

V.B. TRAFFIC AND CIRCULATION

This section summarizes the findings presented in two documents. It includes information from both the *Final Traffic Operations Report, US 101/Willow Road Interchange Project*, prepared by Fehr and Peers Associates, Inc. (December, 2004), which is included within Volume II of this document, and from Chapter V.B of the *Willow Road/Highway 101 Interchange Final Environmental Impact Report*, prepared by Douglas Wood & Associates, Inc. (March 1999: pp. V15-V40).

1. Existing Conditions

The project area lies within the rural area near the community of Nipomo, San Luis Obispo County. The traffic modeling centers on US 101. The Tefft Street interchange defines the southern boundary, and the Los Berros/Thompson Road interchange defines the boundary to the north.

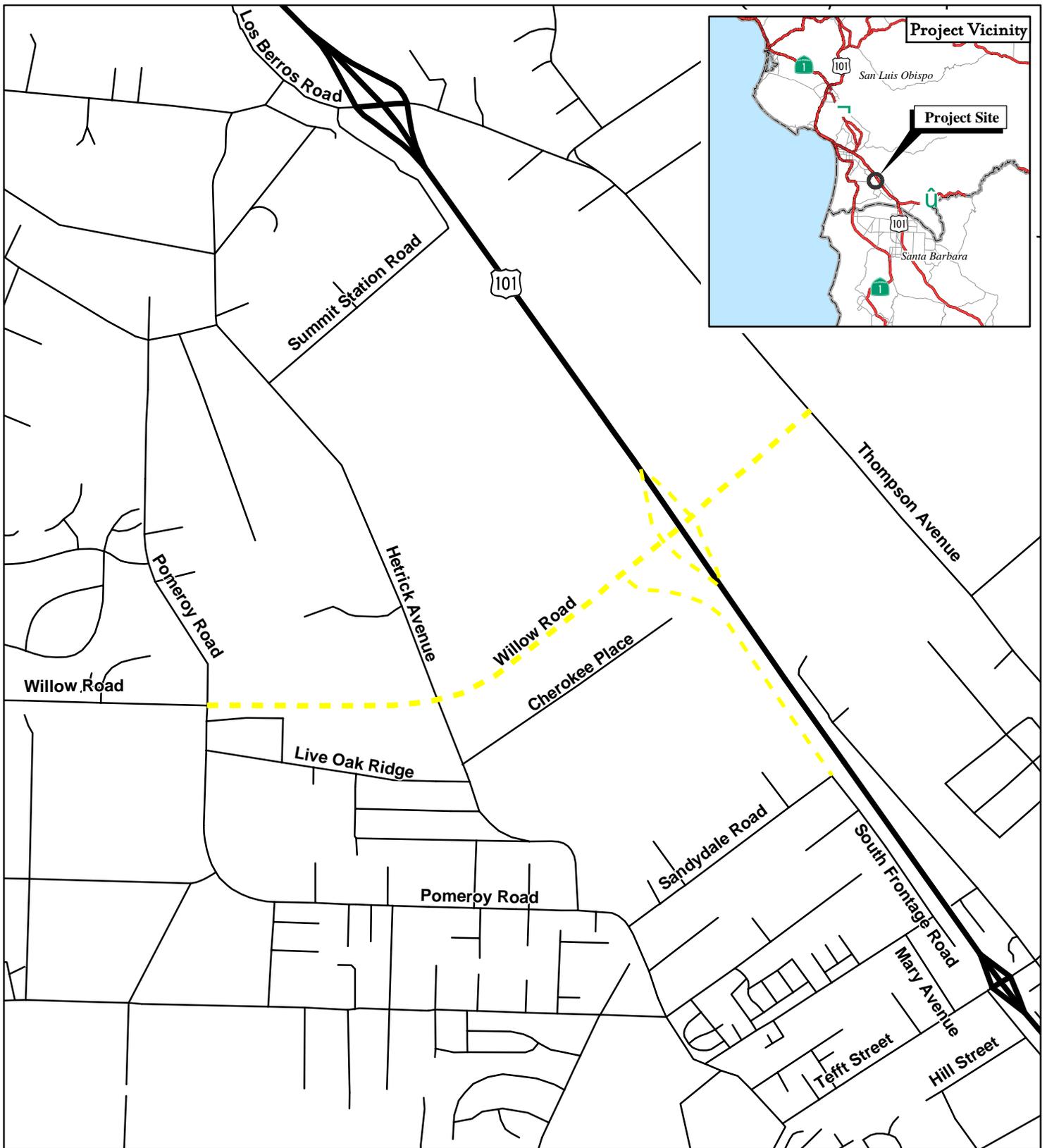
Roads. Figure V.B-1 depicts the road network in the project area. The road network, as defined by the Circulation Element of the South County Area Plan, contains principal arterials, arterials, collectors, and local streets. These road types form a functional hierarchy. Principal arterials carry traffic between population centers. Arterial roads carry traffic between population centers and within a busy urban area. Collector roads typically provide transition roadways between arterial roads and local streets. Local streets are intended as low volume roadways usually found at the end of the roadway system. The following sections describe the arterials and important local streets within the project area.

US 101. US 101 provides regional access to the project area. This highway links the project area with Santa Barbara and Los Angeles to the south and with San Luis Obispo, Monterey, and San Francisco to the north. Most of the traffic on US 101 passes through the project area, originating and terminating in other regions. US 101 serves as an important route for traffic between the “Five Cities” area and San Luis Obispo to the north and Santa Maria to the south. Existing US 101 freeway interchanges are located at Tefft Street, Los Berros/Thompson Road, and State Route 166 (SR-166). These interchanges provide access to the local roadway system for the Nipomo Mesa South County Planning Area.

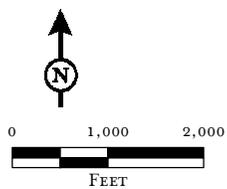
Los Berros Road. Los Berros Road is a two-lane arterial road connecting US 101 to Valley Road in Arroyo Grande. This road provides access to US 101 for eastbound traffic at the Los Berros/Thompson Interchange. Residences occur along this road. East of US 101, this road becomes Thompson Road.

Thompson Road. Thompson Road is a two-lane arterial road that provides access to US 101 at the Los Berros/Thompson interchange. East of the interchange, this road runs south and parallels US 101, intersects with Tefft Street and eastern Nipomo, and eventually terminates at SR-166. Farms, a high school, residences, and commercial development line this road.

Tefft Street. Within the vicinity of the project area, Tefft Street is an arterial road. This four-lane road runs east-west. An interchange along this street provides northbound and southbound access to US 101. These ramp intersections are signalized. Due to the alignment of South Frontage Road, the southbound off-ramp intersection at Tefft Street occurs to the west of the southbound intersection on-ramp, resulting in two closely spaced intersections. Tefft Street primarily serves the Nipomo urban area.



LSA



Legend

- Existing Roadways
- - - Proposed Roadways (Generalized)

FIGURE V.B-1

*Willow Road Extension/U.S. 101 Interchange Project
Regional Access*

SOURCE: Tiger (ESRI 2001)

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Pomeroy Road. Pomeroy Road is a two-lane road that runs roughly north-south, connecting Los Berros Road to Tefft Road. This road is a key route for traffic moving from the interior of Nipomo Mesa to US 101. North of its intersection with Willow Road, this road is a collector road, bringing traffic to and from Willow Road. South of its intersection with Willow Road, the road becomes an arterial road and runs through mostly suburban and urban residential areas in the community of Nipomo.

Willow Road. Willow Road is a two-lane arterial road that occurs in several discontinuous segments. One segment of this road runs east-west, terminating at Pomeroy Road. This segment of the road connects to SR-1 and passes the Black Lake Village area, limited agricultural areas, and scattered residential areas. Another segment runs roughly 1,200 feet due west from Hetrick Avenue. This second segment provides access to scattered residences, a nursery, and vacant lots. A third segment runs roughly west-east from Hetrick Avenue toward US 101 and is essentially private because a locked gate currently restricts access. East of the gate, the road provides access to several farms and residences.

Hetrick Avenue. Hetrick Avenue is a two-lane local road that runs roughly parallel to Pomeroy Road and US 101. This road begins at Los Berros Road and eventually terminates at Pomeroy Road. The easternmost existing segment of Willow Road intersects with Hetrick Avenue. Residences occur along this road. Sections of this road are not paved and seasonally impassable.

Safety. Caltrans provided Traffic Accident Surveillance and Analysis System (TASAS) data for a three-year period for US 101 between Los Berros Road and Tefft Street at or near the ramp junctions of these two existing interchanges (from January 2000 through December 2002). The data indicated that a total of 66 accidents occurred on the US 101 mainline and 32 accidents occurred in the vicinity of a ramp junction. The actual and expected average accident rates are presented in Table V.B-1 below. It should be noted that a fatal collision occurred in January 2004 on the US 101 southbound off-ramp to Tefft Street. This accident, which involved an intoxicated driver, was not included in the data set from Caltrans, but is acknowledged here for informational purposes.

The data in Table V.B-1 show no fatalities at the ramps, and the mainline rate of fatal accidents is lower than the Statewide average. With the exception of the northbound off-ramp to Los Berros Road, all of the fatal plus injury accident rates are lower than the Statewide average. However, the northbound Los Berros Road off-ramp fatal plus injury rate is approximately three times the Statewide average. In addition, at five of the seven ramp locations (three of which are at the Tefft Street interchange); the total rate of accidents is higher than the Statewide average. Speeding and other traffic violations constitute the most common factors contributing to the reported accidents, and rear-end accidents were the most frequent type of collision.

Methods to Determine Traffic Operations. Characterization of traffic conditions within the project area focused on a few key locations. Operations at freeway ramp junctions often determine the performance of adjacent freeway segments. Similarly, the operation of roadway intersections determines how smoothly traffic flows through them. To evaluate the current performance of freeway ramp junctions and intersections within the project area, their Level of Service (LOS) was determined.

Table V.B-1: Accident Rate Calculation

Location	Accidents per Million Vehicle Miles for Jan. 2000-Dec. 2002					
	Actual			Statewide Average		
	Fatalities	Fatalities Plus Injuries	All Report Accidents	Fatalities	Fatalities Plus Injuries	All Reported Accidents
US 101 Mainline	0.011	0.12	0.35	0.013	0.26	0.65
Tefft SB on-ramp	0.00	0.00	0.65	0.002	0.32	0.80
Tefft NB on-ramp	0.00	0.00	2.11	0.005	0.61	1.50
Tefft SB off-ramp	0.00	0.25	1.27	0.002	0.32	0.80
Tefft NB off-ramp	0.00	0.46	2.28	0.005	0.61	1.50
Los Berros NB off-ramp	0.00	1.30	1.74	0.014	0.43	1.15
Los Berros SB off-ramp	0.00	0.00	0.00	0.007	0.21	0.55
Los NB on-ramp	0.00	0.00	0.61	0.007	0.21	0.55

Bold numbers represent actual accident rates greater than the Statewide average.

Source: TASAS data provided by Caltrans District 5 (Table B, November 6, 2003) in Final Traffic Operations Report, Fehr & Peers, December 2004.

LOS represents a qualitative assessment of the quantitative effects of such factors as traffic volume, roadway geometrics, speed, delay, and maneuverability on roadway and intersection operations. LOS varies from levels A through F, where LOS A represents the best driving conditions and LOS F represents the worst conditions. At LOS A, for example, traffic flows freely through intersections. Traffic volumes approach the maximum capacity of the road at LOS E. Under such circumstances, relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays. At LOS F, capacity has been exceeded, resulting in long delays.

Determination of LOS at ramp junctures, signalized intersections, and unsignalized intersections followed guidelines presented in the *Highway Capacity Manual* (Transportation Research Board 2000). At ramp junctures, LOS deteriorates as the maximum density of passenger cars per mile per lane increases. The length of delay experienced by vehicles at unsignalized and signalized intersections, calculated in seconds per vehicle, determines LOS at such intersections. LOS deteriorates as the length of delays increase.

Measurement of existing LOS occurred at the following freeway ramps.

- Southbound US 101 Off-ramp at Los Berros Road
- Southbound US 101 On-ramp from Los Berros Road
- Southbound US 101 Off-ramp at Tefft Street
- Southbound US 101 On-ramp from Tefft Street
- Northbound US 101 Off-ramp at Tefft Street
- Northbound US 101 On-ramp from Tefft Street
- Northbound US 101 Off-ramp at Los Berros Road
- Northbound US 101 On-ramp from Los Berros Road

Analysis of LOS also occurred at the following road intersections. These intersections include freeway ramp-road intersections, so the LOS of traffic passing past these ramps can be evaluated.

- Southbound US 101 Ramps/Los Berros Road (Unsignalized, Side Street Stop-Controlled)
- Northbound US 101 Ramps/Los Berros Road (Unsignalized, Side Street Stop-Controlled)
- Willow Road/Pomeroy Road (Unsignalized, Side Street Stop-Controlled)
- Willow Road/Hetrick Avenue (Unsignalized, Side Street Stop-Controlled)
- Southbound US 101 Ramps/Tefft Street (Signalized)
- Northbound US 101 Ramps/Tefft Street (Signalized)

Measurement of LOS at the abovementioned freeway ramps provides a basis for evaluating the impact of the proposed project on freeway traffic. The proposed project will also change the intersection of Willow Road with Pomeroy Road and Hetrick Avenue, so measurement of LOS at these intersections allows the effects of the proposed project on local street traffic to be evaluated. The proposed project will also create a new intersection at Willow Road and Thompson Avenue. LOS at this intersection is only analyzed under future conditions, as discussed in the following section.

Table V.B-2 depicts LOS for AM and PM peak hours at the existing ramps and intersections. As this table shows, only the southbound US 101 ramp/Tefft Street intersection exhibits an unacceptable LOS under existing conditions. The poor performance of this intersection derives from its unusual configuration. The southbound off-ramp lies across from S. Frontage Road, rather than across from the southbound on-ramp as is typical. The southbound on-ramp lies farther to the east. The conjunction of these five routes (eastbound Tefft Street, westbound Tefft Street, southbound US 101 on-ramp, southbound US 101 off-ramp, S. Frontage Road) requires complex signal timings that reduce the efficiency of traffic movement at the intersection.

Table V.B-2: Peak Hour LOS for Existing Project Area Ramp Junctionures and Intersections

Ramp Junctionure or Intersection	Existing (AM/PM)
Study Area Ramp Junctionures	
SB Off-ramp at Los Berros Rd	C/D
SB On-ramp from Los Berros Rd	C/D
NB Off-ramp at Los Berros Rd	C/C
NB On-ramp from Los Berros Rd	C/C
SB Off-ramp at Tefft St	C/D
SB On-ramp from Tefft St	C/D
NB Off-ramp from Tefft St	C/C
NB On-ramp from Tefft St	C/C
Study Area Intersections	
SB US 101 Ramps/Los Berros Rd	B/C
NB US 101 Ramps/Los Berros Rd	C/C
SB US 101 Ramps/Tefft St	E/E
NB US 101 Ramps/Tefft St	C/C
Willow Rd/Pomeroy Rd	A/B
Willow Rd/Hetrick Ave	A/A

Note: LOS shown in **Bold** denotes unacceptable service.

2. Thresholds of Significance

Significance criteria for evaluating project impacts on traffic conditions derive from the CEQA Guidelines Appendix G and the County of San Luis Obispo Initial Study Checklist. The project would have a significant impact if any of the following conditions occur.

- The project causes traffic conditions to exceed, either individually or cumulatively, level of service D¹;
- The project causes an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system;
- The project increases vehicle trips to the local or area-wide circulation system;
- The project results in inadequate emergency access;
- The project substantially increases hazards due to a design feature or incompatible uses;
- The project conflicts with adopted policies, plan, or programs supporting alternative transportation;
- The project results in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;

¹ San Luis Obispo County and Caltrans have both established LOS C as a Countywide target on all County- and State-maintained roads and highways. However, LOS D is accepted in more developed and congested areas, which will include Nipomo by 2030.

3. Project Impacts

Future Conditions. Over time, traffic volumes throughout the project area will increase as a result of local and regional growth. The County has forecasted traffic volumes to the year 2030, assuming that the proposed project will be constructed. Much of the increased traffic within the study area is largely the result of anticipated growth on the west side of the freeway such as the Woodlands development. Some growth and additional traffic is also anticipated east of US 101 in Olde Towne Nipomo.

LOS for Future No Project and Future Plus Project Conditions. Table V.B-3 shows both the future (year 2030) average delay and LOS, assuming that the project is not built and the future average delay and LOS, assuming that the project is built. Comparison of these two scenarios allows the impacts of the project on traffic conditions to be evaluated. The comparison reveals that the proposed project has a beneficial effect on LOS at three study area intersections. In almost all instances where the LOS does not change, delay is reduced resulting in improved operations at each of the study intersections.

If the project is not constructed, increases in traffic will lead to unacceptable delays and deteriorations in LOS at several ramp junctures and intersections by 2030. During both the AM and PM peak hours, unacceptable LOS will be experienced at the northbound Los Berros Road/US 101 northbound ramps and the Tefft Street/ US 101 southbound ramps. During the peak PM hours, unacceptable LOS will also be experienced at the Tefft Street/US 101 northbound ramps and the Los Berros Road/US 101 southbound ramps. The traffic analysis also indicates the potential for traffic at both the southbound and northbound US 101 off ramps/Tefft Street to back up onto the freeway by 2030.

Construction of the project provides relief from congestion at several study area intersections and significantly reduces the average vehicle delay resulting in improved intersection and ramp operations. The LOS is forecast to improve to acceptable levels at the Los Berros/US 101 Southbound ramps and the Tefft Street/ US 101 Northbound ramps during PM peak hours. The proposed project will also improve LOS F to LOS E at the Los Berros Road/ US 101 Northbound ramps during peak AM hours, although operations will still be an unacceptable LOS E at this location. The operation of this intersection can be improved to an acceptable LOS with the implementation of Mitigation Measure B1, prescribed below in Section 5.

Table V.B-3: Average Delay/LOS for Future No Project Condition and for Future with Project Condition

Intersection	Average Delay ¹ / LOS			
	2030 No Project		Future With Project	
	AM	PM	AM	PM
Los Berros Road / US 101 SB Ramps	20.8/C	76.9/F	15.2/C	31.1/D
Los Berros Road / US 101 NB Ramps	384.5/F	433.7/F	36.3/E	92.3/F
Willow Road / Pomeroy Road	16.6/C	20.6/C	16.0/C	26.0/D
Willow Road / Hetrick Avenue	9.4/A	0.1/A	12.6/B	16.3/C
Willow Road / N. Frontage Road	N/A	N/A	12.3/B	16.3/C
Willow Road / US 101 SB Ramps	N/A	N/A	16.8/C	18.9/C
Willow Road / US 101 NB Ramps	N/A	N/A	11.5/B	9.5/A
Willow Road / Thompson Avenue	N/A	N/A	8.8/A	9.7/A
Tefft Street / US 101 SB Ramps / S. Frontage Road	102.5/F	151.5/F	81.2/F	93.3/F
Tefft Street / US 101 NB Ramps	39.4/D	61.2/E	28.5/C	35.8/D

Source: Fehr & Peers Associates, Inc., December 2004

Notes: 1. Delays in excess of 120 seconds are presented for comparison purposes only. Delays above this threshold are not considered accurate since the calculation is unreliable with excessive congestion.

Bold type indicates unacceptable (i.e., LOS E or F) traffic operations.

The proposed project does not result in significant impacts based on the aforementioned thresholds of significance. The proposed project would cause LOS to decline slightly at the intersections of Willow Road with both Pomeroy Road and Hetrick Avenue. Only during the PM peak hour at the Willow Road/Hetrick Avenue intersection does LOS worsen by more than one service level, moving from LOS A to LOS C. By providing some congestion relief at the Los Berros Road and Tefft Street interchanges, the proposed project also reduces the potential for accidents at these locations. The project should improve emergency access to the Nipomo Mesa region by providing an additional access across the freeway and reducing congestion at nearby interchanges.

The project design will be required to meet applicable County standards and is consistent with the County General Plan Circulation Element. No airports or airstrips are part of the proposed project and no such facilities lie near it, so it will have no impact on air traffic.

4. Cumulative Impacts

The cumulative study area for this traffic analysis is based on the year 2030 future with the no project condition as the baseline. The proposed project accommodates and facilitates allowed development in the surrounding area. While this project will indirectly contribute to increases in traffic volume, such increases have been anticipated in the build-out analysis of the South County Circulation Study. As discussed in the previous section, the proposed project will reduce build-out impacts to nearby freeway ramps and intersections in 2030. Consequently, the proposed project has a beneficial effect on cumulative traffic conditions within the study area.

5. Mitigation Measures

The proposed project is improving future LOS and reducing average delay impacts at study area intersections and is providing the necessary mitigation to reduce traffic and circulation impacts in 2030. The mitigation measure presented below addresses potential future unacceptable LOS at the US 101/Willow Road ramp intersections.

B-1. Willow Road Facilities Design. Design features of the Willow Road facilities should not preclude a second ramp lane from being added to the US 101 northbound on- and off-ramps. Prior to approval of final design, the County Department of Public Works shall ensure that the design could accommodate such future ramp lanes.

6. Residual Impacts

This project will produce no significant impacts on traffic and circulation. The proposed project will improve traffic and circulation conditions within the Nipomo area.