Detector Phase	4	4	4	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	10.0	10.0		22.5	22.5		9.5	22.5	22.5
Total Split (s)	38.0	38.0	38.0	10.0	10.0		22.5	32.5		9.5	25.0	25.0
Total Split (%)	39.8%	39.8%	39.8%	10.5%	10.5%		23.6%	34.0%		9.9%	26.2%	26.2%
Maximum Green (s)	33.5	33.5	33.5	5.5	5.5		18.0	28.0		5.0	20.5	20.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5		4.5	4.5		4.5	4.5	4.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	Min	Min
Walk Time (s)	7.0	7.0	7.0					7.0				
Flash Dont Walk (s)	11.0	11.0	11.0					11.0				
Pedestrian Calls (#/hr)	0	0	0					204				
Act Effct Green (s)	8.5	8.5	8.5		5.7		10.0	33.0		5.2	22.8	22.8
Actuated g/C Ratio	0.16	0.16	0.16		0.11		0.19	0.61		0.10	0.42	0.42
v/c Ratio	0.31	0.32	0.49		0.00		0.45	0.24		0.01	0.95	0.26
Control Delay	25.6	25.6	8.7		0.0		26.0	7.0		28.0	46.3	5.6
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	25.6	25.6	8.7		0.0		26.0	7.0		28.0	46.3	5.6
LOS	C	C	A		A		C	A		C	D	A
Approach Delay		16.3						11.2			37.5	
Approach LOS		B						B			D	
Queue Length 50th (ft)	24	24	0		0		40	24		0	~220	5
Queue Length 95th (ft)	73	74	52		0		108	114		5	#646	56
Internal Link Dist (ft)		153			63			475			245	
Turn Bay Length (ft)							500			160		280
Base Capacity (vph)	1083	1086	1093		568		612	2259		170	766	769
Starvation Cap Reductn	0	0	0		0		0	0		0	0	0
Spillback Cap Reductn	0	0	0		0		0	0		0	0	0
Storage Cap Reductn	0	0	0		0		0	0		0	0	0
Reduced v/c Ratio	0.08	0.08	0.19		0.00		0.24	0.23		0.01	0.95	0.26

Intersection Summary

Area Type: Other
 Cycle Length: 95.5
 Actuated Cycle Length: 53.7
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 24.6
 Intersection LOS: C
 Intersection Capacity Utilization 64.1%
 ICU Level of Service C
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings
 1: SR 89 & Squaw Valley Rd

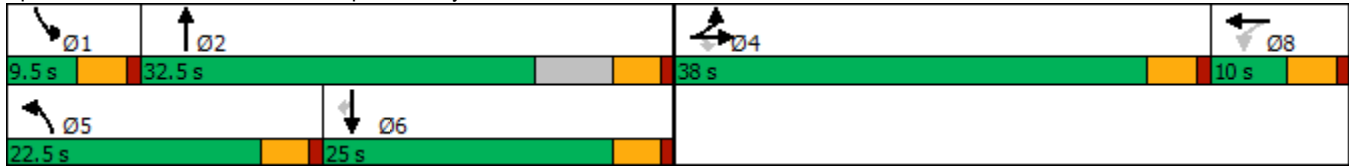
02/19/2020

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 89 & Squaw Valley Rd



Lanes, Volumes, Timings
6: Squaw Valley Rd & 7-11 driveway

02/19/2020



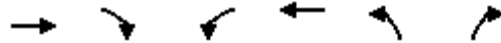
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑		↓	
Traffic Volume (vph)	32	314	293	21	22	29
Future Volume (vph)	32	314	293	21	22	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Frt			0.991		0.923	
Flt Protected		0.995			0.979	
Satd. Flow (prot)	0	5060	1846	0	1683	0
Flt Permitted		0.995			0.979	
Satd. Flow (perm)	0	5060	1846	0	1683	0
Link Speed (mph)		35	35		20	
Link Distance (ft)		210	233		372	
Travel Time (s)		4.1	4.5		12.7	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	38	369	345	25	26	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	407	370	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
8: Site access & Squaw Valley Rd

02/19/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑↑	
Traffic Volume (vph)	267	7	64	258	13	79
Future Volume (vph)	267	7	64	258	13	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	80		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00
Frt	0.996				0.884	
Flt Protected				0.990	0.993	
Satd. Flow (prot)	5065	0	0	3504	1635	0
Flt Permitted				0.990	0.993	
Satd. Flow (perm)	5065	0	0	3504	1635	0
Link Speed (mph)	35			35	20	
Link Distance (ft)	785			210	348	
Travel Time (s)	15.3			4.1	11.9	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	314	8	75	304	15	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	322	0	0	379	108	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.9%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

12: SR 89

02/19/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	45	6	5	606	834	46
Future Volume (vph)	45	6	5	606	834	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.983				0.993	
Flt Protected	0.958		0.950			
Satd. Flow (prot)	1754	0	1770	1863	1850	0
Flt Permitted	0.958		0.950			
Satd. Flow (perm)	1754	0	1770	1863	1850	0
Link Speed (mph)	30			55	55	
Link Distance (ft)	236			130	511	
Travel Time (s)	5.4			1.6	6.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	7	6	673	927	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	57	0	6	673	978	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	56.7%
	ICU Level of Service B
Analysis Period (min)	15

1: SR 89 & Squaw Valley Rd Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	9.2	0.0	0.2	2.3	9.3	2.0	0.1	23.1
Total Del/Veh (s)	33.3	4.6	2.1	43.6	49.1	27.0	2.4	31.6
Avg Speed (mph)	4	11	13	7	7	7	19	6
Vehicles Entered	988	2	307	185	672	259	188	2601
Vehicles Exited	990	2	307	183	673	260	187	2602
Hourly Exit Rate	990	2	307	183	673	260	187	2602
Input Volume	1135	1	344	178	662	253	194	2767
% of Volume	87	200	89	103	102	103	96	94

2: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.3	0.3
Avg Speed (mph)	34	34
Vehicles Entered	368	368
Vehicles Exited	368	368
Hourly Exit Rate	368	368
Input Volume	384	384
% of Volume	96	96

3: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	2.7	2.7
Total Del/Veh (s)	5.9	5.9
Avg Speed (mph)	29	29
Vehicles Entered	1656	1656
Vehicles Exited	1656	1656
Hourly Exit Rate	1656	1656
Input Volume	1837	1837
% of Volume	90	90

4: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.1	0.1
Total Del/Veh (s)	0.5	0.5
Avg Speed (mph)	43	43
Vehicles Entered	559	559
Vehicles Exited	558	558
Hourly Exit Rate	558	558
Input Volume	590	590
% of Volume	95	95

6: Squaw Valley Rd & 7-11 driveway Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.3	0.3
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	4.8	34.4	0.5
Total Delay (hr)	0.4	8.8	0.4	0.0	1.3	4.1	14.9
Total Del/Veh (s)	42.7	24.3	3.8	3.1	1144.5	591.8	31.0
Avg Speed (mph)	3	6	13	11	0	0	4
Vehicles Entered	30	1300	355	16	4	25	1730
Vehicles Exited	30	1294	356	16	2	14	1712
Hourly Exit Rate	30	1294	356	16	2	14	1712
Input Volume	36	1474	358	15	5	27	1915
% of Volume	83	88	99	107	40	52	89

7: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.8	0.8
Avg Speed (mph)	21	21
Vehicles Entered	46	46
Vehicles Exited	46	46
Hourly Exit Rate	46	46
Input Volume	51	51
% of Volume	90	90

8: Site access & Squaw Valley Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	61.4	0.2	0.0	0.0	0.0	0.0	61.6
Denied Del/Veh (s)	145.9	110.7	0.0	0.0	0.1	0.1	116.8
Total Delay (hr)	23.4	0.0	0.0	0.1	0.5	0.9	24.9
Total Del/Veh (s)	62.0	10.4	17.8	0.6	413.2	558.3	51.4
Avg Speed (mph)	6	17	6	30	0	0	7
Vehicles Entered	1353	6	4	364	4	6	1737
Vehicles Exited	1323	6	4	364	4	6	1707
Hourly Exit Rate	1323	6	4	364	4	6	1707
Input Volume	1505	5	5	379	5	5	1904
% of Volume	88	120	80	96	80	120	90

9: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.4	0.4
Avg Speed (mph)	21	21
Vehicles Entered	9	9
Vehicles Exited	9	9
Hourly Exit Rate	9	9
Input Volume	10	10
% of Volume	90	90

10: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.2	0.0	0.2
Denied Del/Veh (s)	0.8	0.0	0.5
Total Delay (hr)	0.5	1.6	2.0
Total Del/Veh (s)	2.0	9.9	5.1
Avg Speed (mph)	23	19	19
Vehicles Entered	857	558	1415
Vehicles Exited	857	559	1416
Hourly Exit Rate	857	559	1416
Input Volume	840	590	1430
% of Volume	102	95	99

11: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	6.5	0.1	6.7
Total Del/Veh (s)	14.1	1.2	11.4
Avg Speed (mph)	11	32	12
Vehicles Entered	1663	440	2103
Vehicles Exited	1659	440	2099
Hourly Exit Rate	1659	440	2099
Input Volume	1797	440	2237
% of Volume	92	100	94

12: SR 89 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	14.4	1.9	0.0	0.0	0.0	0.0	16.3
Denied Del/Veh (s)	1264.9	1117.9	0.0	0.0	0.4	0.3	26.8
Total Delay (hr)	7.2	1.4	0.0	1.4	0.3	0.0	10.2
Total Del/Veh (s)	2341.2	2481.0	3.0	2.9	2.2	0.2	16.9
Avg Speed (mph)	0	0	12	19	40	32	7
Vehicles Entered	9	1	4	1678	439	25	2156
Vehicles Exited	2	1	4	1678	439	25	2149
Hourly Exit Rate	2	1	4	1678	439	25	2149
Input Volume	45	6	5	1812	434	27	2329
% of Volume	4	17	80	93	101	93	92

13: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.1	0.1
Avg Speed (mph)	20	20
Vehicles Entered	29	29
Vehicles Exited	29	29
Hourly Exit Rate	29	29
Input Volume	32	32
% of Volume	91	91

Total Network Performance

Denied Delay (hr)	78.4
Denied Del/Veh (s)	95.2
Total Delay (hr)	84.6
Total Del/Veh (s)	107.8
Avg Speed (mph)	9
Vehicles Entered	2762
Vehicles Exited	2702
Hourly Exit Rate	2702
Input Volume	15486
% of Volume	17

Intersection: 1: SR 89 & Squaw Valley Rd

Movement	EB	EB	NB	NB	NB	B10	SB	SB
Directions Served	L	LT	L	T	TR	T	T	R
Maximum Queue (ft)	224	218	344	475	324	23	227	104
Average Queue (ft)	188	182	136	266	213	1	112	5
95th Queue (ft)	220	213	269	420	336	15	191	65
Link Distance (ft)	156	156		488		111	260	
Upstream Blk Time (%)	60	46	0	0			0	0
Queuing Penalty (veh)	296	229	0	0			1	0
Storage Bay Dist (ft)			500		300			280
Storage Blk Time (%)			0	8	1		3	0
Queuing Penalty (veh)			0	39	5		5	0

Intersection: 6: Squaw Valley Rd & 7-11 driveway

Movement	EB	EB	EB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	203	238	135	9	303
Average Queue (ft)	170	188	14	0	136
95th Queue (ft)	216	255	92	5	332
Link Distance (ft)	176	176	176	156	332
Upstream Blk Time (%)	16	24	0		11
Queuing Penalty (veh)	83	122	1		0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Site access & Squaw Valley Rd

Movement	EB	EB	EB	WB	NB
Directions Served	T	T	TR	LT	LR
Maximum Queue (ft)	38	791	784	39	100
Average Queue (ft)	3	634	600	4	33
95th Queue (ft)	22	1059	1103	22	97
Link Distance (ft)		736	736	176	284
Upstream Blk Time (%)		62	45		
Queuing Penalty (veh)		0	0		
Storage Bay Dist (ft)	10				
Storage Blk Time (%)	0	30			
Queuing Penalty (veh)	1	152			

Intersection: 10: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	76
Average Queue (ft)	3
95th Queue (ft)	54
Link Distance (ft)	488
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: SR 89






















Movement	EB	NB	NB	B11	B11
Directions Served	LR	L	T	T	
Maximum Queue (ft)	221	24	58	360	362
Average Queue (ft)	187	1	13	325	256
95th Queue (ft)	252	12	47	429	444
Link Distance (ft)	198		76	260	260
Upstream Blk Time (%)	83		0	24	7
Queuing Penalty (veh)	0		0	220	62
Storage Bay Dist (ft)		75			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Network Summary

Network wide Queuing Penalty: 1214

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1135	0	344	0	0	0	178	662	0	0	246	194
Future Volume (vph)	1135	0	344	0	0	0	178	662	0	0	246	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	500		300	160		280
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected	0.950	0.950					0.950					
Satd. Flow (prot)	1681	1681	1583	0	1863	0	1770	3438	0	1863	1810	1583
Flt Permitted	0.950	0.950					0.950					
Satd. Flow (perm)	1681	1681	1583	0	1863	0	1770	3438	0	1863	1810	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			374									211
Link Speed (mph)		35			25			55			55	
Link Distance (ft)		233			143			555			325	
Travel Time (s)		4.5			3.9			6.9			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	1234	0	374	0	0	0	193	720	0	0	267	211
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	617	617	374	0	0	0	193	720	0	0	267	211
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm				Prot	NA		Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4	8								6
Detector Phase	4	4	4	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	10.0	10.0		9.5	22.5		9.5	22.5	22.5
Total Split (s)	38.0	38.0	38.0	10.0	10.0		17.0	32.5		9.5	25.0	25.0
Total Split (%)	42.2%	42.2%	42.2%	11.1%	11.1%		18.9%	36.1%		10.6%	27.8%	27.8%
Maximum Green (s)	33.5	33.5	33.5	5.5	5.5		12.5	28.0		5.0	20.5	20.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5		4.5	4.5		4.5	4.5	4.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	Min	Min
Walk Time (s)	7.0	7.0	7.0					7.0			7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0					11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0	0					0			0	0
Act Effct Green (s)	33.6	33.6	33.6				11.8	32.0			15.7	15.7
Actuated g/C Ratio	0.45	0.45	0.45				0.16	0.43			0.21	0.21
v/c Ratio	0.82	0.82	0.41				0.69	0.49			0.70	0.42
Control Delay	30.1	30.1	3.3				45.2	16.5			37.9	6.7
Queue Delay	0.0	0.0	0.0				0.0	0.0			0.0	0.0
Total Delay	30.1	30.1	3.3				45.2	16.5			37.9	6.7
LOS	C	C	A				D	B			D	A
Approach Delay		23.9						22.5			24.1	
Approach LOS		C						C			C	
Queue Length 50th (ft)	257	257	0				86	121			116	0
Queue Length 95th (ft)	#500	#500	48				#182	166			192	50
Internal Link Dist (ft)		153			63			475			245	
Turn Bay Length (ft)							500					280
Base Capacity (vph)	756	756	918				297	1514			498	589
Starvation Cap Reductn	0	0	0				0	0			0	0
Spillback Cap Reductn	0	0	0				0	0			0	0
Storage Cap Reductn	0	0	0				0	0			0	0
Reduced v/c Ratio	0.82	0.82	0.41				0.65	0.48			0.54	0.36

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	74.7
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	23.5
Intersection LOS:	C
Intersection Capacity Utilization:	65.5%
ICU Level of Service:	C
Analysis Period (min):	15

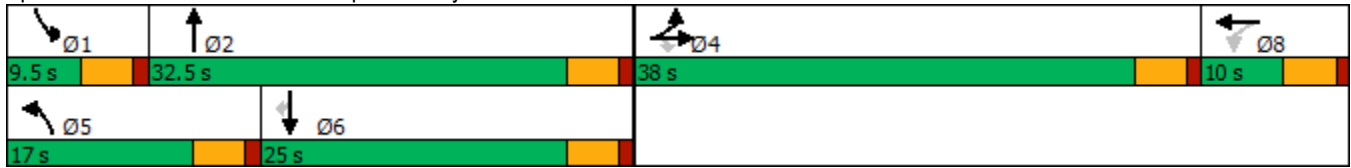
95th percentile volume exceeds capacity, queue may be longer.

Lanes, Volumes, Timings
 1: SR 89 & Squaw Valley Rd

02/19/2020

Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 89 & Squaw Valley Rd



Lanes, Volumes, Timings
6: Squaw Valley Rd & 7-11 driveway

02/19/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑		↓	
Traffic Volume (vph)	36	1474	357	15	5	27
Future Volume (vph)	36	1474	357	15	5	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Frt			0.995		0.885	
Flt Protected		0.999			0.993	
Satd. Flow (prot)	0	5080	1853	0	1637	0
Flt Permitted		0.999			0.993	
Satd. Flow (perm)	0	5080	1853	0	1637	0
Link Speed (mph)		35	35		20	
Link Distance (ft)		210	233		372	
Travel Time (s)		4.1	4.5		12.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1602	388	16	5	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1641	404	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.2%
Analysis Period (min)	15
	ICU Level of Service B

Lanes, Volumes, Timings
8: Site access & Squaw Valley Rd

02/19/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑	
Traffic Volume (vph)	1505	5	5	379	5	5
Future Volume (vph)	1505	5	5	379	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	80		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00
Frt					0.932	
Flt Protected				0.999	0.976	
Satd. Flow (prot)	5085	0	0	3536	1694	0
Flt Permitted				0.999	0.976	
Satd. Flow (perm)	5085	0	0	3536	1694	0
Link Speed (mph)	35			35	20	
Link Distance (ft)	785			210	348	
Travel Time (s)	15.3			4.1	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1636	5	5	412	5	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1641	0	0	417	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

12: SR 89

02/19/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	45	6	5	1792	434	27
Future Volume (vph)	45	6	5	1792	434	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.983				0.992	
Flt Protected	0.958		0.950			
Satd. Flow (prot)	1754	0	1770	1863	1848	0
Flt Permitted	0.958		0.950			
Satd. Flow (perm)	1754	0	1770	1863	1848	0
Link Speed (mph)	30			55	55	
Link Distance (ft)	236			130	511	
Travel Time (s)	5.4			1.6	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	7	5	1948	472	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	0	5	1948	501	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	104.3%
	ICU Level of Service G
Analysis Period (min)	15

1: SR 89 & Squaw Valley Rd Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	0.6	5.5
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	33.1	9.1	7.5
Total Delay (hr)	3.0	0.0	0.2	0.0	0.0	8.8	2.0	0.0	0.0	10.4	1.0	25.5
Total Del/Veh (s)	21.4	17.8	2.0	35.3	5.5	71.8	13.5	2.6	50.0	69.8	16.5	34.7
Avg Speed (mph)	5	7	13	2	7	4	18	23	4	3	7	6
Vehicles Entered	500	2	391	1	1	432	538	2	1	524	220	2612
Vehicles Exited	501	2	391	1	1	431	536	2	1	525	220	2611
Hourly Exit Rate	501	2	391	1	1	431	536	2	1	525	220	2611
Input Volume	490	3	400	2	1	390	533	1	3	966	409	3198
% of Volume	102	67	98	50	100	111	101	200	33	54	54	82

2: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.1	0.1
Total Del/Veh (s)	0.4	0.4
Avg Speed (mph)	34	34
Vehicles Entered	619	619
Vehicles Exited	618	618
Hourly Exit Rate	618	618
Input Volume	758	758
% of Volume	82	82

3: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.6	0.6
Total Del/Veh (s)	1.9	1.9
Avg Speed (mph)	42	42
Vehicles Entered	1042	1042
Vehicles Exited	1041	1041
Hourly Exit Rate	1041	1041
Input Volume	1066	1066
% of Volume	98	98

4: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.2	0.2
Total Del/Veh (s)	0.8	0.8
Avg Speed (mph)	40	40
Vehicles Entered	900	900
Vehicles Exited	900	900
Hourly Exit Rate	900	900
Input Volume	1338	1338
% of Volume	67	67

5: External Performance by approach

Approach	EB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	1.2	1.2
Avg Speed (mph)	16	16
Vehicles Entered	4	4
Vehicles Exited	4	4
Hourly Exit Rate	4	4
Input Volume	6	6
% of Volume	67	67

6: Squaw Valley Rd & 7-11 driveway Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.1	0.5	0.8	0.0	0.2	0.1	1.7
Total Del/Veh (s)	10.9	1.9	4.3	3.9	40.6	10.6	3.7
Avg Speed (mph)	9	24	12	11	4	10	16
Vehicles Entered	29	871	636	17	20	28	1601
Vehicles Exited	29	872	636	17	20	28	1602
Hourly Exit Rate	29	872	636	17	20	28	1602
Input Volume	30	870	780	21	22	29	1752
% of Volume	97	100	82	81	91	97	91

7: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.4	0.4
Avg Speed (mph)	22	22
Vehicles Entered	46	46
Vehicles Exited	46	46
Hourly Exit Rate	46	46
Input Volume	51	51
% of Volume	90	90

8: Site access & Squaw Valley Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.4	0.4	0.0	0.0	0.1	0.1	0.2
Total Delay (hr)	0.2	0.0	0.1	0.2	0.0	0.1	0.6
Total Del/Veh (s)	0.7	0.4	7.8	0.9	27.7	7.0	1.3
Avg Speed (mph)	33	28	11	28	5	11	30
Vehicles Entered	846	5	47	617	5	56	1576
Vehicles Exited	845	5	47	616	5	55	1573
Hourly Exit Rate	845	5	47	616	5	55	1573
Input Volume	845	6	58	752	7	55	1723
% of Volume	100	83	81	82	71	100	91

9: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.6	0.6
Avg Speed (mph)	21	21
Vehicles Entered	52	52
Vehicles Exited	53	53
Hourly Exit Rate	53	53
Input Volume	64	64
% of Volume	83	83

10: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	1.0	0.0	1.0
Denied Del/Veh (s)	3.9	0.0	2.0
Total Delay (hr)	0.9	2.8	3.7
Total Del/Veh (s)	3.3	11.3	7.1
Avg Speed (mph)	16	18	18
Vehicles Entered	972	900	1872
Vehicles Exited	972	900	1872
Hourly Exit Rate	972	900	1872
Input Volume	924	1338	2262
% of Volume	105	67	83

11: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	1.4	4.2	5.6
Total Del/Veh (s)	4.9	20.6	11.4
Avg Speed (mph)	20	4	11
Vehicles Entered	1038	728	1766
Vehicles Exited	1038	728	1766
Hourly Exit Rate	1038	728	1766
Input Volume	1024	1350	2374
% of Volume	101	54	74

12: SR 89 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	10.1	2.3	0.0	0.0	307.3	10.2	329.9
Denied Del/Veh (s)	912.6	1041.9	0.0	0.0	815.7	766.0	474.1
Total Delay (hr)	6.9	1.9	0.2	0.4	16.5	0.6	26.4
Total Del/Veh (s)	1375.8	1694.4	93.2	1.3	79.8	74.7	51.4
Avg Speed (mph)	0	0	1	29	4	4	3
Vehicles Entered	15	3	6	1047	731	29	1831
Vehicles Exited	12	1	6	1047	727	30	1823
Hourly Exit Rate	12	1	6	1047	727	30	1823
Input Volume	47	6	5	1036	1344	46	2484
% of Volume	26	17	120	101	54	65	73

13: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	1.5	1.5
Avg Speed (mph)	16	16
Vehicles Entered	36	36
Vehicles Exited	36	36
Hourly Exit Rate	36	36
Input Volume	51	51
% of Volume	71	71

Total Network Performance

Denied Delay (hr)	336.5
Denied Del/Veh (s)	353.1
Total Delay (hr)	64.3
Total Del/Veh (s)	82.2
Avg Speed (mph)	10
Vehicles Entered	2747
Vehicles Exited	2734
Hourly Exit Rate	2734
Input Volume	17127
% of Volume	16

Intersection: 1: SR 89 & Squaw Valley Rd

Movement	EB	EB	WB	NB	NB	NB	B10	SB	SB	SB	B11
Directions Served	L	LT	LTR	L	T	TR	T	L	T	R	T
Maximum Queue (ft)	200	169	30	466	531	156	109	22	361	260	172
Average Queue (ft)	135	102	2	308	207	45	24	1	333	244	151
95th Queue (ft)	188	163	14	505	534	122	106	9	345	345	162
Link Distance (ft)	156	156	94		488		111		260		76
Upstream Blk Time (%)	4	0		3	7		6		60	2	62
Queuing Penalty (veh)	12	1		0	0		0		813	0	834
Storage Bay Dist (ft)				500		300		160		280	
Storage Blk Time (%)				3	0				71	2	
Queuing Penalty (veh)				16	0				292	21	

Intersection: 6: Squaw Valley Rd & 7-11 driveway

Movement	EB	EB	WB	SB
Directions Served	LT	T	TR	LR
Maximum Queue (ft)	106	34	9	87
Average Queue (ft)	30	2	0	32
95th Queue (ft)	85	23	5	68
Link Distance (ft)	176	176	156	332
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Site access & Squaw Valley Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	74	67
Average Queue (ft)	25	27
95th Queue (ft)	59	53
Link Distance (ft)	176	284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	410
Average Queue (ft)	16
95th Queue (ft)	150
Link Distance (ft)	488
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: SR 89

Movement	EB	NB	NB	B11	B11	SB
Directions Served	LR	L	T	T		TR
Maximum Queue (ft)	217	38	36	201	53	531
Average Queue (ft)	193	7	2	16	2	501
95th Queue (ft)	243	28	16	125	37	520
Link Distance (ft)	198		76	260	260	479
Upstream Blk Time (%)	86			0	0	79
Queuing Penalty (veh)	0			1	0	0
Storage Bay Dist (ft)		75				
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 1991

1: SR 89 & Squaw Valley Rd Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	9.3	0.2	2.3	8.8	1.9	0.1	22.5
Total Del/Veh (s)	33.3	2.1	44.4	47.2	27.1	2.4	31.2
Avg Speed (mph)	4	13	6	7	7	19	6
Vehicles Entered	992	298	182	659	251	194	2576
Vehicles Exited	993	298	180	659	250	194	2574
Hourly Exit Rate	993	298	180	659	250	194	2574
Input Volume	1154	352	179	662	253	195	2795
% of Volume	86	85	101	100	99	99	92

2: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.3	0.3
Avg Speed (mph)	34	34
Vehicles Entered	378	378
Vehicles Exited	381	381
Hourly Exit Rate	381	381
Input Volume	387	387
% of Volume	98	98

3: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	2.5	2.5
Total Del/Veh (s)	5.5	5.5
Avg Speed (mph)	30	30
Vehicles Entered	1645	1645
Vehicles Exited	1646	1646
Hourly Exit Rate	1646	1646
Input Volume	1858	1858
% of Volume	89	89

4: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.1	0.1
Total Del/Veh (s)	0.5	0.5
Avg Speed (mph)	43	43
Vehicles Entered	542	542
Vehicles Exited	542	542
Hourly Exit Rate	542	542
Input Volume	598	598
% of Volume	91	91

6: Squaw Valley Rd & 7-11 driveway Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	4.6	1.6	0.0
Total Delay (hr)	0.4	9.2	0.4	0.0	0.6	1.6	12.2
Total Del/Veh (s)	44.2	25.5	3.8	3.3	451.2	193.1	25.2
Avg Speed (mph)	3	5	12	11	0	1	5
Vehicles Entered	33	1289	358	17	4	29	1730
Vehicles Exited	33	1287	358	17	3	23	1721
Hourly Exit Rate	33	1287	358	17	3	23	1721
Input Volume	38	1501	360	15	5	27	1946
% of Volume	87	86	99	113	60	85	88

7: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.8	0.8
Avg Speed (mph)	22	22
Vehicles Entered	50	50
Vehicles Exited	50	50
Hourly Exit Rate	50	50
Input Volume	53	53
% of Volume	94	94

8: Site access & Squaw Valley Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	69.6	0.5	0.0	0.0	0.8	3.5	74.3
Denied Del/Veh (s)	168.5	208.4	0.0	0.0	338.4	370.5	139.6
Total Delay (hr)	24.7	0.0	0.0	0.1	0.9	6.0	31.8
Total Del/Veh (s)	66.4	20.2	20.1	0.6	673.2	869.6	65.2
Avg Speed (mph)	6	13	6	29	0	0	5
Vehicles Entered	1329	8	5	374	5	24	1745
Vehicles Exited	1307	8	5	374	4	15	1713
Hourly Exit Rate	1307	8	5	374	4	15	1713
Input Volume	1505	10	7	379	8	34	1943
% of Volume	87	80	71	99	50	44	88

9: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.4	0.4
Avg Speed (mph)	20	20
Vehicles Entered	13	13
Vehicles Exited	13	13
Hourly Exit Rate	13	13
Input Volume	17	17
% of Volume	76	76

10: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.2	0.0	0.2
Denied Del/Veh (s)	0.8	0.0	0.5
Total Delay (hr)	0.5	1.5	2.0
Total Del/Veh (s)	2.1	9.8	5.1
Avg Speed (mph)	22	19	19
Vehicles Entered	841	541	1382
Vehicles Exited	841	542	1383
Hourly Exit Rate	841	542	1383
Input Volume	841	598	1439
% of Volume	100	91	96

11: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	6.4	0.1	6.6
Total Del/Veh (s)	13.9	1.2	11.2
Avg Speed (mph)	11	32	12
Vehicles Entered	1652	437	2089
Vehicles Exited	1649	438	2087
Hourly Exit Rate	1649	438	2087
Input Volume	1816	441	2257
% of Volume	91	99	92

12: SR 89 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	12.2	1.5	0.0	0.0	0.0	0.0	13.7
Denied Del/Veh (s)	1125.3	876.6	0.0	0.0	0.3	0.4	22.7
Total Delay (hr)	7.0	2.0	0.0	1.3	0.3	0.0	10.6
Total Del/Veh (s)	2806.4	2424.6	3.7	2.8	2.1	0.1	17.8
Avg Speed (mph)	0	0	11	20	40	33	7
Vehicles Entered	8	2	4	1663	437	25	2139
Vehicles Exited	2	0	4	1663	437	25	2131
Hourly Exit Rate	2	0	4	1663	437	25	2131
Input Volume	47	6	5	1831	435	27	2351
% of Volume	4	0	80	91	100	93	91

13: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.1	0.1
Avg Speed (mph)	20	20
Vehicles Entered	28	28
Vehicles Exited	29	29
Hourly Exit Rate	29	29
Input Volume	32	32
% of Volume	91	91

Total Network Performance

Denied Delay (hr)	88.2
Denied Del/Veh (s)	107.9
Total Delay (hr)	88.3
Total Del/Veh (s)	113.1
Avg Speed (mph)	8
Vehicles Entered	2736
Vehicles Exited	2690
Hourly Exit Rate	2690
Input Volume	15676
% of Volume	17

Intersection: 1: SR 89 & Squaw Valley Rd

Movement	EB	EB	NB	NB	NB	B10	SB
Directions Served	L	LT	L	T	TR	T	T
Maximum Queue (ft)	228	220	353	464	323	46	214
Average Queue (ft)	186	181	136	263	207	3	111
95th Queue (ft)	218	211	313	438	345	35	183
Link Distance (ft)	156	156		488		111	260
Upstream Blk Time (%)	61	46	0	1		0	0
Queuing Penalty (veh)	304	231	0	0		0	0
Storage Bay Dist (ft)			500		300		
Storage Blk Time (%)			0	8	1		3
Queuing Penalty (veh)			0	40	5		6

Intersection: 6: Squaw Valley Rd & 7-11 driveway

Movement	EB	EB	EB	WB	SB
Directions Served	LT	T	T	TR	LR
Maximum Queue (ft)	193	244	192	24	198
Average Queue (ft)	174	197	20	1	70
95th Queue (ft)	200	238	112	14	209
Link Distance (ft)	176	176	176	156	332
Upstream Blk Time (%)	16	26	1		2
Queuing Penalty (veh)	81	136	4		0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Site access & Squaw Valley Rd

Movement	EB	EB	EB	WB	NB
Directions Served	T	T	TR	LT	LR
Maximum Queue (ft)	34	788	787	33	276
Average Queue (ft)	4	683	629	5	164
95th Queue (ft)	20	987	1085	25	355
Link Distance (ft)		736	736	176	284
Upstream Blk Time (%)		65	47		41
Queuing Penalty (veh)		0	0		0
Storage Bay Dist (ft)	10				
Storage Blk Time (%)	1	33			
Queuing Penalty (veh)	3	165			

Intersection: 12: SR 89






















Movement	EB	NB	NB	B11	B11
Directions Served	LR	L	T	T	
Maximum Queue (ft)	213	24	58	360	369
Average Queue (ft)	193	2	7	325	248
95th Queue (ft)	258	13	36	408	458
Link Distance (ft)	198		76	260	260
Upstream Blk Time (%)	82		0	24	7
Queuing Penalty (veh)	0		0	217	61
Storage Bay Dist (ft)		75			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Network Summary

Network wide Queuing Penalty: 1253

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1154	0	352	0	0	0	179	662	0	0	246	195
Future Volume (vph)	1154	0	352	0	0	0	179	662	0	0	246	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	500		300	160		280
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850									0.850
Flt Protected	0.950	0.950					0.950					
Satd. Flow (prot)	1681	1681	1583	0	1863	0	1770	3438	0	1863	1810	1583
Flt Permitted	0.950	0.950					0.950					
Satd. Flow (perm)	1681	1681	1583	0	1863	0	1770	3438	0	1863	1810	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			383									212
Link Speed (mph)		35			25			55			55	
Link Distance (ft)		233			143			555			325	
Travel Time (s)		4.5			3.9			6.9			4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	1254	0	383	0	0	0	195	720	0	0	267	212
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	627	627	383	0	0	0	195	720	0	0	267	212
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm				Prot	NA		Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4	8								6
Detector Phase	4	4	4	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	10.0	10.0		9.5	22.5		9.5	22.5	22.5
Total Split (s)	38.0	38.0	38.0	10.0	10.0		17.0	32.5		9.5	25.0	25.0
Total Split (%)	42.2%	42.2%	42.2%	11.1%	11.1%		18.9%	36.1%		10.6%	27.8%	27.8%
Maximum Green (s)	33.5	33.5	33.5	5.5	5.5		12.5	28.0		5.0	20.5	20.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5		4.5	4.5		4.5	4.5	4.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	Min	Min
Walk Time (s)	7.0	7.0	7.0					7.0			7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0					11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0	0					0			0	0
Act Effct Green (s)	33.6	33.6	33.6				11.9	32.1			15.7	15.7
Actuated g/C Ratio	0.45	0.45	0.45				0.16	0.43			0.21	0.21
v/c Ratio	0.83	0.83	0.42				0.69	0.49			0.70	0.42
Control Delay	31.2	31.2	3.3				45.4	16.4			38.0	6.7
Queue Delay	0.0	0.0	0.0				0.0	0.0			0.0	0.0
Total Delay	31.2	31.2	3.3				45.4	16.4			38.0	6.7
LOS	C	C	A				D	B			D	A
Approach Delay		24.6						22.6			24.1	
Approach LOS		C						C			C	
Queue Length 50th (ft)	265	265	0				87	121			116	0
Queue Length 95th (ft)	#512	#512	49				#186	166			192	50
Internal Link Dist (ft)		153			63			475			245	
Turn Bay Length (ft)							500					280
Base Capacity (vph)	755	755	922				297	1514			497	589
Starvation Cap Reductn	0	0	0				0	0			0	0
Spillback Cap Reductn	0	0	0				0	0			0	0
Storage Cap Reductn	0	0	0				0	0			0	0
Reduced v/c Ratio	0.83	0.83	0.42				0.66	0.48			0.54	0.36

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 74.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 23.9 Intersection LOS: C

Intersection Capacity Utilization 66.1% ICU Level of Service C

Analysis Period (min) 15

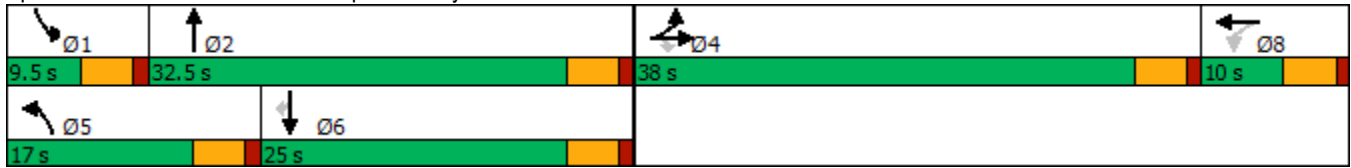
95th percentile volume exceeds capacity, queue may be longer.

Lanes, Volumes, Timings
 1: SR 89 & Squaw Valley Rd

02/19/2020

Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 89 & Squaw Valley Rd



Lanes, Volumes, Timings
6: Squaw Valley Rd & 7-11 driveway

02/19/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑		↓	
Traffic Volume (vph)	38	1501	359	15	5	27
Future Volume (vph)	38	1501	359	15	5	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Frt			0.995		0.885	
Flt Protected		0.999			0.993	
Satd. Flow (prot)	0	5080	1853	0	1637	0
Flt Permitted		0.999			0.993	
Satd. Flow (perm)	0	5080	1853	0	1637	0
Link Speed (mph)		35	35		20	
Link Distance (ft)		210	233		372	
Travel Time (s)		4.1	4.5		12.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	1632	390	16	5	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1673	406	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.9%
Analysis Period (min)	15
	ICU Level of Service B

Lanes, Volumes, Timings
 8: Site access & Squaw Valley Rd

02/19/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑	
Traffic Volume (vph)	1505	10	7	379	8	34
Future Volume (vph)	1505	10	7	379	8	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	80		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00
Frt	0.999				0.891	
Flt Protected				0.999	0.990	
Satd. Flow (prot)	5080	0	0	3536	1643	0
Flt Permitted				0.999	0.990	
Satd. Flow (perm)	5080	0	0	3536	1643	0
Link Speed (mph)	35			35	20	
Link Distance (ft)	785			210	348	
Travel Time (s)	15.3			4.1	11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1636	11	8	412	9	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1647	0	0	420	46	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.3%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

12: SR 89

02/19/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	47	6	5	1811	435	27
Future Volume (vph)	47	6	5	1811	435	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.984				0.992	
Flt Protected	0.958		0.950			
Satd. Flow (prot)	1756	0	1770	1863	1848	0
Flt Permitted	0.958		0.950			
Satd. Flow (perm)	1756	0	1770	1863	1848	0
Link Speed (mph)	30			55	55	
Link Distance (ft)	236			130	511	
Travel Time (s)	5.4			1.6	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	7	5	1968	473	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	5	1968	502	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	105.3%
ICU Level of Service	G
Analysis Period (min)	15

1: SR 89 & Squaw Valley Rd Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.5	4.8
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	29.4	7.7	6.7
Total Delay (hr)	2.9	0.0	0.2	0.0	0.0	5.3	1.7	0.0	0.0	10.4	0.9	21.4
Total Del/Veh (s)	20.7	17.4	2.0	53.6	7.1	46.5	11.1	2.5	37.1	69.3	15.2	29.3
Avg Speed (mph)	5	7	13	2	6	6	21	25	4	3	8	6
Vehicles Entered	491	2	413	1	1	401	537	1	2	528	223	2600
Vehicles Exited	494	2	413	1	1	403	536	1	2	526	223	2602
Hourly Exit Rate	494	2	413	1	1	403	536	1	2	526	223	2602
Input Volume	501	2	411	2	1	393	533	1	3	966	412	3225
% of Volume	99	100	100	50	100	103	101	100	67	54	54	81

2: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.1	0.1
Total Del/Veh (s)	0.5	0.5
Avg Speed (mph)	34	34
Vehicles Entered	603	603
Vehicles Exited	602	602
Hourly Exit Rate	602	602
Input Volume	764	764
% of Volume	79	79

3: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.6	0.6
Total Del/Veh (s)	1.9	1.9
Avg Speed (mph)	41	41
Vehicles Entered	1042	1042
Vehicles Exited	1043	1043
Hourly Exit Rate	1043	1043
Input Volume	1077	1077
% of Volume	97	97

4: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.2	0.2
Total Del/Veh (s)	0.8	0.8
Avg Speed (mph)	39	39
Vehicles Entered	928	928
Vehicles Exited	928	928
Hourly Exit Rate	928	928
Input Volume	1349	1349
% of Volume	69	69

5: External Performance by approach

Approach	EB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	1.1	1.1
Avg Speed (mph)	18	18
Vehicles Entered	5	5
Vehicles Exited	5	5
Hourly Exit Rate	5	5
Input Volume	6	6
% of Volume	83	83

6: Squaw Valley Rd & 7-11 driveway Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.2	0.1	0.0
Total Delay (hr)	0.1	0.5	0.8	0.0	0.3	0.2	1.8
Total Del/Veh (s)	10.5	2.0	4.5	3.0	48.0	19.3	4.1
Avg Speed (mph)	9	23	12	11	4	7	15
Vehicles Entered	32	886	612	15	21	30	1596
Vehicles Exited	32	885	612	15	21	30	1595
Hourly Exit Rate	32	885	612	15	21	30	1595
Input Volume	32	892	786	21	22	29	1782
% of Volume	100	99	78	71	95	103	90

7: External Performance by approach

Approach	NB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.4	0.4
Avg Speed (mph)	22	22
Vehicles Entered	47	47
Vehicles Exited	47	47
Hourly Exit Rate	47	47
Input Volume	53	53
% of Volume	89	89

8: Site access & Squaw Valley Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.4	0.3	0.0	0.0	0.1	0.2	0.2
Total Delay (hr)	0.2	0.0	0.1	0.2	0.1	0.2	0.7
Total Del/Veh (s)	0.8	0.2	7.2	0.9	25.7	8.6	1.6
Avg Speed (mph)	33	28	11	28	6	10	29
Vehicles Entered	841	8	49	592	11	77	1578
Vehicles Exited	840	8	50	592	11	78	1579
Hourly Exit Rate	840	8	50	592	11	78	1579
Input Volume	845	7	64	752	13	79	1760
% of Volume	99	114	78	79	85	99	90

9: External Performance by approach

Approach	SB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	0.6	0.6
Avg Speed (mph)	21	21
Vehicles Entered	57	57
Vehicles Exited	57	57
Hourly Exit Rate	57	57
Input Volume	71	71
% of Volume	80	80

10: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.3	0.0	0.3
Denied Del/Veh (s)	1.0	0.0	0.5
Total Delay (hr)	0.5	3.0	3.5
Total Del/Veh (s)	1.9	11.4	6.6
Avg Speed (mph)	23	18	19
Vehicles Entered	939	925	1864
Vehicles Exited	939	928	1867
Hourly Exit Rate	939	928	1867
Input Volume	927	1349	2276
% of Volume	101	69	82

11: Bend Performance by approach

Approach	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	1.3	4.2	5.5
Total Del/Veh (s)	4.7	20.4	11.2
Avg Speed (mph)	20	4	11
Vehicles Entered	1031	733	1764
Vehicles Exited	1029	733	1762
Hourly Exit Rate	1029	733	1762
Input Volume	1035	1353	2388
% of Volume	99	54	74

12: SR 89 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	10.2	2.1	0.0	0.0	310.6	10.3	333.2
Denied Del/Veh (s)	748.8	828.3	0.0	0.0	831.4	879.3	481.7
Total Delay (hr)	7.4	1.2	0.0	0.4	16.6	0.5	26.1
Total Del/Veh (s)	1070.8	1414.4	49.5	1.3	79.6	74.2	50.8
Avg Speed (mph)	0	0	2	30	4	4	3
Vehicles Entered	23	3	3	1042	732	23	1826
Vehicles Exited	17	1	3	1042	732	23	1818
Hourly Exit Rate	17	1	3	1042	732	23	1818
Input Volume	47	6	5	1046	1347	46	2497
% of Volume	36	17	60	100	54	50	73

13: External Performance by approach

Approach	WB	All
Denied Delay (hr)	0.0	0.0
Denied Del/Veh (s)	0.0	0.0
Total Delay (hr)	0.0	0.0
Total Del/Veh (s)	1.5	1.5
Avg Speed (mph)	16	16
Vehicles Entered	26	26
Vehicles Exited	25	25
Hourly Exit Rate	25	25
Input Volume	51	51
% of Volume	49	49

Total Network Performance

Denied Delay (hr)	338.4
Denied Del/Veh (s)	356.5
Total Delay (hr)	59.8
Total Del/Veh (s)	76.3
Avg Speed (mph)	11
Vehicles Entered	2746
Vehicles Exited	2738
Hourly Exit Rate	2738
Input Volume	17299
% of Volume	16

Intersection: 1: SR 89 & Squaw Valley Rd

Movement	EB	EB	WB	NB	NB	NB	SB	SB	SB	B11
Directions Served	L	LT	LTR	L	T	TR	L	T	R	T
Maximum Queue (ft)	212	159	30	408	322	164	120	366	260	186
Average Queue (ft)	133	99	2	229	125	35	5	334	233	152
95th Queue (ft)	187	157	15	379	289	116	47	347	361	167
Link Distance (ft)	156	156	94		488			260		76
Upstream Blk Time (%)	3	0		0	0			60	2	62
Queuing Penalty (veh)	10	1		0	0			812	0	833
Storage Bay Dist (ft)				500		300	160		280	
Storage Blk Time (%)				0	0			71	2	
Queuing Penalty (veh)				0	1			294	20	

Intersection: 6: Squaw Valley Rd & 7-11 driveway

Movement	EB	EB	WB	SB
Directions Served	LT	T	TR	LR
Maximum Queue (ft)	116	20	13	120
Average Queue (ft)	33	1	1	37
95th Queue (ft)	92	18	8	85
Link Distance (ft)	176	176	156	332
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Site access & Squaw Valley Rd

Movement	WB	WB	NB
Directions Served	LT	T	LR
Maximum Queue (ft)	69	24	95
Average Queue (ft)	28	1	34
95th Queue (ft)	62	13	67
Link Distance (ft)	176	176	284
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	247
Average Queue (ft)	11
95th Queue (ft)	120
Link Distance (ft)	488
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: SR 89






















Movement	EB	NB	NB	B11	B11	SB
Directions Served	LR	L	T	T		TR
Maximum Queue (ft)	213	30	27	327	11	529
Average Queue (ft)	191	3	1	18	0	502
95th Queue (ft)	249	16	10	133	8	522
Link Distance (ft)	198		76	260	260	479
Upstream Blk Time (%)	82			0		78
Queuing Penalty (veh)	0			2		0
Storage Bay Dist (ft)		75				
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 1973

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	501	2	411	0	2	1	393	533	1	3	938	412
Future Volume (vph)	501	2	411	0	2	1	393	533	1	3	938	412
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	500		300	160		280
Storage Lanes	1		1	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850		0.955							0.850
Flt Protected	0.950	0.953					0.950			0.950		
Satd. Flow (prot)	1681	1686	1583	0	1779	0	1770	3438	0	1770	1810	1583
Flt Permitted	0.950	0.953					0.950			0.950		
Satd. Flow (perm)	1681	1686	1583	0	1779	0	1770	3438	0	1770	1810	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			433		1							257
Link Speed (mph)		35			25			55				55
Link Distance (ft)		233			143			555				325
Travel Time (s)		4.5			3.9			6.9				4.0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	5%	2%
Adj. Flow (vph)	527	2	433	0	2	1	414	561	1	3	987	434
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	263	266	433	0	3	0	414	562	0	3	987	434
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Split	NA	Perm		NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4			8		5	2		1		6

Lanes, Volumes, Timings
1: SR 89 & Squaw Valley Rd

02/19/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4	8								6
Detector Phase	4	4	4	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	10.0	10.0		22.5	22.5		9.5	22.5	22.5
Total Split (s)	38.0	38.0	38.0	10.0	10.0		22.5	32.5		9.5	25.0	25.0
Total Split (%)	39.8%	39.8%	39.8%	10.5%	10.5%		23.6%	34.0%		9.9%	26.2%	26.2%
Maximum Green (s)	33.5	33.5	33.5	5.5	5.5		18.0	28.0		5.0	20.5	20.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5		4.5	4.5		4.5	4.5	4.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Min		None	Min	Min
Walk Time (s)	7.0	7.0	7.0					7.0				
Flash Dont Walk (s)	11.0	11.0	11.0					11.0				
Pedestrian Calls (#/hr)	0	0	0					224				
Act Effct Green (s)	19.7	19.7	19.7		5.6		18.4	42.4		5.1	20.9	20.9
Actuated g/C Ratio	0.27	0.27	0.27		0.08		0.25	0.57		0.07	0.28	0.28
v/c Ratio	0.59	0.60	0.59		0.02		0.95	0.29		0.02	1.94	0.69
Control Delay	29.3	29.5	5.9		34.7		64.0	11.9		39.0	451.9	18.1
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	29.3	29.5	5.9		34.7		64.0	11.9		39.0	451.9	18.1
LOS	C	C	A		C		E	B		D	F	B
Approach Delay		18.8			34.7			34.0			318.8	
Approach LOS		B			C			C			F	
Queue Length 50th (ft)	105	106	0		1		175	53		1	~672	61
Queue Length 95th (ft)	204	206	63		11		#494	185		11	#1241	#260
Internal Link Dist (ft)		153			63			475			245	
Turn Bay Length (ft)							500			160		280
Base Capacity (vph)	772	775	961		135		437	1960		121	509	629
Starvation Cap Reductn	0	0	0		0		0	0		0	0	0
Spillback Cap Reductn	0	0	0		0		0	0		0	0	0
Storage Cap Reductn	0	0	0		0		0	0		0	0	0
Reduced v/c Ratio	0.34	0.34	0.45		0.02		0.95	0.29		0.02	1.94	0.69

Intersection Summary

Area Type: Other

Cycle Length: 95.5

Actuated Cycle Length: 74.3

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.94

Intersection Signal Delay: 150.2 Intersection LOS: F

Intersection Capacity Utilization 103.0% ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings
 1: SR 89 & Squaw Valley Rd

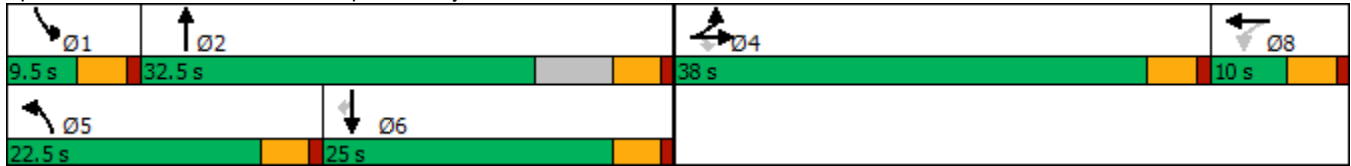
02/19/2020

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 89 & Squaw Valley Rd



Lanes, Volumes, Timings
6: Squaw Valley Rd & 7-11 driveway

02/19/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑		↓	
Traffic Volume (vph)	32	892	786	21	22	29
Future Volume (vph)	32	892	786	21	22	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	1.00
Frt			0.997		0.923	
Flt Protected		0.998			0.979	
Satd. Flow (prot)	0	5075	1857	0	1683	0
Flt Permitted		0.998			0.979	
Satd. Flow (perm)	0	5075	1857	0	1683	0
Link Speed (mph)		35	35		20	
Link Distance (ft)		210	233		372	
Travel Time (s)		4.1	4.5		12.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	36	991	873	23	24	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1027	896	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.6%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
8: Site access & Squaw Valley Rd

02/19/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑	↑↑	
Traffic Volume (vph)	845	7	64	751	13	79
Future Volume (vph)	845	7	64	751	13	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	80		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	0.95	0.95	1.00	1.00
Frt	0.999				0.884	
Flt Protected				0.996	0.993	
Satd. Flow (prot)	5080	0	0	3525	1635	0
Flt Permitted				0.996	0.993	
Satd. Flow (perm)	5080	0	0	3525	1635	0
Link Speed (mph)	35			35	20	
Link Distance (ft)	785			210	348	
Travel Time (s)	15.3			4.1	11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	939	8	71	834	14	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	947	0	0	905	102	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	54.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

12: SR 89

02/19/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	47	6	5	1030	1347	46
Future Volume (vph)	47	6	5	1030	1347	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.984				0.996	
Flt Protected	0.958		0.950			
Satd. Flow (prot)	1756	0	1770	1863	1855	0
Flt Permitted	0.958		0.950			
Satd. Flow (perm)	1756	0	1770	1863	1855	0
Link Speed (mph)	30			55	55	
Link Distance (ft)	236			130	511	
Travel Time (s)	5.4			1.6	6.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	52	7	6	1144	1497	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	6	1144	1548	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	83.7%
ICU Level of Service	E
Analysis Period (min)	15