Hexagon Transportation Consultants, Inc.

Tenth Street-Chestnut Street Commercial Development

Transportation Analysis

Prepared for:

David J. Powers & Associates, Inc.

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Hexagon Transportation Consultants, Inc.

Hexagon Office: 8070 Santa Teresa Boulevard, Suite 230
Gilroy, CA 95020
Hexagon Job Number: 19GD02
Phone: 408.846-7410

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Executive Summary

The purpose of this transportation analysis is to evaluate the potential transportation impacts associated with the proposed Tenth/Chestnut Commercial development in conformance with the requirements of the California Environmental Quality Act (CEQA) and the City of Gilroy.

Scope of Study

This transportation analysis has been prepared in accordance with the standards and methodologies set forth by the City of Gilroy, the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program's *Transportation Impact Guidelines* (October 2014), and by the California Environmental Quality Act (CEQA).

In 2013, the State of California passed Senate Bill (SB) 743, which requires jurisdictions to stop using congestion and delay metrics, such as Level of Service (LOS), as the measurement for CEQA transportation analysis. Therefore, in adherence to SB 743, the effects and impacts to the transportation network as the result of the proposed project were evaluated based on VMT.

However, the City of Gilroy currently uses LOS as their adopted methodology for the evaluation of the effects of new development and land use changes on the local transportation network. In addition, the City is still required to conform to the requirements of the VTA, which establishes a uniform program for evaluating the transportation impacts of land use decisions on the designated CMP Roadway System. Therefore, in addition to the evaluation of VMT, this transportation study also includes level of service analysis to evaluate the effects of the project on the citywide transportation system, including intersections, freeway segments, and freeway ramps. The level of service analysis is presented to determine conformance to General Plan transportation policies. The determination of project impacts per CEQA requirements is based solely on the VMT analysis.

CEQA VMT Evaluation Results

For the purpose of this analysis, a comparison of the existing citywide VMT (or baseline VMT) versus the citywide VMT with the proposed project is made to determine the effects of the project. The VMT analysis considers OPR's recommendation of a net increase in total VMT from baseline conditions as the threshold to identify potential VMT impacts for commercial/retail projects.

The results of the VMT evaluation indicate that, with implementation of the proposed project, the citywide total VMT is projected to decrease by approximately 103 VMT per day from baseline conditions. In addition, the proposed project is projected to have an average employment VMT of 18.44 per job, compared to the citywide average of 19.87 per job. Because the proposed project would result in a decrease in citywide VMT, the proposed project would not result in a significant CEQA transportation impact, based on the threshold of significance for retail uses recommended by OPR. The VMT results are presented in Table ES-1.

Table ES 1
VMT Analysis Summary

Citywide	No Project	With Project	Project - No Project
Total VMT	742,250	742,148	**-103**
VMT/Job	**Citywide**	**Project Only**	**Difference**
Home-Based Work VMT	429,011	2,194	
Number of Jobs	21,595	119	
HBW VMT/Job	19.87	18.44	**-1.43**

Source: City of Gilroy Travel Demand Forecasting Model.

Roadway Capacity Analysis Results

Intersection Level of Service Analysis Results

The results of the intersection level of service analysis conducted for the study intersections are described below and summarized in Table ES-2.

Existing Intersection Level of Service Analysis

The results of the intersection level of service analysis under existing conditions indicate that the following intersection currently operates deficiently during the AM peak-hour:

8. Princevalle Street and Tenth Street (LOS D – AM peak-hour)

Background Plus Project Intersection Level of Service Analysis

The results of the intersection level of service analysis show that the following intersection would continue to operate deficiently under background plus project conditions:

8. Princevalle Street and Tenth Street (LOS D – AM peak-hour)

Based on City of Gilroy definition of operational deficiencies at signalized intersections, the project would not create a level of service deficiency at the above intersection.

Cumulative Plus Project Intersection Level of Service Analysis

The results of the intersection level of service analysis show that the project would contribute to a cumulative operational deficiency at the following intersection, based on City of Gilroy definition of operational deficiencies at signalized intersections:

8. Princevalle Street and Tenth Street (LOS D – AM & Sat, LOS F – PM;
Project deficiency: PM and Saturday peak hours)

Freeway Segment Evaluation

The results of the freeway level of service analysis are summarized in Table ES-3.

Freeway Segment Level of Service Results

The results of the freeway segment level of service analysis show that the following two study freeway segments currently operate at an unacceptable LOS F during at least one of the peak hours:

6. US 101, Northbound from Masten Avenue to San Martin Avenue (Saturday peak-hour)
11. US 101, Southbound from Monterey Road to Bloomingfield Avenue (SR 25) (PM and Saturday peak hours)

The proposed project is not projected to add traffic representing one percent (1%) or more of the segments' capacity to any of the study freeway segments, therefore, the proposed project would not create a level of service deficiency at any of the study freeway segments.

Freeway Ramp Analysis Results

The results of the freeway ramp analysis are summarized in Table ES-4.

Based on the calculated volume-to-capacity (V/C) ratios, all of the study freeway ramps currently operate at acceptable levels. Under background plus project conditions, based on the ramp capacities and traffic volume projections, it is projected that all of the study freeway ramps would continue to operate at acceptable levels.

Intersection Operations Analysis Results

The operations analysis results are described below and summarized in Table ES-5.

The existing maximum queue length for all of the above movements is estimated to be able to accommodate within the available queue storage capacity for each of the movements during the study peak hours, with the exception of the following three movements:

1. Monterey Road and Tenth Street – Westbound left-turn movement

The addition of project traffic to the westbound left-turn movement at the *Monterey Road/Tenth Street* intersection would cause the projected 95th percentile vehicle queue to increase by 1 vehicle (to 8 vehicles, or 200 feet) during both the PM and Saturday peak hours under background plus project conditions, exceeding the existing queue storage capacity (approximately 155 feet) by 2 vehicle (approximately 50 feet).

3. Chestnut Street and Tenth Street – Eastbound Left-turn movement

The addition of project traffic to the eastbound left-turn movement at the *Chestnut Street/Tenth Street* intersection would cause the projected 95th percentile vehicle queue to increase by 4 vehicle (to 9 vehicles, or 225 feet) during the Saturday peak-hour under background plus project conditions, exceeding the existing queue storage capacity (approximately 200 feet) by 1 vehicle (25 feet).

3. Chestnut Street and Tenth Street – Westbound Left-turn movement

The addition of project traffic to the westbound left-turn movement at the *Chestnut Street/Tenth Street* intersection would cause the projected 95th percentile vehicle queue to increase by 1 vehicle (to 20 vehicles, or 500 feet) during the Saturday peak-hour under background plus project conditions, exceeding the existing queue storage capacity (approximately 350 feet) by 6 vehicle (150 feet).

Projected Deficiencies and Possible Improvements

Described below are the project's contribution to projected deficiencies and/or possible improvements to improve operating conditions.

8. Princevalle Street and Tenth Street (Level of Service Deficiency)

The projected deficiency at this intersection is caused cumulatively by the proposed project and all other approved and pending projects in the City of Gilroy. Therefore, the project must make a fair-share contribution toward future improvements that would restore operations at the intersection to acceptable levels.

1. Monterey Road and Tenth Street – Westbound Left-turn (Queue Deficiency)

The project deficiency at this intersection could be improved by extending the existing westbound left-turn pocket an additional 50 feet. However, because of the at-grade railroad crossing located along Tenth Street (approximately 225 feet east of Monterey Road), the existing westbound left-turn pocket can only be extended an additional 30 feet, for a total pocket length of approximately 185 feet (plus a 40-foot bay taper, same length as the existing taper). This improvement would require restriping of the center median along Tenth Street.

3. Chestnut Street and Tenth Street – Eastbound Left-turn (Queue Deficiency)

The project deficiency at this intersection could be improved by extending the existing eastbound left-turn pocket by a minimum of 25 feet. The existing eastbound left-turn pocket can be extended the required 25 feet (although a minimum of 50 feet is recommended); however, it will require the partial removal of the existing landscaped center median, including two trees.

3. Chestnut Street and Tenth Street – Westbound Left-turn (Queue Deficiency)

The project deficiency at this intersection could be improved with the addition of a second westbound left-turn lane. Providing a second westbound left-turn lane at this location will require the widening of Tenth Street along the project site frontage. Potentially, the south side of Tenth Street also may require to be widened in order for the east leg of the intersection to align with the west leg of the intersection.

Other Transportation Issues

Recommended Site Access and Circulation Improvements

Provide adequate curb radii at project driveways. It is recommended that adequate curb radii are provided at the project driveways to allow emergency and larger vehicle access into the project site.

Installation of ADA-compliant curb ramps. It is recommended that ADA-compliant curb ramps be installed along the project site frontage, in particular at the intersections of Chestnut Street/Tenth Street and US 101 Southbound Ramps/Tenth Street. Marked crosswalks at the intersection of Chestnut Street and Ninth Street also are recommended.

Hotel Access. It is recommended that hotel guests be directed to use the Ninth Street driveways to access the site, with the use of signage, in an effort to reduce the amount of vehicles circulating the site. This could be accomplished by including this recommendation in the hotel directions provided to guests with the check-in information.

Truck Access. The site must be designed to allow all vehicular access and circulation within the site. Drive aisle widths and curb radii must be wide enough to accommodate the larger travel path associated with larger trucks, including emergency vehicles, delivery trucks, and garbage trucks.

Pedestrian On-Site Circulation. It is recommended that a second marked pedestrian pathway connecting the northwest parking area to the south part of the site be considered. This pathway could be an extension of the proposed pedestrian pathway shown on the site plan between Restaurant 1 and the trash enclosure. However, this second pedestrian crossing would require the relocation of the trash enclosure and truck parking currently being proposed along the main drive aisle north of Restaurant 1.

Recommended Bicycle Facility Improvements

Install Bicycle Parking Facilities. It is recommended that the proposed project provide adequate bicycle parking supply on site, based on VTA's recommends bicycle-parking rates, to serve the potential demand of the project. Based on VTA's bicycle parking supply recommendations, the proposed project should provide 9 Class I (bike lockers) and 6 Class II (bike racks) bicycle parking spaces.

Recommended Pedestrian Circulation Improvements

Upgrade Curbs Ramps to ADA Standards. It is recommended that curb ramps at the intersection of Chestnut Street/Tenth Street be upgraded to comply with ADA standards.

Installation of Crosswalks. It is recommended that crosswalks and ADA-compliant curb ramps be installed at the intersection of Chestnut Street/Ninth Street.

Table ES 2
Intersection Level of Service Results

Study Int. Number	Intersection	Intersection Control	LOS Standard	TIF Int.[1]	Peak Hour	Count Date	Existing Avg. Delay	Existing LOS	Existing Warrant Met?[2]	Background Avg. Delay	Background LOS	Background Warrant Met?[2]	Background Plus Project Avg. Delay	Background Plus Project LOS	Background Plus Project Delay Change[3]	Background Plus Project Warrant Met?[2]	Cumulative No Project Avg. Delay	Cumulative No Project LOS	Cumulative No Project Warrant Met?[2]	Cumulative Plus Project Avg. Delay	Cumulative Plus Project LOS	Cumulative Plus Project Delay Change[3]	Cumulative Plus Project Warrant Met?[2]
1	Monterey Road and Tenth Street	Signal	D	No	AM	5/7/19	22.7	C	--	21.6	C	--	21.6	C	+0.0	--	24.3	C	--	24.5	C	+0.2	--
					PM	9/5/19	27.4	C	--	27.8	C	--	28.0	C	+0.2	--	40.1	D	--	40.8	D	+0.7	--
					SAT	9/7/19	29.1	C	--	28.4	C	--	28.6	C	+0.2	--	34.8	C	--	35.4	D	+0.6	--
2	Alexander Street and Tenth Street	Signal	D	No	AM	11/5/19	18.7	B	--	17.1	B	--	17.0	B	-0.1	--	19.1	B	--	19.0	B	-0.1	--
					PM	11/5/19	17.8	B	--	17.7	B	--	17.9	B	+0.2	--	24.0	C	--	24.5	C	+0.5	--
					SAT	9/28/19	20.0	C	--	18.0	B	--	17.7	B	-0.3	--	23.8	C	--	23.8	C	+0.0	--
3	Chestnut Street/Automall Parkway and Tenth Street	Signal	D	No	AM	5/7/19	31.3	C	--	29.9	C	--	34.9	C	+5.0	--	29.4	C	--	34.7	C	+5.3	--
					PM	5/7/19	34.3	C	--	33.8	C	--	39.1	D	+5.3	--	34.5	C	--	40.8	D	+6.3	--
					SAT	9/7/19	32.1	C	--	32.1	C	--	39.2	D	+7.1	--	32.7	C	--	40.9	D	+8.2	--
4	US 101 Southbound Ramps and Tenth Street	Signal	D	No	AM	5/7/19	19.4	B	--	20.1	C	--	20.4	C	+0.3	--	20.8	C	--	21.2	C	+0.4	--
					PM	5/7/19	22.9	C	--	25.4	C	--	26.1	C	+0.7	--	27.1	C	--	28.4	C	+1.3	--
					SAT	9/7/19	27.3	C	--	28.2	C	--	28.8	C	+0.6	--	30.1	C	--	31.2	C	+1.1	--
5	US 101 Northbound Ramps and Pacheco Pass Highway (SR 152)	Signal	D	No	AM	5/7/19	8.8	A	--	9.1	A	--	9.5	A	+0.4	--	10.0	A	--	10.4	B	+0.4	--
					PM	5/7/19	7.2	A	--	8.5	A	--	9.4	A	+0.9	--	10.7	B	--	12.4	B	+1.7	--
					SAT	9/7/19	10.7	B	--	11.0	B	--	11.5	B	+0.5	--	13.0	B	--	14.0	B	+1.0	--
6	Camino Arroyo and Pacheco Pass Highway (SR 152)	Signal	D	Yes	AM	5/7/19	21.2	C	--	18.2	B	--	18.2	B	+0.0	--	19.5	B	--	19.5	B	+0.0	--
					PM	5/7/19	29.1	C	--	31.1	C	--	31.2	C	+0.1	--	33.0	C	--	33.1	C	+0.1	--
					SAT	9/28/19	49.8	D	--	52.0	D	--	52.2	D	+0.2	--	**55.5**	**E**	--	**55.8**	**E**	**+0.3**	--
7	Church Street and Tenth Street	Signal	C	No	AM	9/26/19	33.8	C	--	29.4	C	--	29.6	C	+0.2	--	29.4	C	--	29.7	C	+0.3	--
					PM	9/26/19	25.4	C	--	21.8	C	--	22.0	C	+0.2	--	25.0	C	--	25.6	C	+0.6	--
					SAT	9/28/19	25.3	C	--	21.9	C	--	22.0	C	+0.1	--	23.0	C	--	23.4	C	+0.4	--
8	Princevalle Street and Tenth Street	Signal	C	No	AM	9/26/19	**38.2**	**D**	--	**35.9**	**D**	--	**36.4**	**D**	**+0.5**	--	**37.1**	**D**	--	**37.9**	**D**	**+0.8**	--
					PM	9/26/19	20.6	C	--	29.5	C	--	31.1	C	+1.6	--	**104.6**	**F**	--	**109.4**	**F**	**+4.8**	--
					SAT	9/28/19	18.5	B	--	19.9	B	--	20.3	C	+0.4	--	**49.3**	**D**	--	**54.1**	**D**	**+4.8**	--
9	Monterey Road and Luchessa Avenue	Signal	D	Yes	AM	11/5/19	20.9	C	--	21.5	C	--	22.0	C	+0.5	--	22.1	C	--	22.5	C	+0.4	--
					PM	9/5/19	30.9	C	--	33.5	C	--	34.0	C	+0.5	--	36.7	D	--	37.7	D	+1.0	--
					SAT	9/7/19	21.2	C	--	21.9	C	--	22.5	C	+0.6	--	23.5	C	--	24.2	C	+0.7	--
10	Chestnut Street and Ninth Street	Two-Way Stop (Worst Approach)	D	No	AM	5/7/19	12.3	B	No	12.7	B	No	17.8	C+	+5.1	No	12.9	B	No	18.5	C	+5.6	No
					PM	5/7/19	13.9	B-	No	15.1	C+	No	28.9	D	+13.8	No	15.9	C+	No	32.9	D-	+17.0	No
					SAT	9/28/19	11.8	B	No	12.7	B	No	22.6	C-	+9.9	No	13.3	B	No	25.5	D+	+12.2	No

Notes:
[1] TIF Int. = City of Gilroy Traffic Impact Fee intersection.
[2] Signal warrant analysis based on the Peak Hour Signal Warrant #3, Figure 4C Caltrans MUTCD, 2014.
Signal warrant analysis is not applicable to signalized intersections.
[3] Change in delay, expressed in seconds, for background plus project conditions is measured relative to background conditions.
Change in delay, expressed in seconds, for cumulative plus project conditions is measured relative to cumulative no project conditions.
* = CMP intersection
Entries denoted in **bold** indicate conditions that exceed the City's current level of service standard.
- Denotes project deficiency based on City of Gilroy criteria.

Table ES 3
Freeway Segment Level of Service Results

					Existing Plus Project						Project Trip		
#	Freeway	Segment	Direction	Peak Hour	Speed[1] (mi/hr)	# of Lanes[1]	Capacity (vph)	Volume[1] (pc/h)	Density (pc/mi/ln)	LOS	Volume (vph)	% of Capacity	Adverse Effect?
1	US 101	from Betabel Road to Bloomfield Avenue (SR 25)	NB	AM	38	2	4,400	3,765	50	E	6	0.14	No
			NB	PM	58	2	4,400	3,768	33	D	9	0.20	No
			NB	SAT	48	2	4,400	4,517	47	E	6	0.14	No
2	US 101	from Bloomfield Avenue (SR 25) to Monterey Road	NB	AM	36	2	4,400	3,697	51	E	6	0.14	No
			NB	PM	42	2	4,400	3,890	46	D	9	0.20	No
			NB	SAT	44	2	4,400	3,731	43	D	6	0.14	No
3	US 101	from Monterey Road to Pacheco Pass Highway	NB	AM	64	3	6,900	4,302	22	C	6	0.09	No
			NB	PM	63	3	6,900	4,547	24	C	9	0.13	No
			NB	SAT	66	3	6,900	4,362	22	C	6	0.09	No
4	US 101	from Pacheco Pass Highway to Leavesley Road	NB	AM	59	3	6,900	5,582	32	D	21	0.30	No
			NB	PM	59	3	6,900	5,480	31	D	24	0.35	No
			NB	SAT	61	3	6,900	5,378	30	D	31	0.45	No
5	US 101	from Leavesley Road to Masten Avenue	NB	AM	40	3	6,900	5,776	48	E	21	0.30	No
			NB	PM	57	3	6,900	5,770	34	D	24	0.35	No
			NB	SAT	46	3	6,900	7,157	52	E	31	0.45	No
6	US 101	from Masten Avenue to San Martin Avenue	NB	AM	34	3	6,900	5,432	53	E	21	0.30	No
			NB	PM	52	3	6,900	5,981	38	D	24	0.35	No
			NB	SAT	41	3	6,900	7,537	**61**	**F**	31	0.45	No
7	US 101	from San Martin Avenue to Masten Avenue	SB	AM	60	3	6,900	5,383	30	D	36	0.52	No
			SB	PM	38	3	6,900	5,665	50	E	37	0.54	No
			SB	SAT	39	3	6,900	5,450	46	D	47	0.68	No
8	US 101	from Masten Avenue to Leavesley Road	SB	AM	67	3	6,900	2,636	13	B	36	0.52	No
			SB	PM	66	3	6,900	5,547	28	D	37	0.54	No
			SB	SAT	66	3	6,900	5,447	28	D	47	0.68	No
9	US 101	from Leavesley Road to Pacheco Pass Highway	SB	AM	64	3	6,900	4,417	23	C	36	0.52	No
			SB	PM	59	3	6,900	5,507	31	D	37	0.54	No
			SB	SAT	62	3	6,900	5,244	28	D	47	0.68	No
10	US 101	from Pacheco Pass Highway to Monterey Road	SB	AM	64	3	6,900	4,216	22	C	10	0.14	No
			SB	PM	30	3	6,900	5,145	56	E	13	0.19	No
			SB	SAT	31	3	6,900	5,095	55	E	14	0.20	No
11	US 101	from Monterey Road to Bloomfield Avenue (SR 25)	SB	AM	62	2	4,400	3,306	27	D	10	0.23	No
			SB	PM	21	2	4,400	2,795	**67**	**F**	13	0.30	No
			SB	SAT	22	2	4,400	2,657	**61**	**F**	14	0.32	No
12	US 101	from Bloomfield Avenue (SR 25) to Betabel Road	SB	AM	62	2	4,400	3,213	26	C	10	0.23	No
			SB	PM	58	2	4,400	3,728	32	D	13	0.30	No
			SB	SAT	49	2	4,400	4,435	45	D	14	0.32	No

[1] Information for the AM and PM peak hours were obtained from the Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2018. Average speed for the Saturday peak-hour was interpolated from the AM and PM peak hour volumes and speeds. Saturday peak-hour volumes on the study freeway segments were derived by calculating a factor between PM and Saturday peak-hour freeway count data for various of the study segments obtained from Caltrans, and applying this factor to the CMP PM peak-hour counts for each study freeway segment. This volume includes the proposed project trips.

Bold indicates unacceptable LOS.

Table ES 4
Freeway Ramp Analysis Results

Interchange/Ramp	Peak Hour	Ramp Type	Ramp Type	Constraint Point[1]	Existing					Background Plus Project				
					Control	Volume[3] (vph)	Capacity[2] (vph)	V/C	LOS	Control	Volume (vph)	Capacity[2] (vph)	V/C	LOS
US 101 at Tenth Street/Pacheco Pass Highway (SR 152)														
Southbound Off-Ramp	AM	Diagonal	Off	2	Signal	743	3,600	0.206	A	Signal	1,019	3,600	0.283	A
	PM				Signal	1,417	3,600	0.394	A	Signal	1,737	3,600	0.483	A
	SAT				Signal	1,304	3,600	0.362	A	Signal	1,544	3,600	0.429	A
Southbound On-Ramp	AM	Diagonal	On	1	Meter-Off	98	1,800	0.054	A	Meter-Off	167	1,800	0.093	A
	PM				Meter-On	139	900	0.154	A	Meter-On	197	900	0.219	A
	SAT				Meter-Off	132	1,800	0.073	A	Meter-Off	214	1,800	0.119	A
Northbound Off-Ramp	AM	Diagonal	Off	1	Signal	377	1,800	0.209	A	Signal	572	1,800	0.318	A
	PM				Signal	329	1,800	0.183	A	Signal	496	1,800	0.276	A
	SAT				Signal	594	1,800	0.330	A	Signal	715	1,800	0.397	A
Northbound On-Ramp	AM	Loop	On	1	Meter-On	291	900	0.323	A	Meter-On	465	900	0.517	A
	PM				Meter-Off	296	1,600	0.185	A	Meter-Off	493	1,600	0.308	A
	SAT				Meter-Off	330	1,600	0.206	A	Meter-Off	537	1,600	0.336	A

Notes:
1. The constraint point of a ramp is the location on the ramp that dictates how much traffic enters/exits the freeway. The constraint point determines the ramp's capacity.
   For freeway off-ramps, the constraint point is at the ramp's diverging point from the freeway mainline.
   For non-metered on-ramps, the constraint point is at the ramp's merging point with the freeway.
   For metered on-ramps, the constraint point is at the meter.
2. Typical capacities for diagonal and loop ramps are 1,800 and 1,600 vehicles per hour per lane (vphpl), respectively.
   The capacity for non-metered ramps is determined based on the number of lanes at the ramp's constraint point.
   The capacity for metered on-ramps was assumed to be 900 vph (Caltrans District 4 maximum meter rate).
3. Existing ramp volumes were interpolated from existing peak-hour turn-movement counts at the ramp intersections.
   The ramp level of service corresponds to the calculated ramp V/C ratios.

Table ES 5
Intersection Vehicle Queue Analysis Results

	1. Monterey/ Tenth			3. Chestnut/10th									5. US 101 NB Off-Ramp/SR 152			9. Monterey/ Luchessa			10. Chestnut/ Ninth		
Measurement	**WBL AM**	**WBL PM**	**WBL SAT**	**EBL AM**	**EBL PM**	**EBL SAT**	**SBL/T/R AM**	**SBL/T/R PM**	**SBL/T/R SAT**	**WBL AM**	**WBL PM**	**WBL SAT**	**NBL AM**	**NBL PM**	**NBL SAT**	**EBL AM**	**EBL PM**	**EBL SAT**	**WBL/T/R AM**	**WBL/T/R PM**	**WBL/T/R SAT**
Existing Conditions																					
Cycle/Delay[1] (sec)	85	100	110	120	130	125	120	130	125	120	130	125	65	85	75	85	100	80	12.3	13.9	11.8
Lanes	1	1	1	1	1	1	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	55	127	110	35	49	63	269	309	296	281	330	378	117	108	126	106	59	39	12	33	11
Volume (vphpl)	55	127	110	35	49	63	90	103	99	281	330	378	117	108	126	106	59	39	12	33	11
Avg. Queue (veh/ln.)	1	4	3	1	2	2	3	4	3	9	12	13	2	3	3	3	2	1	0	0	0
Avg. Queue[2] (ft./ln)	32	88	84	29	44	55	75	93	86	234	298	328	53	64	66	63	41	22	1	3	1
95th %. Queue (veh/ln.)	3	7	7	3	4	5	6	7	7	15	18	19	5	5	6	5	4	3	1	1	1
95th %. Queue (ft./ln)	75	175	175	75	100	125	150	175	175	375	450	475	125	125	150	125	100	75	25	25	25
Storage (ft./ ln.)	150	150	150	200	200	200	675	675	675	350	350	350	275	275	275	150	150	150	300	300	300
Adequate (Y/N)	YES	**NO**	**NO**	YES	YES	YES	YES	YES	YES	**NO**	**NO**	**NO**	YES	YES	YES	YES	YES	YES	YES	YES	YES
Background Conditions																					
Cycle/Delay[1] (sec)	85	100	110	120	130	125	120	130	125	120	130	125	65	85	75	85	100	80	12.7	15.1	12.7
Lanes	1	1	1	1	1	1	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	57	135	115	35	49	68	304	394	369	283	331	379	136	131	146	111	64	44	12	33	11
Volume (vphpl)	57	135	115	35	49	68	101	131	123	283	331	379	136	131	146	111	64	44	12	33	11
Avg. Queue (veh/ln.)	1	4	4	1	2	2	3	5	4	9	12	13	2	3	3	3	2	1	0	0	0
Avg. Queue[2] (ft./ln)	34	94	88	29	44	59	84	119	107	236	299	329	61	77	76	66	44	24	1	3	1
95th %. Queue (veh/ln.)	3	7	7	3	4	5	7	9	8	15	18	19	5	6	6	6	4	3	1	1	1
95th %. Queue (ft./ln)	75	175	175	75	100	125	175	225	200	375	450	475	125	150	150	150	100	75	25	25	25
Storage (ft./ ln.)	150	150	150	200	200	200	675	675	675	350	350	350	275	275	275	150	150	150	300	300	300
Adequate (Y/N)	YES	**NO**	**NO**	YES	YES	YES	YES	YES	YES	**NO**	**NO**	**NO**	YES	YES	YES	YES	YES	YES	YES	YES	YES
Background Plus Project Conditions																					
Cycle/Delay[1] (sec)	85	100	110	120	130	125	120	130	125	120	130	125	65	85	75	85	100	80	17.9	25.7	21.7
Lanes	1	1	1	1	1	1	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	73	150	138	97	100	146	586	646	739	289	335	386	198	187	225	123	74	60	147	174	202
Volume (vphpl)	73	150	138	97	100	146	195	215	246	289	335	386	198	187	225	123	74	60	147	174	202
Avg. Queue (veh/ln.)	2	4	4	3	4	5	7	8	9	10	12	13	4	4	5	3	2	1	1	1	1
Avg. Queue[2] (ft./ln)	43	104	105	81	90	127	163	194	214	241	302	335	89	110	117	73	51	33	18	31	30
95th %. Queue (veh/ln.)	4	8	8	6	7	9	11	13	14	15	18	20	7	8	8	6	5	3	2	3	3
95th %. Queue (ft./ln)	100	200	200	150	175	225	275	325	350	375	450	500	175	200	200	150	125	75	50	75	75
Storage (ft./ ln.)	150	150	150	200	200	200	675	675	675	350	350	350	275	275	275	150	150	150	300	300	300
Adequate (Y/N)	YES	**NO**	**NO**	YES	YES	**NO**	YES	YES	YES	**NO**	**NO**	**NO**	YES	YES	YES	YES	YES	YES	YES	YES	YES

[1] Vehicle queue calculations based on cycle length for signalized intersections and control delay for unsignalized intersections.
[2] Assumes 25 feet per vehicle in the queue.
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, R = Right, T = Through, L = Left.

1. Introduction

This report presents the results of the transportation analysis completed for the proposed new commercial development at the northeast corner of the Chestnut Street and Tenth Street intersection, in the City of Gilroy, California. The approximately 6.6-acre project site is generally bounded by Tenth Street to the south, Chestnut Street to the west, Ninth Street to the north, and the US 101 southbound off-ramp to the east. Existing uses on-site include a shopping center, the Chestnut Street Fire Station, a tire shop, and industrial uses. The proposed project would replace the existing uses on-site (with the exception of the existing tire shop and the Fire Station, located at the northwest corner of the site) with the following land uses, subdivided into six separate parcels:

- Parcel A: a 6 fuel-pump/12 fueling positions gas station with a 4,103 square-foot (s.f.) convenience store
- Parcel B: a 2,365 s.f. coffee shop with drive-through window
- Parcel C: a 3,500 s.f. sit-down restaurant with drive-through window
- Parcel D: a 5,182 s.f. sit-down restaurant with drive-through window
- Parcel E: a car wash with a 125-foot washing tunnel, 27 vacuum spaces, and capacity for approximately 15 vehicles to queue at the car wash entrance
- Parcel F: a 120-room, 5-story hotel

Access to the proposed project would be provided via one driveway on Tenth Street, one driveway on Chestnut Street, and two driveways on Ninth Street. The project site location and surrounding study area are shown on Figure 1. The site plan is shown on Figure 2.

Scope of Study

The purpose of this transportation analysis is to evaluate the potential transportation impacts associated with the increase in traffic due to the proposed project in conformance with the requirements of the California Environmental Quality Act (CEQA) and the City of Gilroy.

This transportation study has been prepared in accordance with the standards and methodologies set forth by the City of Gilroy, by the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program's *Transportation Impact Guidelines* (October 2014), and by the California Environmental Quality Act (CEQA). The VTA administers the Congestion Management Program (CMP) for Santa Clara County.

Figure 1
Site Location

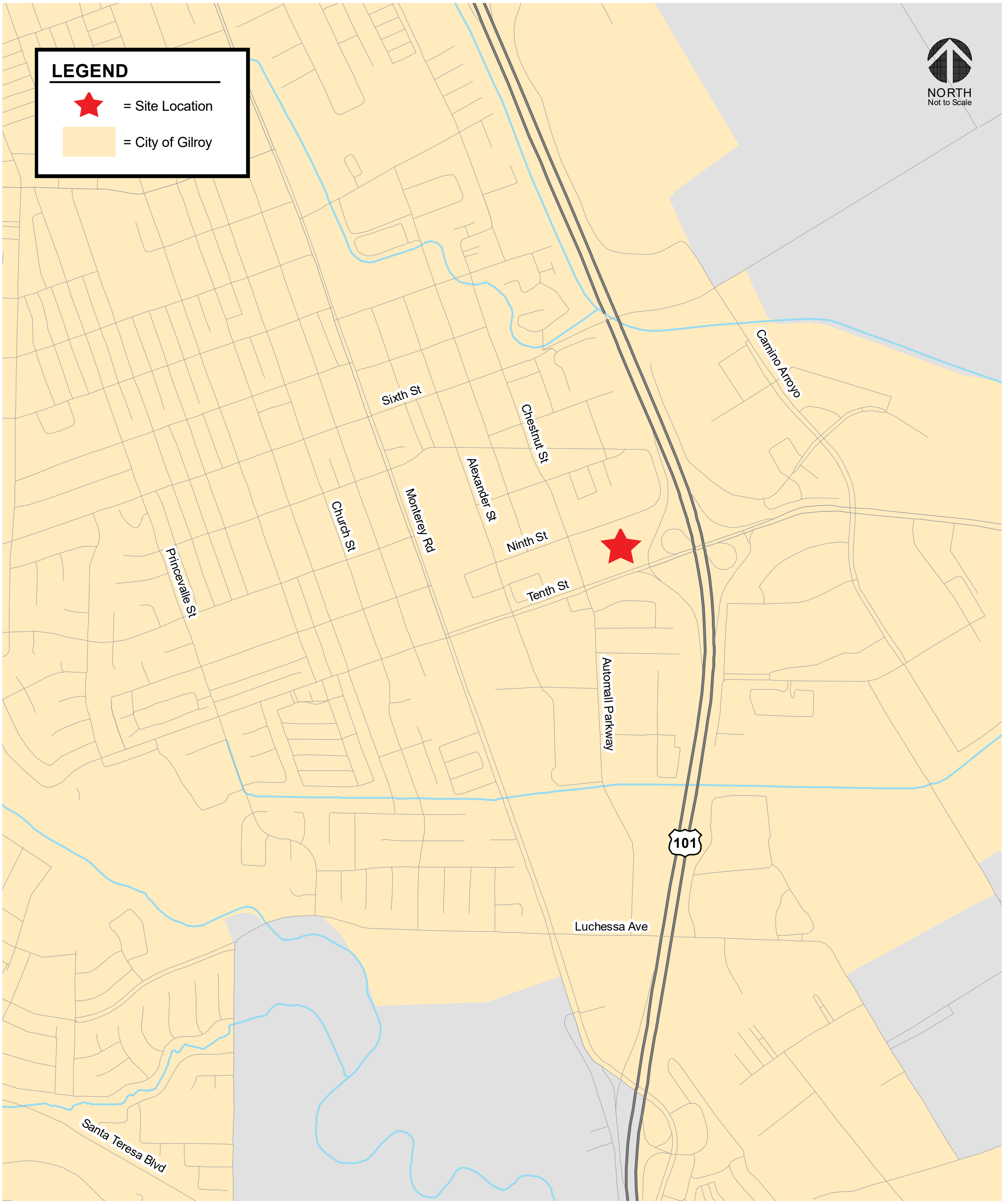
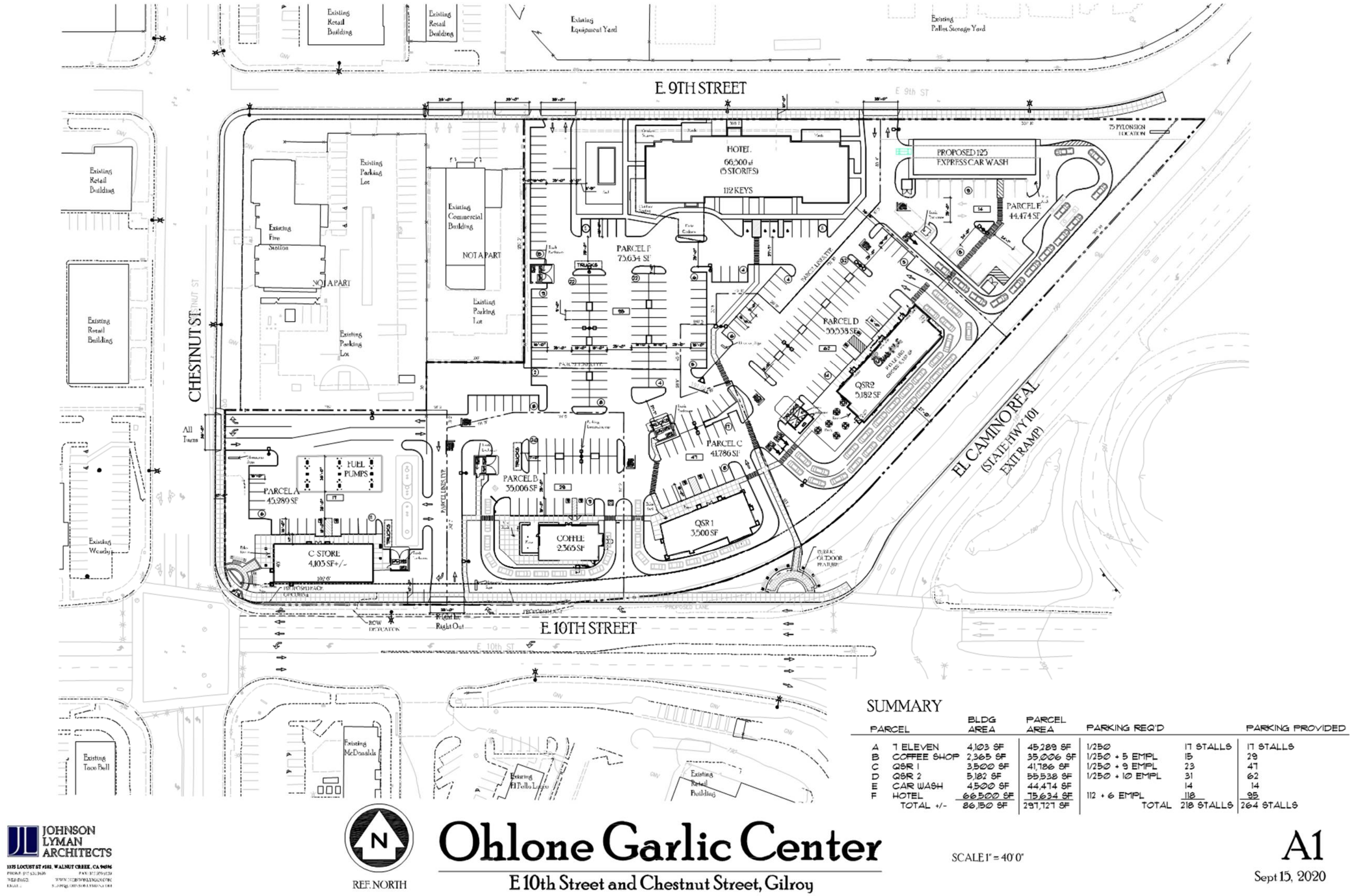


Figure 2
Proposed Site Plan



Like most other jurisdictions in Santa Clara County and the State, the City of Gilroy has historically utilized delay and congestion on the roadway system as the primary analysis metric to evaluate traffic impacts and potential roadway improvements to relieve traffic congestion that may result from proposed/planned growth. However, the State of California has recognized the limitations of measuring and mitigating only vehicle delay at intersections and in 2013 passed Senate Bill (SB) 743, which requires jurisdictions to stop using congestion and delay metrics, such as Level of Service (LOS), as the measurement for CEQA transportation analysis. With the adoption of SB 743 legislation and the updated CEQA Guidelines (Section 15064.3, Nov 2017), beginning July 1, 2020, the use of intersection level of service as a metric for determining impacts of development growth on the transportation system will no longer be permitted. The use of vehicle miles traveled (VMT) has become the primary metric for the evaluation of impacts on transportation systems due to land use decisions. The change in measurement is intended to better evaluate the effects of development growth on the State's goal for climate change and multi-modal transportation. Therefore, in adherence to SB 743, the effects and impacts to the transportation network as the result of the implementation of the proposed project were evaluated based on VMT.

However, the City of Gilroy currently uses LOS as their adopted methodology for the evaluation of the effects of new development and land use changes on the local transportation network. In addition, the City is still required to conform to the requirements of the VTA, which establishes a uniform program for evaluating the transportation impacts of land use decisions on the designated CMP Roadway System. The VTA's Congestion Management Program (CMP) has yet to adopt and implement guidelines and standards for the evaluation of the CMP roadway system using VMT. Therefore, in addition to the evaluation of VMT, this transportation study also includes level of service analysis to evaluate the effects of the proposed project on the citywide transportation system, including intersections, freeway segments, and freeway ramps. The level of service analysis is presented to determine conformance to General Plan transportation policies. The determination of project impacts per CEQA requirements is based on the VMT analysis.

Data Requirements

This section describes the data required for the analysis of the proposed project and presents the methods used to determine VMT and the traffic conditions without and with the project.

Data Requirements

The data required for the analysis (both VMT and LOS) were obtained from new traffic counts, previous traffic studies, the City of Gilroy, the CMP Annual Monitoring Report, the City of Gilroy Travel Demand Forecasting Model, and field observations. The following data were collected from these sources:

- existing traffic volumes
- existing and planned lane configurations
- signal timing and phasing (for signalized intersections only)
- average speed (for freeway segments only)
- approved and pending developments information (size, use, and location)
- VMT projections

City of Gilroy Travel Demand Forecasting Model

The Gilroy Travel Demand Forecasting (TDF) Model was utilized for the evaluation of the proposed project. The Gilroy Model, built in 2014, was developed as an extension and refinement of the Santa Clara Valley Transportation Authority Model (VTA Model). The Gilroy Model is a subarea model of

VTA's Model and provides a more detailed roadway network and zone system within Gilroy. The Gilroy Model was last updated for the evaluation of the City of Gilroy 2040 General Plan and has a 2017 base year (based on VTA/ABAG *Projections 2017*) and a 2040 horizon year (based on City of Gilroy 2040 General Plan land use data).

Analysis Methodologies, Standards, and Impact Thresholds

CEQA Vehicle Miles Traveled Analysis

The State's Office of Planning and Research (OPR) requires using Vehicle Miles Traveled (VMT) instead of Level of Service to evaluate potential project transportation impacts under the California Environmental Quality Act (CEQA). VMT is a metric that is used in noise, air quality, and greenhouse gas emissions analyses because it provides an indication of the usage level of the automobile and truck transportation system within the city. A greater number of vehicle miles traveled generally means more noise and more air pollution. In accordance with CEQA, all proposed projects are required to analyze transportation as a component of environmental review using average trip length per resident and/or per employee as metrics (total VMT for retail/commercial projects). The average trips length is calculated by multiplying the number of vehicle trips by the travel distance divided by the number of residents or employees. VMT data for the proposed project was calculated using the City of Gilroy Travel Demand Forecasting model and is based on total VMT for the project and VMT per employee metrics.

The City of Gilroy draft guidelines for the evaluation of transportation impacts based on VMT are based on OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures, contained in their *Technical Advisory on Evaluating Transportation Impacts in CEQA* document, dated December 2018. Thus, for the purpose of this analysis, a comparison of the citywide VMT (or baseline VMT) versus the citywide VMT with implementation of the project is made to determine the effects of the proposed project. The VMT analysis uses OPR's recommendation of a net increase in total VMT from baseline conditions as the threshold to identify potential VMT impacts for commercial/retail projects.

Roadway Capacity (Level of Service) Analysis

Traffic conditions of the transportation roadway network also were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. Level of service analyses were conducted for intersections, freeway segments, and freeway ramps.

The level of service analysis includes a total of 9 signalized intersections and one unsignalized intersection, all of them located within the Gilroy city limits. The analysis also includes a freeway segment analysis (seven freeway segments, or fourteen directional segments) and a freeway interchange analysis (one interchange).

All study intersections were evaluated based on City of Gilroy methodology and level of service standards. Study freeway segments and freeway ramps were evaluated based on CMP and Caltrans methodology and level of service standards. Traffic conditions at the study facilities were analyzed for the weekday AM and PM peak hours of adjacent street traffic and the Saturday peak-hour. The AM peak hour typically occurs between 7:00 AM and 9:00 AM and the PM peak hour typically occurs between 4:00 PM and 6:00 PM on a regular weekday. The Saturday peak-hour is generally an hour between the 11:00 AM to 2:00 PM period. It is during these times that the most congested traffic conditions occur on an average day.

Study Scenarios

Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing conditions are represented by existing peak-hour traffic volumes on the existing roadway network. Existing intersection traffic volumes were obtained from new traffic counts conducted in 2019.

Scenario 3: *Background Conditions*. Background traffic conditions represent future traffic volumes on the future transportation network. Background traffic volumes were estimated by adding to existing peak-hour volumes the projected trips from approved but not yet constructed developments in the study area. Background conditions represent the baseline conditions to which project conditions are compared for the purpose of determining the project's adverse traffic effects on the surrounding roadway network.

Scenario 4: *Background Plus Project Conditions.* Background plus project conditions, or simply referred to as *Project Conditions*, represent future traffic volumes with the proposed project. Background plus project conditions were estimated by adding to background traffic volumes the trips associated with the proposed project (or *project traffic volumes*). Background plus project conditions were evaluated relative to background conditions in order to determine adverse traffic effects on the roadway network caused by the proposed project.

Scenario 5: *Cumulative Conditions.* Cumulative conditions represent future traffic volumes on the future transportation network that would result from traffic growth projected to occur due to proposed but not yet approved (pending) development projects. Traffic volumes from proposed but not yet approved developments were added to background conditions peak-hour volumes to obtain volumes for cumulative without project conditions. Cumulative conditions were evaluated for two scenarios: (1) without the proposed project and (2) with project-generated traffic. The change between these two scenarios illustrates the relative effect the proposed project could have on cumulative conditions.

Report Organization

The remainder of this report is divided into four chapters. Chapter 2 describes the existing transportation system including the existing roadway network, transit service, bicycle and pedestrian facilities. Chapter 3 describes the CEQA transportation analysis, including VMT analysis methodology, baseline and potential project VMT impacts. Chapter 4 describes the roadway capacity (LOS) analysis and includes the method by which project traffic is estimated, traffic volume projections, analysis methodologies, any adverse traffic effects on the roadway network (including intersections, freeway segments, freeway ramps) caused by the project, intersection vehicle queuing analysis, site access and on-site circulation review, effects on bicycle, pedestrian, and transit facilities, and parking, and possible improvements that would improve projected deficiencies to acceptable levels. Chapter 5 presents the conclusions of the transportation analysis.

2.
Existing Transportation Setting

This chapter describes existing conditions for the transportation system within the City of Gilroy, including the roadway network, transit service, and bicycle and pedestrian facilities.

Existing Roadway Network

Regional access to the project site is provided via US 101 and State Route 152/Pacheco Pass Highway. Local access to the project site is provided by Tenth Street, Chestnut Street, Ninth Street, Luchessa Avenue, Monterey Road, Alexander Street, Church Street, Princevalle Street, and Camino Arroyo. These facilities are shown on Figure 1 and described below.

US 101 is a six-lane freeway north of the Monterey Road interchange and transitions to a four-lane freeway south of that point. US 101 extends northward through San Jose and southward into Salinas. This freeway serves as the primary roadway connection between Gilroy and Morgan Hill and other Santa Clara County communities to the north and between Gilroy and Salinas to the south. US 101 includes full-access interchanges at Leavesley Road, Tenth Street/SR 152, and Monterey Road in Gilroy. A fourth interchange at Masten Avenue, north of Gilroy in unincorporated Santa Clara County, serves the north and northwestern areas of Gilroy. Regional access to the project site is provided via the US 101 interchange at Tenth Street/SR 152.

SR 152 (Pacheco Pass Highway) is a two- to four-lane east-west highway that extends to the east starting at the US interchange at Tenth Street, where it is known as Pacheco Pass Highway, over the Pacheco Pass to Interstate 5 and through Los Banos. West of Gilroy, SR 152 is known as Hecker Pass Highway and extends westward from the US 101 interchange at Leavesley Road via Monterey Road and First Street over the Santa Cruz Mountains to Watsonville and Highway 1. SR 152 connects the communities of Watsonville and Gilroy to the Central Valley via Interstate 5.

Tenth Street is a two- to six-lane arterial roadway that begins at Uvas Park Drive and extends eastward to US 101, where it changes designation to Pacheco Pass Highway (SR 152). Tenth Street has one lane in each direction with a two-way left-turn lane west of Church Street. Between Church Street and Monterey Road, Tenth Street consist of two lanes in each direction, then transitions to three westbound lanes and two eastbound lanes between Monterey Road and Alexander Street, three lanes in each direction with a landscape median between Alexander Street and Chestnut Street, and again to four lanes east of Chestnut Street. Tenth Street is one of six freeway crossings within Gilroy and it is proposed to be extended from its current terminus point at Uvas Parkway westward over Llagas Creek to connect to Santa Teresa Boulevard at the current Miller Avenue/Santa Teresa Boulevard intersection. Tenth Street runs along the southern project site frontage and would provide direct access to the project site via one right-in/right out access driveway.

Chestnut Street is a two-lane north-south collector roadway that begins as a cul-de-sac north of Martin Street and continues south to Tenth Street. South of Tenth Street, Chestnut Street transitions to Automall Parkway which consists of four lanes until approximately 600 feet south of Tenth Street where it transitions to a two-lane roadway until its terminus at Luchessa Avenue. Chestnut Street runs along the western project site frontage and would provide direct access to the project site via one full-access driveway.

Ninth Street is a two-lane east-west local roadway that begins as a cul-de-sac just west of Alexander Street and continues east along the north project frontage, where it curves north roughly parallel to the US-101 corridor and transitions to Crocker Lane. Crocker Lane then makes a westward turn and transitions to Old Gilroy Street, just west of its intersection with Eighth Street. Ninth Street runs along the north project frontage and would provide direct access to the project site via two full-access driveways.

Luchessa Avenue is a two- to four-lane east-west arterial street that extends from Rossi Lane on the east side of town westward under US 101 and intersects with Monterey Road and Thomas Road, then continues into the Glen Loma Ranch Specific Plan Area, where it currently terminates at Miller Avenue. Luchessa Avenue is planned to be extended westward through the Glen Loma Ranch development area and connect to the existing roundabout intersection of Santa Teresa Boulevard/Ballybunion Drive as the east leg of the intersection.

Monterey Road is a north-south arterial roadway that begins at its interchange with US 101 in the southern part of Gilroy and extends northward to San Jose. Within the city of Gilroy, Monterey Road changes designation between Monterey Road and Monterey Street. However, for the purpose of this study, it will be referred to as Monterey Road throughout the report. Monterey Road is a two-lane street between Eighth Street and Fourth Street (in the historic downtown district) and a four-lane street south of Eighth Street and north of Fourth Street. Monterey Road transitions to Bolsa Road, south of its intersection with the US-101 Northbound ramps and Travel Park Circle.

Alexander Street is a two-lane north-south local roadway that begins as a cul-de-sac south of Tenth Street and continues north to its terminus at Lewis Street.

Church Street is a two-lane north-south collector roadway that begins at Luchessa Avenue in the south part of Gilroy and extends northward terminating at Cohansey Avenue in the north side of town. Church Street runs parallel to and west of Monterey Street providing an alternative north/south roadway bypassing the downtown area.

Princevalle Street is a two-lane north-south collector roadway that begins at its intersection with Luchessa Avenue and extends northward to First Street, where it terminates just east of Miller Avenue. Princevalle Avenue provides an alternate connection between Luchessa Avenue, Tenth Street, and First Street.

Camino Arroyo is a four-lane north-south arterial roadway that extends from Arroyo Circle, just north of Sixth Street/Gilman Road, to Venture Way, south of Pacheco Pass Highway. Arroyo Circle extends northward to Leavesley Road along the east side of US 101, and in conjunction with Camino Arroyo, provides a north/south connection between Leavesley Road and Pacheco Pass Highway.

Existing Bicycle Facilities

Bicycle facilities are divided into three classes of relative significance:

- **Class I Bikeways (Bike Path)**. Class I bikeways are bike paths that are physically separated from motor vehicles and offer two-way bicycle travel on a separate path.
- **Class II Bikeways (Bike Lane)**. Class II bikeways are striped bike lanes on roadways that are marked by signage and pavement markings.
- **Class III Bikeways (Bike Route)**. Class III bikeways are bike routes and only have signs to help guide bicyclists on recommended routes to certain locations.

There are several bike lanes and a designated bike route in the vicinity of the project site. These are listed below and shown on Figure 3:

Class I Bikeways (Bike Paths)

The nearest bike path to the project site is the *Western Ronan Channel Trail*. This trail is located on the western side of the Ronan Channel between Leavesley Road and Sixth Street, and extends under US 101 and the Sixth Street overpass along the Miller Slough extending to Pacheco Pass Highway (SR 152) and terminating approximately 1,600 feet west of Holsclaw Road.

Class II Bikeways (Bike Lanes)

Class II Bikeways in the vicinity of the project site are provided along the following roadways:

- Chestnut Street, between Tenth Street and Sixth Street (including along the western project site frontage)
- Tenth Street, between Monterey Road and Orchard Drive (Gilroy High School)
- Forest Street, between Eighth Street and IOOF Avenue
- Sixth Street, between Maple Street and Camino Arroyo; between Hanna Street and Wren Avenue
- Eigleberry Street, between Tenth Street and First Street
- Church Street, between Tenth Street and First Street
- Luchessa Avenue, between Monterey Road and Princevalle Street; between Thomas Road and Miller Avenue
- Camino Arroyo/Arroyo Circle, along the entire length of the street
- Princevalle Street, between Sixth Street and Tenth Street

Class III Bikeways (Bike Routes)

Class III Bikeways in the vicinity of the project site are provided along the following roadways:

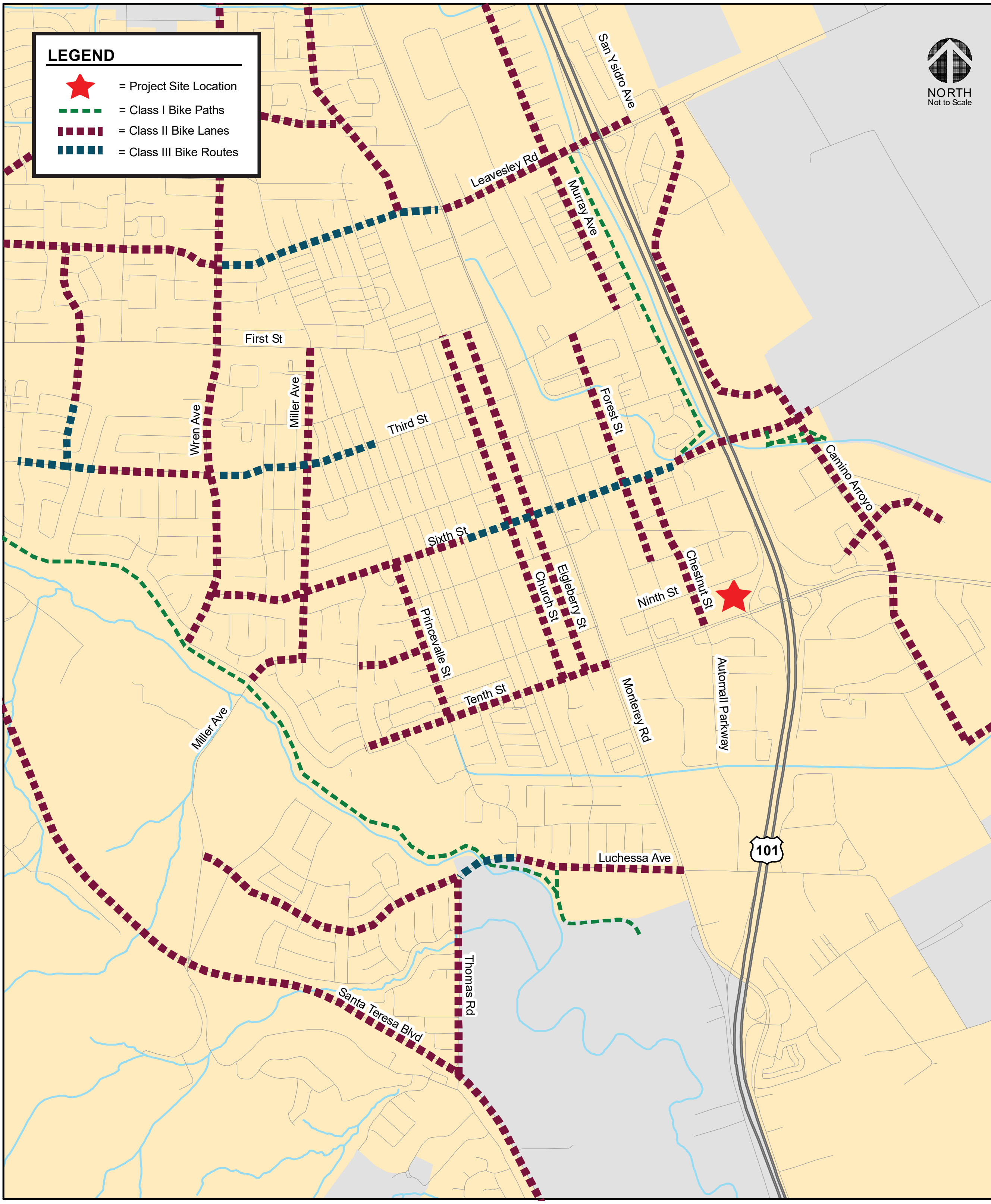
- Monterey Street, between First Street and Eighth Street
- Sixth Street, between Hanna Street and Rogers Lane

Existing Pedestrian Facilities

Pedestrian facilities in the project area consist primarily of sidewalks along most streets in the study area. Most developed areas in the vicinity of the project site currently have sidewalks along both sides of the street. However, some of the streets within the project area have missing sidewalks along one or both sides of the street, mainly along the frontages of industrial uses or undeveloped parcels. In the immediate vicinity of the project area, sidewalks are missing along the following streets:

- Ninth Street, east of the Pape Machinery Construction facility along the north side of the street and east of the Fire Station along the south side of the street (including along the northern project site frontage). Sidewalks are missing on both sides of the roadway until the transition of Ninth Street into Crocker Lane/Old Gilroy Street.

Figure 3
Existing Bicycle Facilities



- Chestnut Street, along the east side of the roadway between Eighth Street and 130 feet south of Eighth Street
- Alexander Street, along the west side of the roadway between Old Gilroy Street and 200 feet north of Tenth Street

Other pedestrian facilities in the project area include crosswalks and pedestrian push buttons along at least two of the legs at all signalized study intersections. No crosswalks are present at any of the four legs of the Chestnut Street/Ninth Street study intersection. A continuous pedestrian route along Tenth Street between Chestnut Street and Camino Arroyo (across the freeway interchange) is provided along the south side of Tenth Street only.

The City requires developers to construct sidewalks and curb ramps when a new development is approved, or to upgrade them as needed if a sidewalk already exists in the project area. Pedestrian signals and ADA-compliant crossings are also required at signalized intersections. New traffic signals and modification to existing traffic signals are required to include proper pedestrian facilities. In this way, additional pedestrian facilities are being added and/or improved as part of the city's normal growth process.

The existing pedestrian facilities in the study area are shown on Figure 4.

Existing Transit Service

Transit services in Gilroy consist of local, regional, and intercity bus services, rail service, and paratransit services. Existing transit service in Gilroy is provided primarily by Santa Clara County VTA buses. Caltrain commuter rail service, San Benito County express bus service, Monterey-Salinas transit bus service, and Greyhound bus service also serve Gilroy. The nearest bus stops serving the project site are located at the intersection of Alexander Street/Tenth Street, approximately 800 feet west of the project site. Additionally, the Gilroy Transit Station is located approximately half a mile northwest of the project site, along Monterey Road.

The existing transit services serving Gilroy are described below and shown on Figure 5. It should be noted that due to the unprecedented events caused by Covid19 and the order to shelter in place issued by Santa Clara County Department of Public Health, as of March 17, 2020 and until further notice, VTA is running reduced bus service for essential travel only. Therefore, the list of existing transit service described below represents the current limited service.

The project site is served by ***Local Route 84***, which provides weekday and weekend service between the Gilroy Transit Center and Saint Louise Regional Hospital via Tenth Street, Camino Arroyo, and San Ysidro Avenue with approximately 60-minute headways during commute hours. The nearest bus stops serving Route 84 are located at the intersection of Alexander Street/Tenth Street.

Other bus transit services currently serving Gilroy include:

- ***Local Bus Routes 85*** provides weekday and weekend service between the Gilroy Transit Center and Saint Louise Regional Hospital via Sixth Street, Wren Avenue, Kern Avenue, Mantelli Drive, Leavesley Road, and San Ysidro Avenue with approximately 60-minute headways during commute hours.

- ***Frequent Route 68*** provides weekday and weekend service between the Gilroy Transit Center and the San Jose Diridon Transit Center via Monterey Road with approximately 20- to 30-minute headways during commute hours.

Figure 4
Existing Pedestrian Facilities

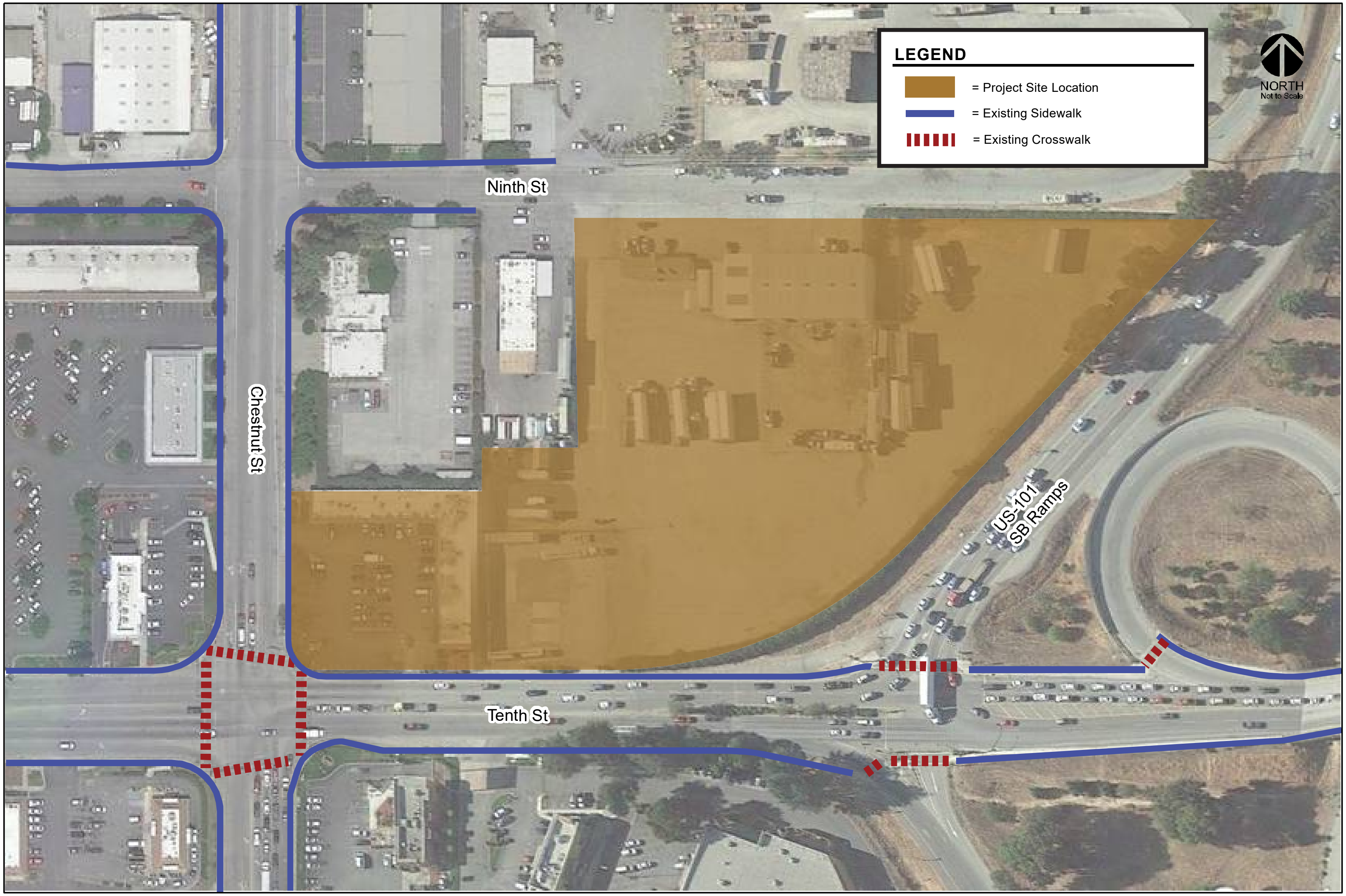
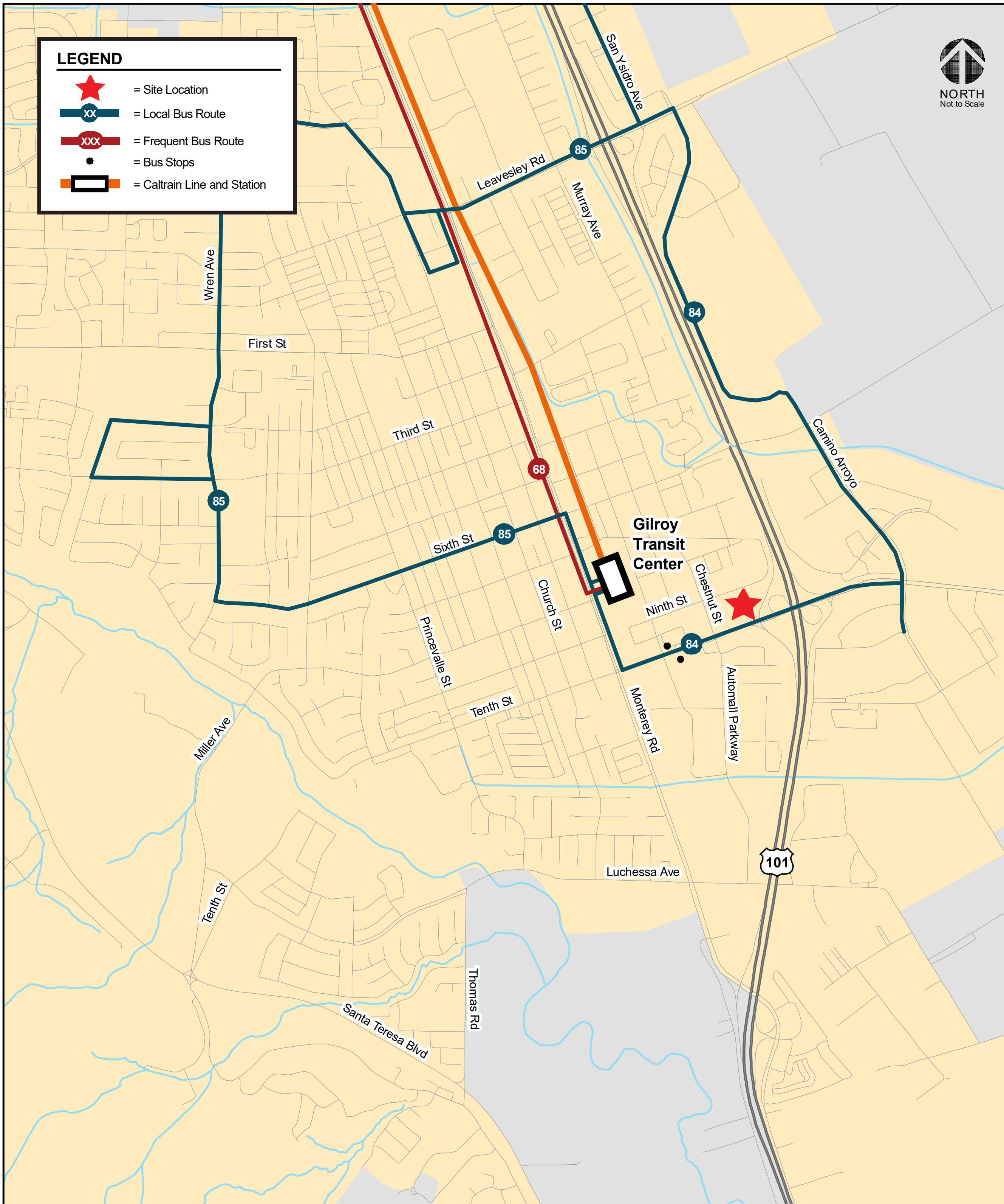


Figure 5
Existing Transit Services



- ***San Benito County Express Bus Service (Caltrain Shuttle)*** provides express bus service between Hollister and the Gilroy Transit Center Monday through Friday. Currently, five northbound (to Gilroy) shuttles run during the morning and evening commute periods, between 5:00 and 9:55 AM and between 12:05 and 6:35 PM, respectively. In addition, there are three southbound (to Hollister) runs in the morning between 7:15 and 11:10 AM and five runs in the evening between 1:15 and 7:20 PM. The schedule is coordinated with the Caltrain schedule to facilitate connections with Caltrain arrivals and departures.

- ***San Benito County Express Bus Service (Greyhound Shuttle)*** provides service between Hollister and the Gilroy Transit Center, (which serves as the Greyhound Bus Depot) on Saturdays and Sundays. There are currently two northbound (to Gilroy) and two southbound (to Hollister) runs in the morning between 7:30 and 10:15 AM and two northbound and two southbound runs in the evening between 12:05 and 5:25 PM. The schedule is designed to allow for connections to Greyhound service.

Additionally, ***Caltrain*** provides train service from Gilroy to San Francisco, with limited-stop service at other stations along the peninsula corridor. Caltrain service to Gilroy is only provided on weekdays; weekend service south of San Jose is not available. Currently, the Gilroy Caltrain station is served by two northbound trains in the morning and two southbound trains in the evening. The northbound trains have scheduled departures from the Gilroy Transit Center at 6:03 and 6:33 AM and the southbound trains have scheduled arrivals at the Gilroy Transit Center at 5:51 and 7:18 PM.

Greyhound Lines, Inc. is an intercity, long distance bus service offering services to over 3,700 destinations in the United States, Canada, and Mexico. The Gilroy Transit Center also serves as the Greyhound Bus Depot in Gilroy. Greyhound buses operate from the Transit Center every day of the week.

For informational purposes, transit service information for the Gilroy area prior to the current Covid19 reduced service was obtained from the VTA website in February 2020 and is summarized in Table 1 below.

Table 1
Bus Services in Gilroy Prior to Covid19

Route	Description	Cities Served	Stops	Days of Operation
VTA Frequent Bus Route				
68	Gilroy Transit Center to San Jose Diridon Transit Center	Gilroy San Martin Morgan Hill San Jose	Gilroy Transit Center Morgan Hill Caltrain Station Santa Teresa LRT Station Monterey Hwy & Senter San Jose Diridon Transit Center	Weekdays and Weekends
VTA Local Bus Routes				
84	Gilroy Transit Center to Saint Louise Regional Hospital via Gilroy Outlets	Gilroy	Gilroy Transit Center Camino Arroyo & Gilroy Crossing Arroyo & Camino Arroyo St. Louise Regional Hospital	Weekdays and Weekends
85	Gilroy Transit Center to Saint Louise Regional Hospital via west Gilroy	Gilroy	Gilroy Transit Center 6th & Hanna Monte Bello & Santa Barbara 1st & Kern Mantelli & Wren Howson & Monterey St. Louise Regional Hospital	Weekdays and Weekends
86	Gilroy Transit Center to Gavilan College	Gilroy	Gilroy Transit Center Princevalle & 10th Gavilan College	Weekdays only
VTA Express Bus Routes				
121	Gilroy Transit Center to Lockheed Martin Transit Center	Gilroy San Martin Morgan Hill Santa Clara Sunnyvale Mt. View	Gilroy Transit Center Monterey & San Martin Morgan Hill Caltrain Station Tasman & Old Ironsides Lockheed Martin Transit Center	Weekday peak commute direction only (NB AM and SB PM)
168	Gilroy Transit Center to San Jose Diridon Transit Center	Gilroy San Martin Morgan Hill San Jose	Gilroy Transit Center Monterey & San Martin Morgan Hill Caltrain Station San Carlos & Convention Center 1st & Santa Clara San Jose Diridon Transit Center	Weekday peak commute direction only (NB AM and SB PM)
Inter-County Bus Service				
MST 55	Monterey to Downtown San Jose (Express)	Monterey Sand City Prunedale Gilroy Morgan Hill San Jose	Monterey Transit Plaza Sand City Station Prunedale Park&Ride Gilroy Transit Center San Jose Diridon Transit Center	Weekdays and Weekends
	Greyhound	Over 3,700 destinations in the USA, Canada, and Mexico	Gilroy Transit Center	Weekdays and Weekends
Shuttles - San Benito County Express Bus Service				
Gavilan	Hollister to Gavilan College	Hollister San Juan Bautista Gilroy	Veterans' Park, 4th&San Benito, and 4th&Miller (Hollister); Abbe Park and Anzar HS (SJB); Gavilan College	Weekdays only
Caltrain	Hollister to Gilroy Transit Center	Hollister San Juan Bautista Gilroy	Veterans' Park 4th&San Benito (Hollister); Anzar HS (SJB) Gilroy Transit Center	Weekdays only
Greyhound	Hollister to Gilroy Transit Center	Hollister San Juan Bautista Gilroy	Veterans' Park, 4th&San Benito, and 4th&Miller (Hollister); Abbe Park (SJB); Gilroy Transit Center	Weekends only
Other Bus Services				
	VTA's Outreach Paratransit Service	Gilroy	By request	Weekdays and Weekends

Source: VTA Santa Clara Valley Bus and Rail Map and the Monterey-Salinas Transit website (February 2020).
Santa Clara Valley Transportation Authority website: www.VTA.org, February 2020.
Monterey-Salinas Transit website: www.mst.org, February 2020.
San Benito County Express website: www.sanbenitocountyexpress.org, February 2020.

3. CEQA Vehicle Miles Traveled (VMT) Evaluation

This chapter summarizes the VMT analysis conducted for the evaluation of the Tenth/Chestnut Commercial project.

VMT Evaluation Methodology and Criteria

VMT measures the amount and distance people drive by personal vehicle to a destination. VMT is measured by multiplying the number of vehicle trips by the length of those trips, adjusted for the number of people in the vehicles. Typically, development projects that are farther from other, complementary land uses (such as a business park far from housing) and in areas without transit or active transportation infrastructure (bike lanes, sidewalks, etc.) generate more driving, and greater VMT, than development near complementary land uses with more robust transportation options. Local-serving retail projects also would result in shorter vehicle trips as new retail development typically attracts existing customers, diverting/shortening existing shopping trips, rather than creating new trips.

VMT Evaluation Methodology

In accordance with OPR guidelines, for CEQA purposes, all proposed projects are required to analyze transportation impacts using average trip length per resident and/or per employee as metrics. The daily VMT per resident accounts for trips that start or end at the home. Daily VMT per employee is calculated based on trips made by people driving to and from work. However, commercial projects include both trips made by residents and employees. Thus, for commercial projects, OPR guidelines recommend the evaluation of total VMT.

The Gilroy Travel Demand Forecasting (TDF) model was used to calculate daily VMT for the proposed project. New commercial projects within urban areas with similar commercial opportunities are not anticipated to cause an increase in trips but rather would result in a change in trip making because some people would come to the proposed project instead of other similar commercial land uses elsewhere. Additionally, by providing complementary land uses (retail/employment) near residential areas would result in shorter trips on the roadway as residents and workers access a more convenient location rather than driving farther for a similar service. Therefore, it is expected that most of the trips to and from the site would consist of existing trips currently accessing other local retail that, with implementation of the proposed project, would divert to the proposed project site, resulting in a shortened existing trip. Furthermore, because of the location of the project site (adjacent to a freeway interchange), it is anticipated that a large percentage of project traffic would be pass-by traffic, or traffic already on the roadway system that would stop at the project site, access the proposed land uses, and continue on their final destination. These anticipated shifts in trips associated with the proposed project were coded in the Gilroy model to obtain daily VMT projections with the project.

The daily VMT for all the existing development in the City serves as the baseline from which a project is evaluated.

Significance Criteria

Pursuant to Senate Bill 743, the Governor's Office of Planning and Research (OPR) released the current *CEQA Guidelines Update* in late 2018, which proposes VMT as the replacement metric for LOS in the context of CEQA. While OPR emphasizes that a lead agency has the discretionary authority to establish thresholds of significance, the *Final Guidelines* suggests criteria that indicate when a project may have a significant, or less than significant, transportation impact on the environment. For instance, a project that results in VMT greater than the regional average for the land use type (e.g. residential, employment, commercial) may indicate a significant impact. Alternatively, a project may have a less than significant impact if it is located within 0.5 mile of an existing major transit stop, or results in a net decrease in area-wide VMT when compared to existing conditions.

For the purpose of this analysis, a comparison of the existing citywide VMT (or baseline VMT) versus the citywide VMT with the proposed project is made to determine the effects of the project. The VMT analysis considers OPR's recommendation of a net increase in total VMT from baseline conditions as the threshold to identify potential VMT impacts for commercial/retail projects.

If a project is found to have a significant impact on VMT, the impact must be reduced by modifying the project to reduce its VMT to an acceptable level (below the identified thresholds of significance), mitigating the impact through multimodal transportation improvements, and/or by establishing a trip cap.

VMT Evaluation

The results of the VMT evaluation indicate that, with implementation of the proposed project, the citywide total VMT is projected to decrease by approximately 103 VMT per day from baseline conditions. In addition, the proposed project is projected to have an average employment VMT of 18.44 per job, compared to the citywide average of 19.87 per job. Because the proposed project would result in a decrease in citywide VMT, the proposed project would not result in a significant CEQA transportation impact, based on the threshold of significance for retail uses recommended by OPR.

The VMT results are presented in Table 2.

CEQA Transportation Analysis Exemption Criteria

The 2018 OPR guidelines identify screening thresholds to determine whether a CEQA transportation analysis would be required for specific development projects. The screening thresholds are based on the project size, map-based screening (areas with low VMT), transit availability, and/or provision of affordable housing. If a project meets the screening thresholds, it is then presumed that the project, or the component of the project, would result in less-than-significant VMT impacts and a detailed CEQA VMT analysis is not required.

Table 2
VMT Analysis Summary

Citywide	No Project	With Project	Project - No Project
Total VMT	742,250	742,148	**-103**
VMT/Job	**Citywide**	**Project Only**	**Difference**
Home-Based Work VMT	429,011	2,194	
Number of Jobs	21,595	119	
HBW VMT/Job	19.87	18.44	**-1.43**

Source: City of Gilroy Travel Demand Forecasting Model.

Proposed CEQA Guidelines (Section 15064.3, subdivision (b)(1)), state that certain projects (residential, retail, office, or mixed-use projects) proposed within ½ mile distance of an existing major transit stop will have a less-than-significant impact on VMT. The proposed project is located at just over a ½-mile walking distance from the Gilroy Transit Center.

4. Roadway Capacity Analysis and Other Transportation Issues

This chapter describes the roadway capacity analysis conducted for the evaluation of the proposed project. The roadway capacity analysis is based on level of service at intersections. Included within this chapter are the method by which project traffic is estimated, intersection operations analysis, intersection queuing analysis, freeway segment and freeway ramp capacity analysis, and parking. Any adverse effects on study facilities caused by the project and possible improvements that would improve any deficient traffic conditions to acceptable conditions are identified. Other transportation issues such as site access and on-site circulation review and the effects of the project on bicycle, pedestrian, and transit facilities also are discussed within this chapter.

Project Description

The approximately 6.6-acre project site is generally bounded by Tenth Street to the south, Chestnut Street to the west, Ninth Street to the north, and the US 101 southbound off-ramp to the east. The proposed project would replace the existing uses on the project site (with the exception of the existing tire shop and the Fire Station, located at the northwest corner of the site) with the following land uses, subdivided into six separate parcels:

- Parcel A: a 6 fuel-pump/12 fueling positions gas station with a 4,103 square-foot (s.f.) convenience store
- Parcel B: a 2,365 s.f. coffee shop with drive-through window
- Parcel C: a 3,500 s.f. sit-down restaurant with drive-through window
- Parcel D: a 5,182 s.f. sit-down restaurant with drive-through window
- Parcel E: a car wash with a 125-foot washing tunnel, 27 vacuum spaces, and capacity for approximately 15 vehicles to queue at the car wash entrance
- Parcel F: a 120-room, 5-story hotel

Access to the proposed project would be provided via one driveway on Tenth Street, one driveway on Chestnut Street, and two driveways on Ninth Street. The site plan is shown on Figure 2.

Scope of Analysis

A level of service analysis at key intersections, freeway segments, and freeway ramps was completed to satisfy local guidelines and determine conformance to General Plan transportation policies. The effects of the project on the study facilities were evaluated in accordance with City of Gilroy, CMP, and

Caltrans methodologies and standards. The analyses of other transportation related issues are based on professional judgment in accordance with the standards and methods employed by the traffic engineering community.

The study intersections, freeway segments, and interchange are listed below and shown on Figure 6.

Study Intersections

The study includes the evaluation of traffic conditions at 9 signalized intersections and one unsignalized intersection, all of them located within the City of Gilroy. Three of the study intersections also are under the jurisdiction of Caltrans (denoted with a CT superscript). The following key intersections were evaluated:

1. Monterey Road and Tenth Street
2. Alexander Street and Tenth Street
3. Chestnut Street/Automall Parkway and Tenth Street
4. US 101 Southbound Ramps and Tenth Street [CT]
5. US 101 Northbound Ramps and Pacheco Pass Highway (SR 152) [CT]
6. Camino Arroyo and Pacheco Pass Highway (SR 152) [CT]
7. Church Street and Tenth Street
8. Princevalle Street and Tenth Street
9. Monterey Road and Luchessa Avenue
10. Chestnut Street and Ninth Street (unsignalized)

Study Freeway Segments

The following study freeway segments were included in the analysis of the project:

1. US 101, San Martin Avenue to Masten Avenue
2. US 101, Masten Avenue to Buena Vista Avenue
3. US 101, Buena Vista Avenue to Leavesley Road
4. US 101, Leavesley Road to Pacheco Pass Highway
5. US 101, Pacheco Pass Highway to Monterey Road
6. US 101, Monterey Road to SR 25
7. US 101, SR 25 to Betabel Road

Study Freeway Ramps

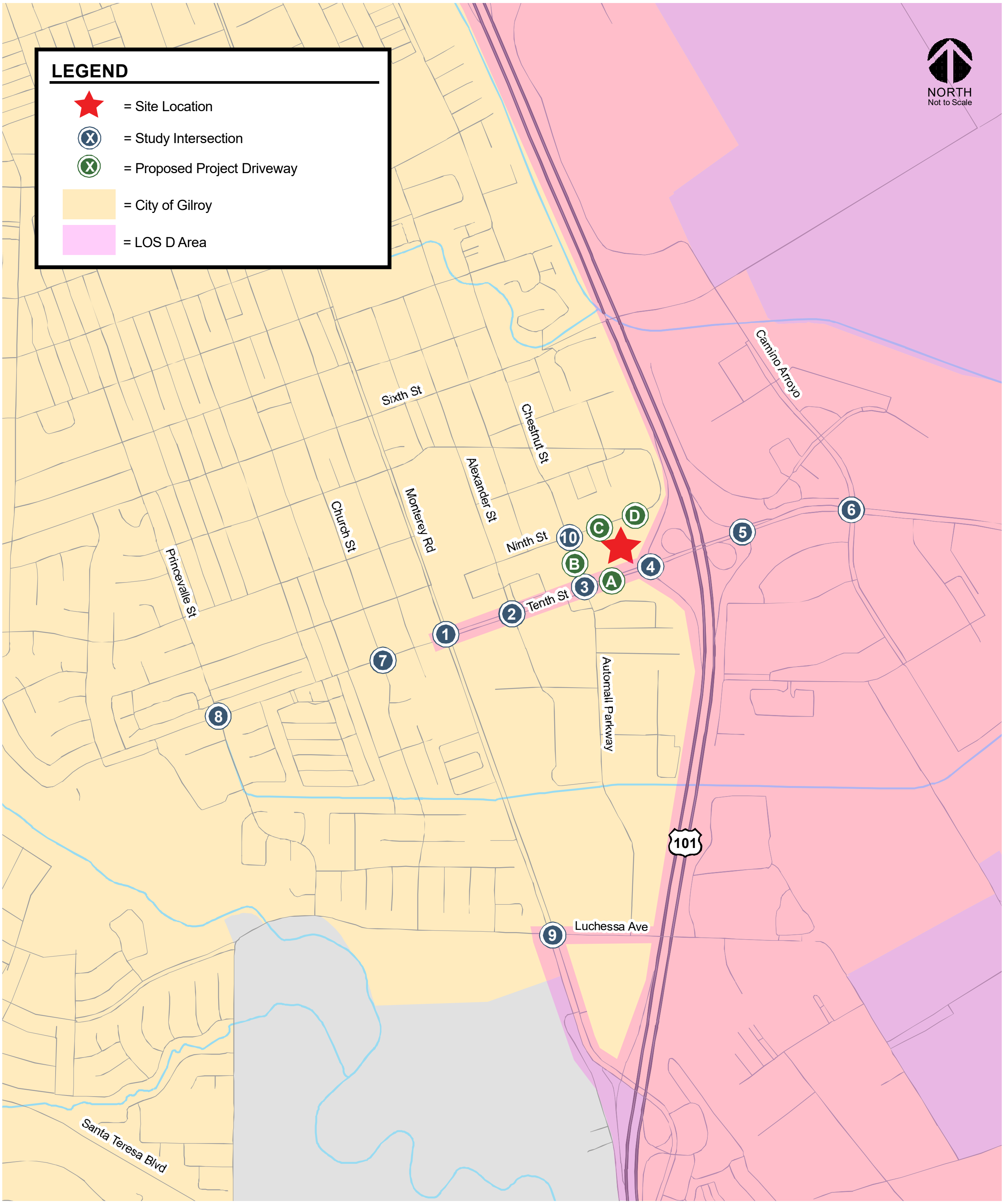
The following freeway ramps were evaluated with the project:

1. US 101 Southbound Off-Ramp at Tenth Street
2. US 101 Southbound On-Ramp at Tenth Street
3. US 101 Northbound Off-Ramp at Pacheco Pass Highway (SR 152)
4. US 101 Northbound On-Ramp at Pacheco Pass Highway (SR 152)

Project Trip Generation, Distribution, and Assignments

The magnitude of traffic produced by a new development and the locations where that traffic would appear were estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described below.

Figure 6
Study Intersections



Trip Generation

Proposed Project Trips

Through empirical research, data have been collected that correlate to common land uses their propensity for producing traffic. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. Project trip estimates are based on trip generation rates obtained from the Institute of Transportation Engineers' (ITE's) *Trip Generation*, Tenth Edition, 2017.

Project trip generation was estimated by applying to the size of the proposed development ITE trip generation rates for hotel (ITE land use code #310), gasoline/service station with convenience market (ITE land use code #945), fast-food restaurant with drive-through window (ITE land use code #934), coffee/donut shop with drive-through window (ITE land use code #937), and automated car wash (ITE land use code #948). Based on the trip generation rates and the project size, it is estimated that, prior to any trip reductions, the proposed project is estimated to generate 764 trips (394 inbound and 370 outbound) during the AM peak-hour, 697 trips (358 inbound and 339 outbound) during the PM peak-hour, and 1,018 trips (517 inbound and 501 outbound) during the Saturday peak-hour.

Trip Reductions

A 10-percent (%) trip reduction was applied to the project trip generation estimates for internalization between the proposed hotel and commercial land uses, as prescribed by VTA guidelines. This trip reduction represent patrons from the hotel walking to the proposed commercial sites instead of driving to a similar land use elsewhere, eliminating these trips from the roadway network. According to VTA guidelines, the percent reduction must be based on the smaller trip generator, in this case the hotel, and the resulting number of trips must be reduced from both components.

Furthermore, trip generation for commercial uses is typically adjusted to account for pass-by-trips. Pass-by-trips are trips that would already be on the adjacent roadways (and are therefore already counted in the existing traffic) but would turn into the site while passing by. Justification for applying the pass-by-trip reduction is founded on the observation that such retail traffic is not actually generated by the retail development, but is already part of the ambient traffic levels. Pass-by-trips are therefore excluded from the traffic projections to yield net new project trips generated by the project. However, at intersections providing direct access to the retail sites, all project-generated traffic is included, including pass-by trips. The pass-by reductions were derived based on information contained in the ITE *Trip Generation Handbook*, Third Edition 2017, as well as pass-by reductions typically used for projects in Santa Clara County.

Existing Site Trips

Trip credit for the existing uses on site also was applied since traffic generated by the existing uses would be eliminated once the proposed project is built. Driveway counts at the existing driveways serving the project site were conducted on September 26 and 28, 2019, to quantify the amount of traffic currently being generated by the uses on site. The driveway counts show that the existing uses on-site, not including the Fire Station and the existing tire store, currently generate approximately 51 AM peak-hour trips, 112 PM peak-hour trips, and 133 Saturday peak-hour trips. As with the proposed commercial uses, a pass-by trip reduction of 34% and 26% during the PM and Saturday peak hours, respectively, was applied to the existing retail uses on site. The existing site-generated traffic was subtracted from the project traffic estimates to obtain the net increase in traffic associated with the implementation of the proposed project.

Net Project Trips

On the basis of the ITE trip generation rates, and after applying the above trip reductions, it is estimated that the proposed project would generate 4,686 net new daily vehicle trips, with 337 trips (172 inbound and 165 outbound) occurring during the AM peak-hour, 303 trips (154 inbound and 149 outbound) occurring during the PM peak-hour, and 423 trips (214 inbound and 209 outbound) occurring during the Saturday peak-hour. The project trip generation estimates are presented in Table 3.

Trip Distribution and Assignment

The trip distribution pattern for the project was estimated based on existing travel patterns in the study area and on the locations of complementary land uses. The project trip distribution pattern is shown graphically on Figure 7.

The peak-hour trips generated by the proposed development were assigned to the roadway system in accordance with the trip distribution pattern discussed above. Pass-by traffic was assigned detouring to the project site then continuing on their original path of travel onto their final destination. The project trip assignment is presented graphically on Figure 8.

Roadway Capacity Analysis Methodologies

This section presents the methods used to evaluate traffic operations at the study intersections and freeway facilities. It includes descriptions of the analysis methodologies, the applicable level of service standards, the criteria defining deficiencies at the study facilities, and other data required for the analysis.

The roadway capacity (level of service) analysis is intended to quantify the operations of the roadway network and to identify potential operational deficiencies caused by the proposed project. However, identified deficiencies on study facilities within this chapter are not considered a CEQA impact metric.

Analysis Methodologies, Standards, and Deficiency Thresholds

Intersection Level of Service Analysis

All study intersections were evaluated based on City of Gilroy methodology and level of service standards. Study freeway segments and freeway ramps were evaluated based on CMP and Caltrans methodology and level of service standards.

Signalized Intersections

The City of Gilroy uses the Santa Clara County CMP level of service analysis procedure, TRAFFIX, for evaluation of signalized intersections, based on the *2000 Highway Capacity Manual* (2000 HCM) method. TRAFFIX evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. *Control delay* is the amount of delay that is attributed to the particular traffic control device at the intersection, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The correlation between average delay and level of service is shown in Table 4.

Table 3
Project Trip Generation Estimates

Land Use	ITE Land Use Code	Size	Daily Rate	Daily Trip	AM Peak-Hour Rate	AM Split In	AM Split Out	AM Trip In	AM Trip Out	AM Trip Total	PM Peak-Hour Rate	PM Split In	PM Split Out	PM Trip In	PM Trip Out	PM Trip Total	SAT Peak-Hour Rate	SAT Split In	SAT Split Out	SAT Trip In	SAT Trip Out	SAT Trip Total
Proposed Land Uses																						
Hotel	**310**	**120** Rooms	7.73	928	0.46	59%	41%	32	23	55	0.53	51%	49%	33	31	64	0.52	56%	44%	35	28	63
Hotel and Commercial Internal Reduction [1]			*10%*	*-93*	*10%*			*-3*	*-2*	*-5*	*10%*			*-3*	*-3*	*-6*	*10%*			*-4*	*-3*	*-7*
Gasoline/Service Station with Convenience Market	**945**	**12** Vehicle Fueling Positions	205.36	2,464	12.47	51%	49%	77	73	150	13.99	51%	49%	86	82	168	19.28	50%	50%	116	115	231
Passby Reduction [2]			*56%*	*-1,380*	*62%*			*-48*	*-45*	*-93*	*56%*			*-48*	*-46*	*-94*	*56%*			*-65*	*-64*	*-129*
Fast-Food Restaurant with Drive-Through Window	**934**	**8,681** Square Feet	470.95	4,088	40.19	51%	49%	178	171	349	32.67	52%	48%	148	136	284	54.86	51%	49%	243	233	476
Passby Reduction [2]			*50%*	*-2,044*	*49%*			*-87*	*-84*	*-171*	*50%*			*-74*	*-68*	*-142*	*50%*			*-122*	*-117*	*-239*
Coffee/Donut Shop with Drive-Through Window	**937**	**2,365** Square Feet	820.38	1,940	88.99	51%	49%	107	103	210	43.38	50%	50%	52	51	103	87.70	50%	50%	104	103	207
Passby Reduction [3]			*50%*	*-970*	*49%*			*-52*	*-50*	*-102*	*50%*			*-26*	*-26*	*-52*	*50%*			*-52*	*-52*	*-104*
Automated Car Wash [4]	**948**	**1** Car Wash Tunnel	780.00	780	N/A	N/A	N/A	0	0	0	77.50	50%	50%	39	39	78	41.00	46%	54%	19	22	41
Passby Reduction [5]			*25%*	*-195*				*0*	*0*	*0*	*25%*			*-10*	*-10*	*-20*	*25%*			*-5*	*-5*	*-10*
Hotel and Retail Internal Reduction [1]				*-93*				*-2*	*-3*	*-5*				*-3*	*-3*	*-6*				*-3*	*-4*	*-7*
Gross Project Trips Before Reductions				10,200				394	370	764				358	339	697				517	501	1,018
Total Passby Trip Reduction				-4,589				-187	-179	-366				-158	-150	-308				-244	-238	-482
Total Internal Reduction				-186				-5	-5	-10				-6	-6	-12				-7	-7	-14
Existing Land Use Credit																						
Existing Retail [6]				-1,120				-30	-21	-51				-60	-52	-112				-70	-63	-133
Passby Reduction [2]			*34%*	*381*				*0*	*0*	*0*	*34%*			*20*	*18*	*38*	*26%*			*18*	*16*	*34*
Total Net Project Trips				**4,686**				**172**	**165**	**337**				**154**	**149**	**303**				**214**	**209**	**423**
Total Project Trips at Site Driveways				**10,014**				**390**	**366**	**754**				**352**	**333**	**685**				**510**	**494**	**1,004**

Source: Institute of Transportation Engineers (ITE) *Trip Generation* Manual, 10th Edition 2017.

[1] A 10 percent (%) internal trip reduction was applied for the interaction between the hotel and the commercial land uses, as recommended in the VTA *Transportation Impact Analysis Guidelines*. Ten percent of the smaller trip-generator is applied to both land uses.

[2] AM and PM peak-hour passerby reduction rates obtained from the *ITE Trip Generation Handbook*, Third Edition. Daily and Saturday peak-hour pass-by reductions for the land uses listed above are assumed to be the same as their PM peak-hour pass-by rate.

[3] The ITE *Trip Generation Handbook* does not provide pass-by data for coffee/donut shop with drive-through window land use. Therefore, the passerby trip reduction for fast-food restaurant with drive-through window was applied to the coffee/donut shop with drive-through window land use.

[4] The ITE *Trip Generation* manual does not include trip generation information for the automated car wash land use during the AM peak-hour . Presumably, the traffic generated by the proposed car wash during the AM peak-hour would be negligible.

[5] The *ITE Trip Generation Handbook* does not provide pass-by data for car wash land use. Therefore, it was conservatively assumed in this analysis that the passer by trip reduction associated with the car wash would be 25% during the PM and Saturday peak hours.

[6] Based on existing site driveway counts conducted September 26 and September 28, 2019.

Figure 7
Project Trip Distribution

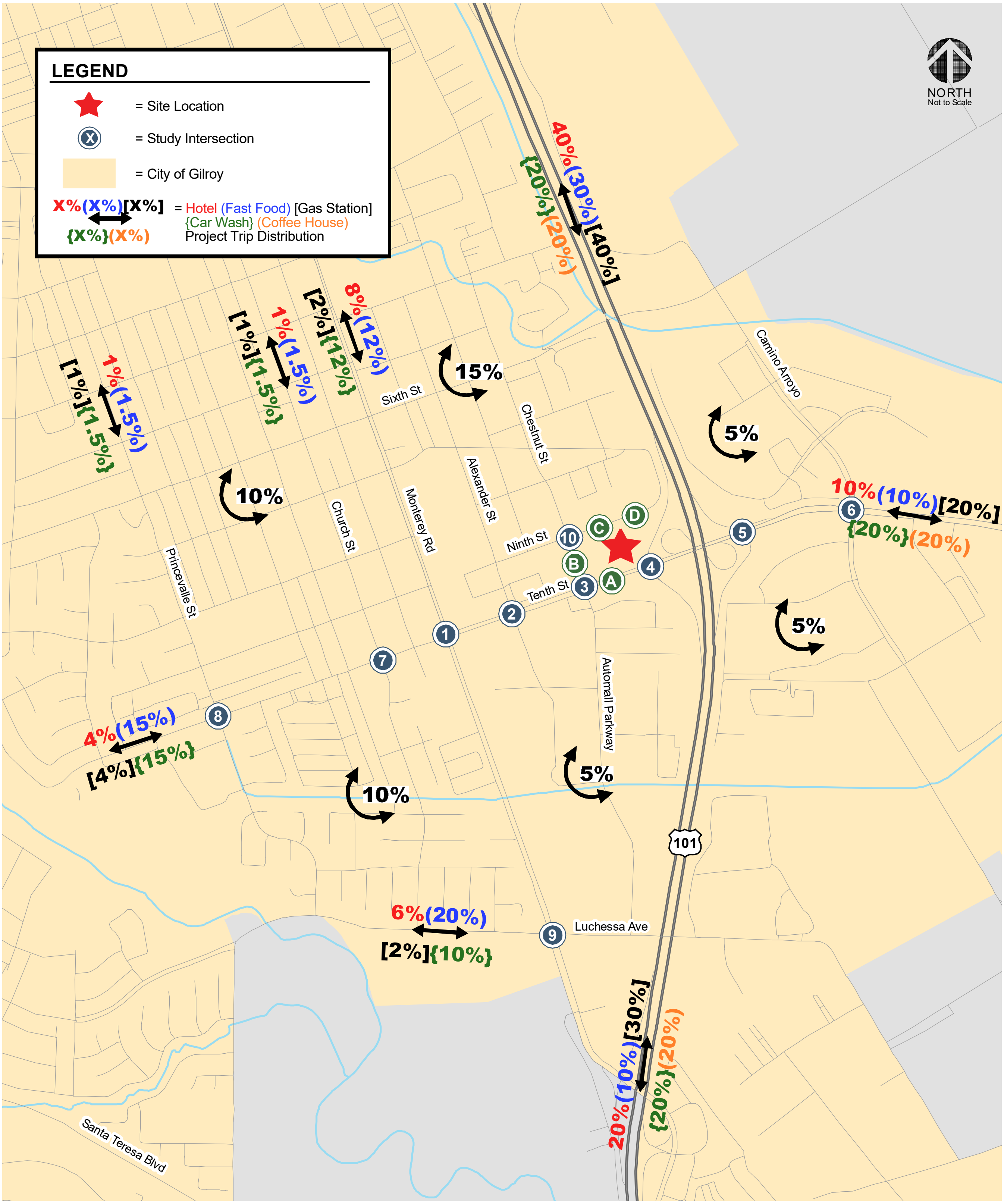


Figure 8
Project Trip Assignment

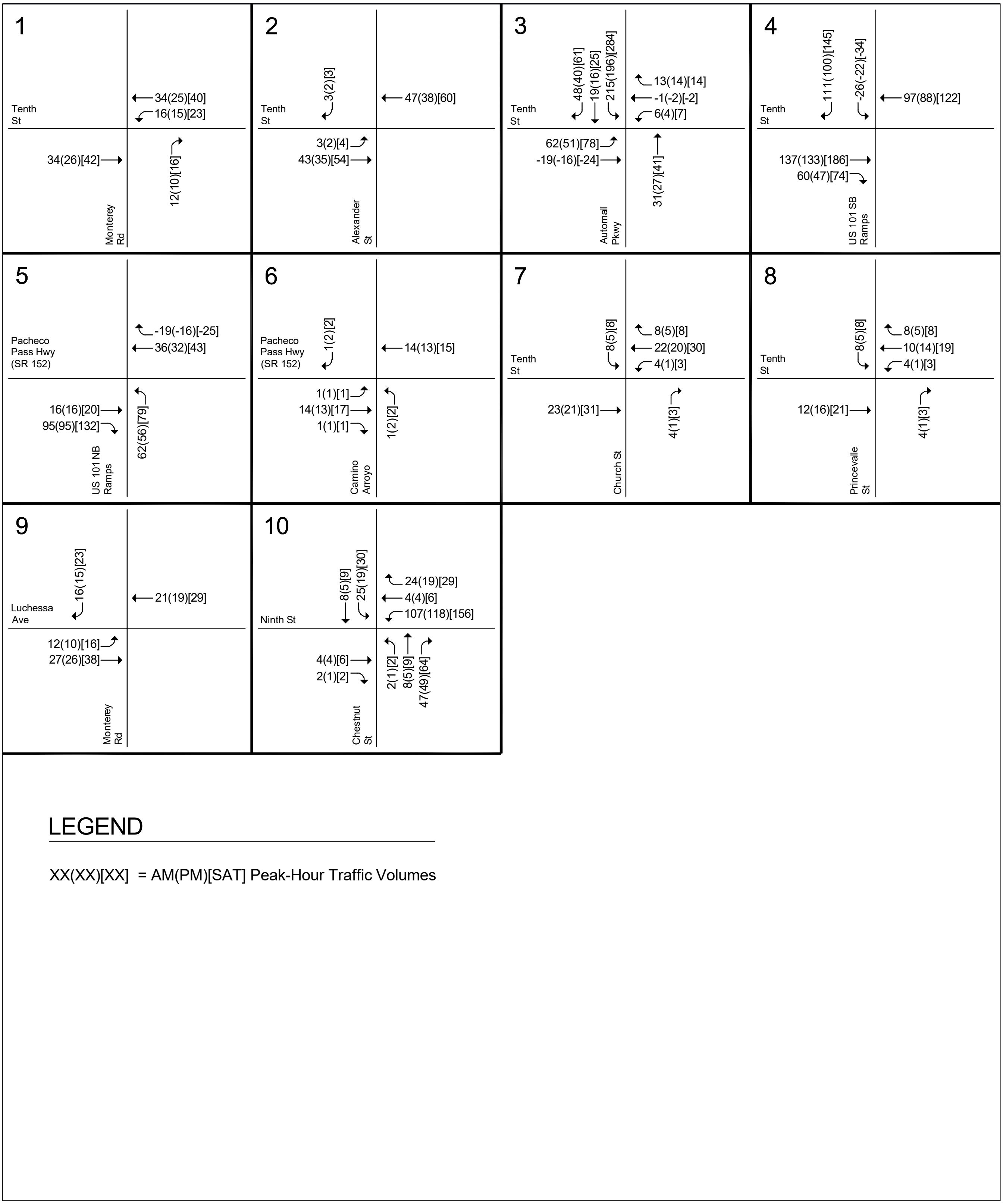


Table 4
Signalized Intersection Level of Service Definition Based on Delay

Level of Service	Description	Average Control Delay per Vehicle (sec.)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	up to 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	Greater than 80.0

Sources: Transportation Research Board, *2000 Highway Capacity Manual* (Santa Clara County and City of Gilroy adopted level of service methodology). *Traffic Level of Service Analysis Guidelines*, Santa Clara County Transportation Authority Congestion Management Program, June 2003.

The City of Gilroy level of service standard for most signalized intersections located west of US 101 is LOS C or better. For signalized intersections located east of US 101 and those in the commercial area designated in the current City of Gilroy General Plan (LOS D Area), the City standard is LOS D or better. The level of service D area includes all areas east of US 101, the Tenth Street corridor from Monterey Street to US 101, the Luchessa corridor east of Monterey Street, and the Monterey Street corridor from Luchessa Avenue to the Monterey Street/US 101 interchange. The current City of Gilroy LOS D Area is depicted graphically on Figure 6.

Seven of the signalized study intersections are located within the LOS D area, and therefore, were evaluated based on LOS D standard, while the remaining study intersections were evaluated based on LOS C standard.

City of Gilroy Definition of Operational Deficiencies at Signalized Intersections

Based on City of Gilroy intersection level of service standards, an operational deficiency at a signalized intersection would occur if any of the following criteria are satisfied:

LOS C Area

1. The level of service at the intersection degrades from an acceptable LOS C or better under background conditions to an unacceptable LOS D or worse under background plus project conditions, or
2. The intersection is already operating at an unacceptable LOS D and the addition of project traffic causes the average delay to increase by two (2) seconds or more, or

3. The intersection is already operating at an unacceptable LOS E or F and the addition of project traffic causes the average delay to increase by one (1) second or more.

<u>LOS D Area</u>

1. The level of service at the intersection degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under background plus project conditions, <u>or</u>
2. If the intersection is already operating at an unacceptable LOS E or F and the addition of project traffic causes the average delay to increase by one (1) second or more.

Operational deficiencies may be addressed by implementing measures that would restore intersection level of service to background conditions or better.

Unsignalized Intersections

For unsignalized intersections in the City of Gilroy, an assessment of traffic operations at the intersection is based on two methodologies: (1) peak-hour levels of service are calculated for the intersection and (2) an assessment is made of the need for signalization of the intersection based on traffic volume levels.

The methodology used to determine the level of service for unsignalized intersections is TRAFFIX and the Santa Clara County CMP adopted *2000 Highway Capacity Manual* methodology. This method is applicable for both two-way and all-way stop-controlled intersections.

For the purpose of reporting level of service for stop-controlled intersections, two levels of service are used. For all-way stop-controlled intersections, “overall intersection average” delay and corresponding level of service is used, which is a measure of the average delay incurred by all motorists at the intersection. For one- and two-way stop-controlled intersections, the delay and corresponding level of service for the “highest delay approach”, which is a measure of the delay incurred by motorists only on the stop-controlled approach which is most impacted by traffic conditions at the intersection, is used. The correlation between average control delay and level of service for unsignalized intersections is shown in Table 5.

The level of service analysis at unsignalized intersections is supplemented with an assessment of the need for signalization of the intersection. This assessment is made on the basis of signal warrant criteria adopted by Caltrans. For this study, the need for signalization is assessed on the basis of the operating conditions at the intersection (i.e., level of service) and on the peak-hour traffic signal warrant, warrant #3, described in the *California Manual on Uniform Traffic Control Devices for Streets and Highways (CA MUTCD)*, Part 4, Highway Traffic Signals, 2014. This method provides an indication of whether traffic conditions and peak-hour traffic levels are, or would be, sufficient to justify installation of a traffic signal.

The City of Gilroy level of service standard for unsignalized intersections is based on the intersection control type as follows:

- All-way stop-controlled intersections must operate with an overall intersection average delay of LOS C or better for those intersections located within the LOS C area (as defined previously) and LOS D or better for those intersections located within the LOS D area <u>and/or</u> the peak-hour traffic volume level at the intersection must fall below the threshold that would warrant installation of a traffic signal.

Table 5
Unsignalized Intersection Level of Service Definition Based on Control Delay

Level of Service	Description	Average Control Delay per Vehicle (sec.)
A	Operations with very low delays occurring with favorable progression.	up to 10.0
B	Operations with low delays occurring with good progression.	10.1 to 15.0
C	Operations with average delays resulting from fair progression.	15.1 to 25.0
D	Operation with longer delays due to a combination of unfavorable progression of high V/C ratios.	25.1 to 35.0
E	Operation with high delay values indicating poor progression and high V/C ratios. This is considered to be the limited of acceptable delay.	35.1 to 50.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation and poor progression.	Greater than 50.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Santa Clara County and City of Gilroy adopted level of service methodology).

- One-way/two-way stop controlled intersections must operate with average delays corresponding to LOS D or better for those intersections located within the LOS C area or LOS E or better for intersections located within the LOS D area on their stop controlled approach with the highest delay <u>and/or</u> the peak-hour traffic volume level at the intersection must fall below the threshold that would warrant installation of a traffic signal.

The unsignalized study intersection (Chestnut Street and Ninth Street) is a two-way stop-controlled intersection located within the LOS C area. Therefore, the unsignalized study intersection has a level of service standard of LOS D for the stop-controlled approach with the highest delay.

<u>City of Gilroy Definition of Operational Deficiencies at Unsignalized Intersections</u>

Based on City of Gilroy intersection level of service standards, an operational deficiency at an unsignalized intersection would occur if any of the following criteria are satisfied:

All-Way Stop-Controlled Intersections:

<u>LOS C Area</u>

1. The overall intersection level of service degrades from an acceptable LOS C or better under background conditions to an unacceptable LOS D or worse under background plus project conditions <u>and</u> the traffic volumes at the intersection satisfy the peak-hour volume traffic signal warrant adopted by Caltrans, <u>or</u>
2. The overall intersection level of service is already operating at an unacceptable LOS D or E/F and the addition of project traffic causes the average delay to increase by two (2) or one

seconds, respectively, or more and the traffic volumes at the intersection satisfy the peak-hour volume traffic signal warrant adopted by Caltrans.

LOS D Area

1. The overall intersection level of service degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under background plus project conditions and the traffic volumes at the intersection satisfy the peak-hour volume traffic signal warrant adopted by Caltrans, or
2. The overall intersection level of service is already operating at an unacceptable LOS E/F and the addition of project traffic causes the average delay to increase by one second or more and the traffic volumes at the intersection satisfy the peak-hour volume traffic signal warrant adopted by Caltrans.

One- and Two-Way Stop-Controlled Intersections:

LOS C Area

1. The worst-approach intersection delay degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under background plus project conditions and the traffic volumes at the intersection satisfy the peak-hour volume traffic signal warrant adopted by Caltrans, or
2. The worst-approach intersection delay is already operating at an unacceptable LOS E/F and the addition of project traffic causes the average delay to increase by one second or more and the traffic volumes at the intersection satisfy the peak-hour volume traffic signal warrant adopted by Caltrans.

LOS D Area

1. The worst-approach intersection delay degrades from an acceptable LOS E or better under background conditions to an unacceptable LOS F under background plus project conditions and the traffic volumes at the intersection satisfy the peak-hour volume traffic signal warrant adopted by Caltrans, or
2. The worst-approach intersection delay is already operating at an unacceptable LOS F and the addition of project traffic causes the average delay to increase by one second or more and the traffic volumes at the intersection satisfy the peak-hour volume traffic signal warrant adopted by Caltrans.

Operational deficiencies at unsignalized intersections may be addressed by implementing measures that would restore intersection level of service to acceptable conditions or by signalizing the intersection.

Santa Clara County Freeway CMP Guidelines

In Santa Clara County, freeway segments are evaluated using CMP procedures and methodologies. As prescribed in the CMP technical guidelines, the level of service for freeway segments is estimated based on vehicle density. Density is calculated by the following formula:

$$D = V / (N*S)$$

where:

D= density, in vehicles per mile per lane (vpmpl)
V= peak-hour volume, in vehicles per hour (vph)
N= number of travel lanes
S= average travel speed, in miles per hour (mph)

The vehicle density on a segment is correlated to level of service as shown in Table 6. The CMP requires that mixed-flow lanes and auxiliary lanes be analyzed separately from HOV (carpool) lanes. The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for segments six lanes or wider in both directions and a capacity of 2,200 vphpl be used for segments four lanes wide in both directions. The CMP defines an acceptable level of service for freeway segments as LOS E or better.

Table 6
Freeway Levels of Service Based on Density

Level of Service	Description	Density (vehicles/mile/lane)
A	Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	0-11
B	Speeds at the free-flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.	>11-18
C	Speeds at or near the free-flow speed of the freeway prevail. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more vigilance on the part of the driver.	>18-26
D	Speeds begin to decline slightly with increased flows at this level. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels.	>26-46
E	At this level, the freeway operates at or near capacity. Operations in this level are volatile, because there are virtually no usable gaps in the traffic stream, leaving little room to maneuver within the traffic stream.	>46-58
F	Vehicular flow breakdowns occur. Large queues form behind breakdown points.	>58

Sources: Transportation Research Board, *2000 Highway Capacity Manual* (Santa Clara County and City of Gilroy adopted level of service methodology). *Traffic Level of Service Analysis Guidelines*, Santa Clara County Transportation Authority Congestion Management Program, June 2003.

CMP Definition of Adverse Operations Effects on Freeway Segments

An adverse effect on traffic conditions on a freeway segment would occur if for either peak hour:

1. The level of service on the freeway segment degrades from an acceptable LOS E or better under no project conditions to an unacceptable LOS F under with project conditions, or

2. The level of service on the freeway segment is LOS F and the amount of traffic added to that segment by the proposed project constitutes one percent or more of the capacity on that segment.

An adverse effect on freeway segments by CMP standards may be addressed by implementing measures that would restore freeway conditions to pre-project conditions or better.

Freeway Interchange Ramp Analysis

The freeway ramp analysis was performed at one US 101 interchange (Tenth Street/SR 152) that provides access to the project site. The analysis was performed to evaluate projected interchange operations with implementation of the proposed project and supplements the intersection level of service analysis at the freeway ramp intersections. The study freeway ramps are under the jurisdiction of Caltrans.

The analysis is based on calculated ramp capacity (volume-to-capacity (V/C) ratios) at the study freeway ramps. Evaluation of the ramps' operating levels is based on Caltrans level of service standards (LOS C or better). The correlation between V/C ratio and level of service for freeway ramps is shown in Table 7.

Table 7
Freeway Ramp Levels of Service Based on Volume-to-Capacity Ratio

Level of Service	V/C Ratio
A	Less than 0.600
B	0.600-0.699
C	0.700-0.799
D	0.800-0.899
E	0.900-0.999
F	1.000 and Greater

Source: Transportation Research Board, *2000 Highway Capacity Manual*. (Washington, D.C., 2000)

Caltrans Definition of Adverse Operations Effects on Freeway Ramps

The Caltrans level of service standard for freeway ramps is LOS C or better. An adverse effect on traffic conditions on a freeway ramp would occur if for either peak hour:

1. The level of service at the study facility degrades from an acceptable LOS C or better under background conditions to an unacceptable LOS D or worse under background plus project conditions, or

2. The level of service on the freeway ramp is deficient under background conditions and the project adds traffic to the ramp.

An adverse effect on freeway ramps by Caltrans standards may be addressed by implementing measures that would restore conditions to background conditions or better.

Intersection Operations Analysis

The operations analysis is based on vehicle queuing for high-demand movements at intersections. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of "n" vehicles in the queue for a vehicle movement using the following formula:

$$P\,(x=n) = \frac{\lambda^{n}\, e^{-(\lambda)}}{n!}$$

Where:

P (x=n) = probability of "n" vehicles in queue per lane
n = number of vehicles in the queue per lane
$\lambda =$ Average number of vehicles in the queue per lane (vehicles per hour per lane/signal cycles per hour)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle (20 feet vehicle length plus 5-foot headway space); and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement. This analysis thus provides a basis for identifying locations where potential problems may arise in the future and for estimating future storage requirements at intersections.

City of Gilroy Definition of Queue Deficiencies

Based on City of Gilroy guidelines, a queue deficiency at an intersection would occur if:

1. The 95th percentile vehicle queue in a critical turn movement at a study intersection is projected to be less than the available or planned storage length for that movement under background conditions and the addition of projected traffic to that turn movement causes the projected 95th percentile vehicle queue to exceed the available or planned storage length, or
2. The 95th percentile vehicle queue in a critical turn movement at a study intersection is projected to exceed the available or planned storage length for that movement under background conditions and the addition of projected traffic to that turn movement causes the projected 95th percentile vehicle queue to grow by at least one vehicle.

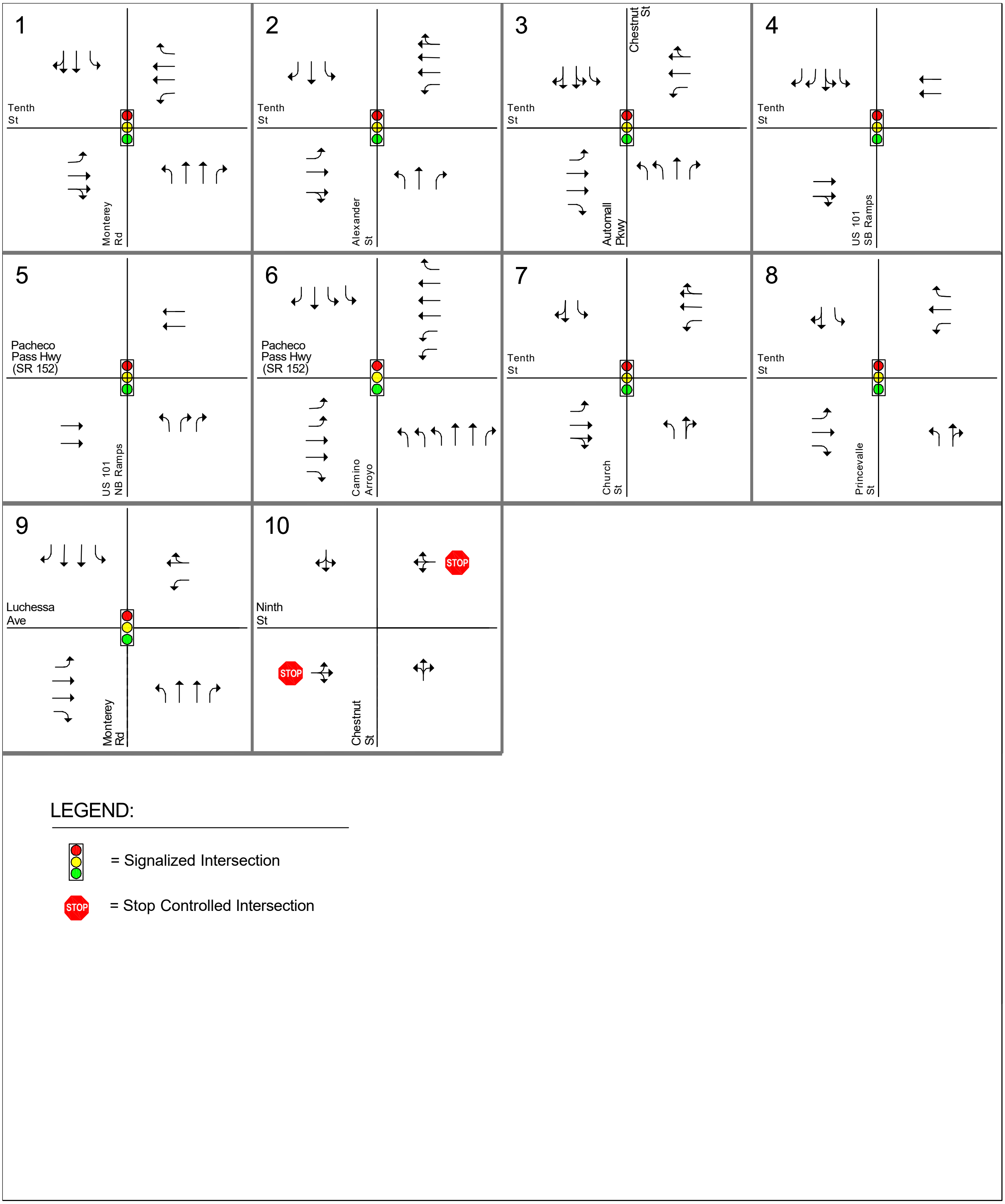
Queue deficiencies may be addressed by providing the additional queue storage capacity required to serve the projected queue length.

Lane Configurations

The existing lane configurations and traffic-control devices at the study intersections were determined by observations in the field and are presented graphically on Figure 9.

It is assumed in this analysis that the transportation network under background and cumulative conditions (without and with the project) would be the same as under existing conditions.

Figure 9
Existing Intersection Lane Configurations and Traffic Control Devices



Traffic Volumes

Existing Conditions

Existing weekday AM, weekday PM, and Saturday peak-hour traffic volumes were obtained from recently conducted traffic studies in the area and new peak-hour turning movement counts. All intersection turn-movement counts were collected in 2019. The existing peak-hour intersection volumes are shown on Figure 10.

Future Conditions

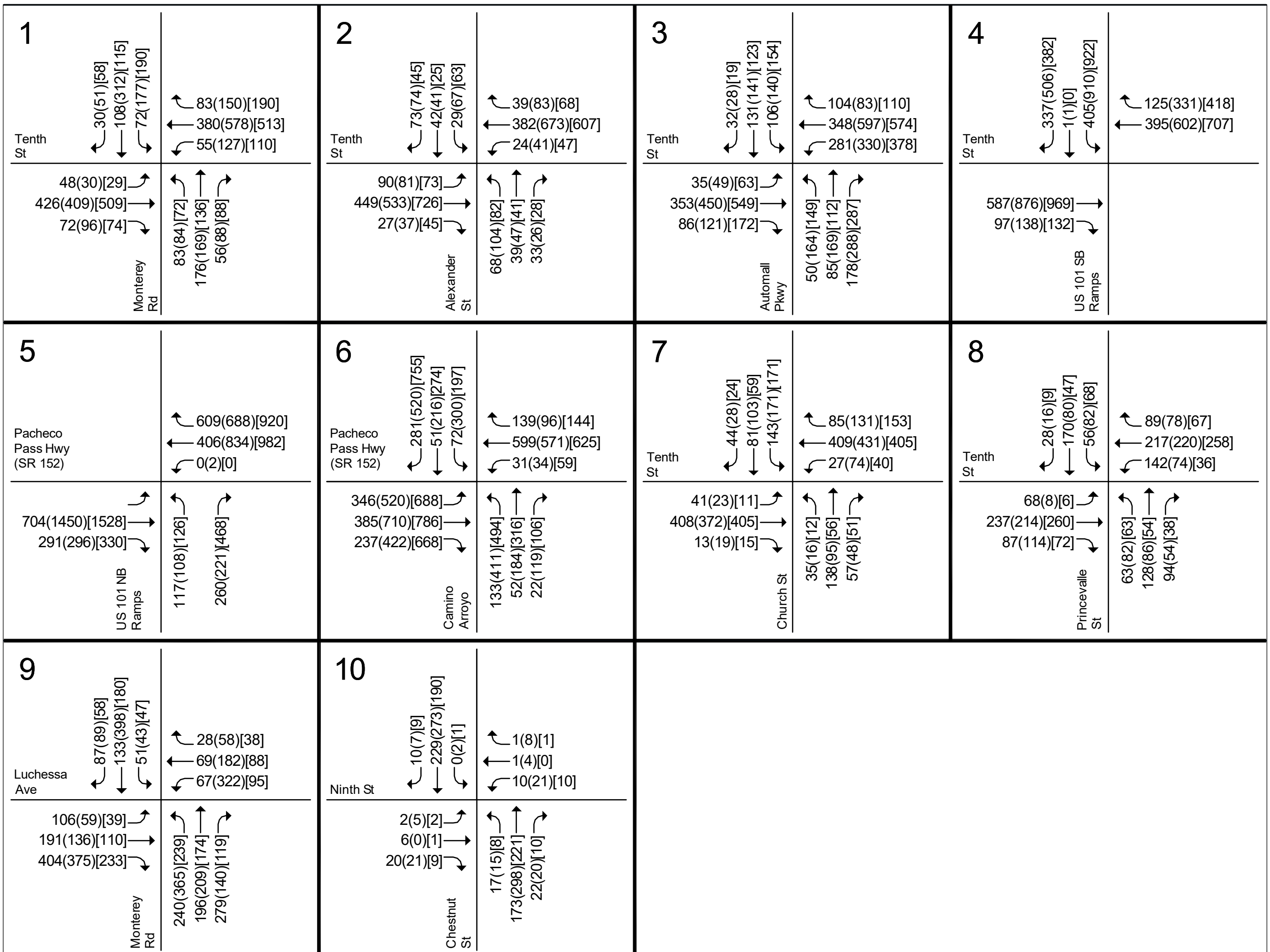
Background peak-hour traffic volumes were estimated by adding to existing volumes the estimated traffic from approved but not yet constructed developments. The traffic added to the study intersections from approved developments was estimated by distributing and assigning trips generated by these developments to the roadway network using the same procedure of trip generation, distribution, and assignment described previously. The traffic from approved developments includes both new trip productions and attractions on the local transportation system. The traffic associated with residential uses would be considered new productions, which would be going to commercial and employment areas. The traffic associated with non-residential land uses would be considered new trip attractions. In some cases, the new trips added by approved developments could be double counted since some trips generated by the new residential developments would be attracted to the new commercial land uses. Therefore, to account for this double counting and to be consistent with the procedures used for all other traffic studies in the City of Gilroy, trips from new residential projects were not assigned to the areas where new commercial development is planned to occur. Background traffic volumes are shown in Figure 11.

The project trips, as described in the previous section, were added to background traffic volumes to obtain background plus project traffic volumes, or project conditions volumes. The background plus project traffic volumes are shown graphically on Figure 12.

Baseline cumulative peak-hour traffic volumes (without project traffic) were calculated by adding to background volumes the estimated traffic from proposed but not yet approved (pending) development projects. The added traffic from proposed developments was estimated using the same process of trip generation, distribution, and assignment utilized to estimate approved project traffic and project trips. The baseline cumulative conditions traffic volumes are presented graphically on Figure 13. Cumulative plus project traffic volumes were calculated by adding project-generated trips to baseline cumulative volumes and are shown graphically on Figure 14.

Information of both approved and pending development projects was obtained from the City of Gilroy in September 2019. The existing traffic count data are included in Appendix A. Peak-hour intersection turning movement volumes for all intersections and study scenarios are tabulated in Appendix B.

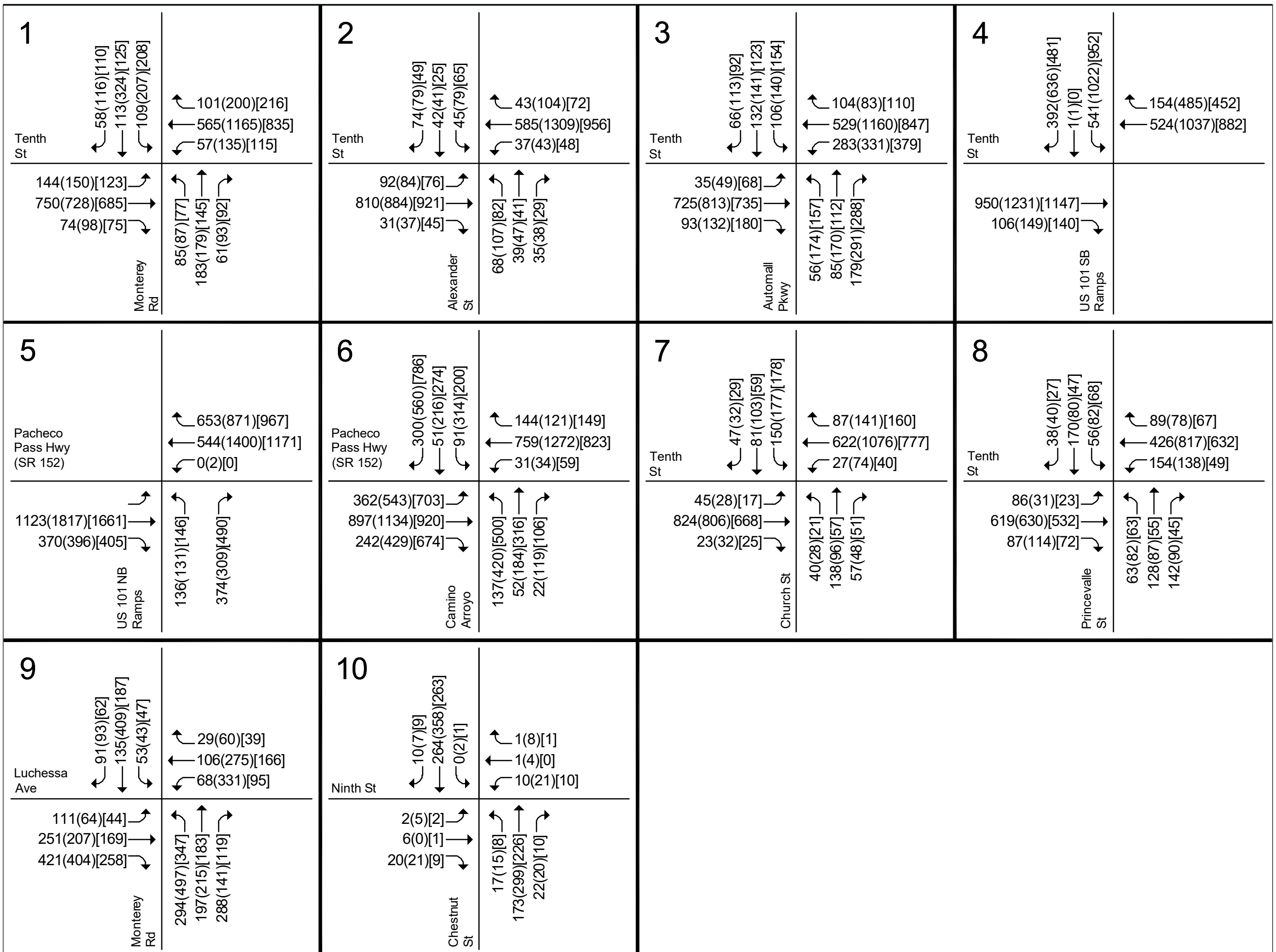
Figure 10
Existing Conditions Traffic Volumes



LEGEND

XX(XX)[XX] = AM(PM)[SAT] Peak-Hour Traffic Volumes

Figure 11
Background Conditions Traffic Volumes



LEGEND

XX(XX)[XX] = AM(PM)[SAT] Peak-Hour Traffic Volumes

Figure 12
Background Plus Project Conditions Traffic Volumes

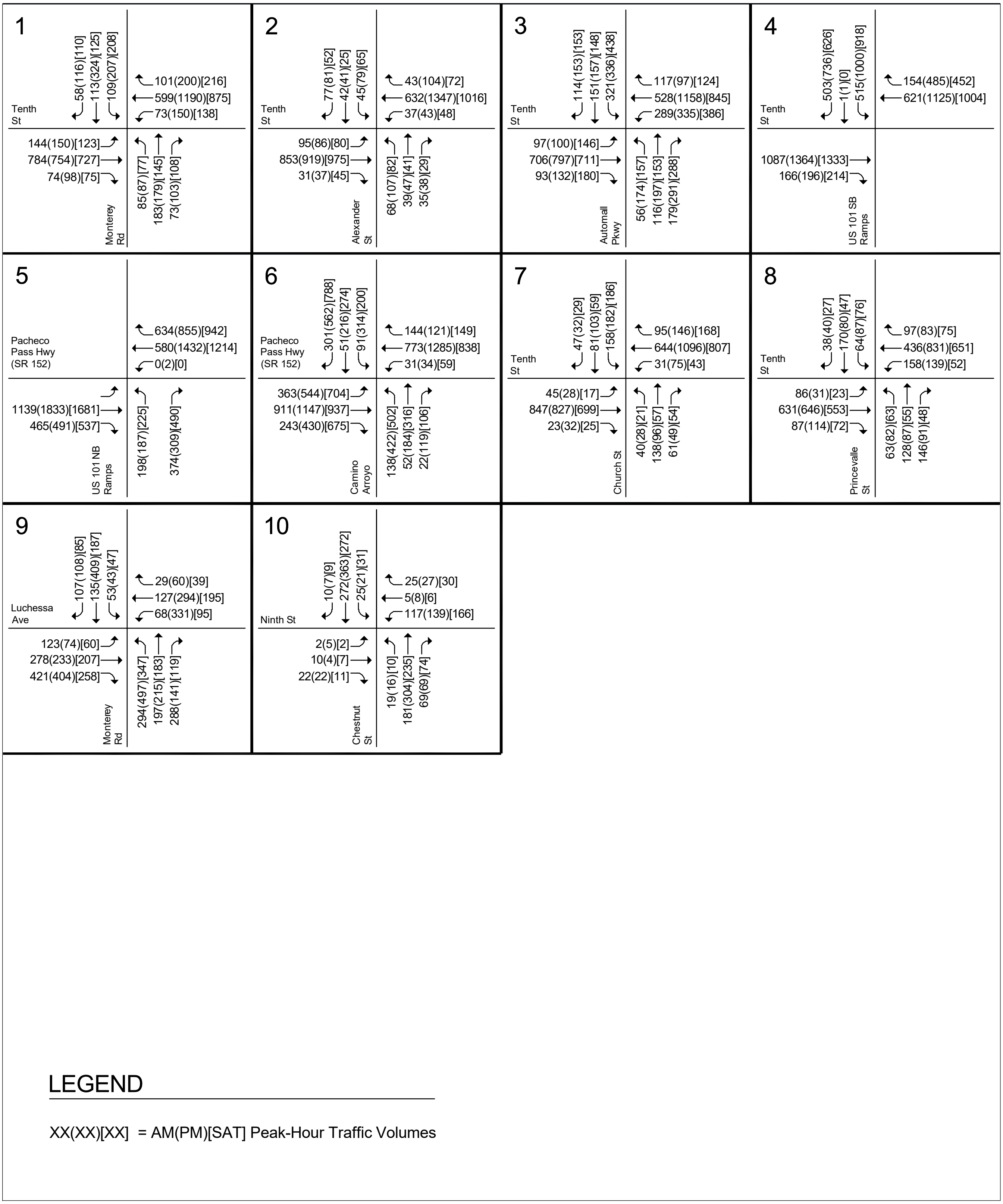
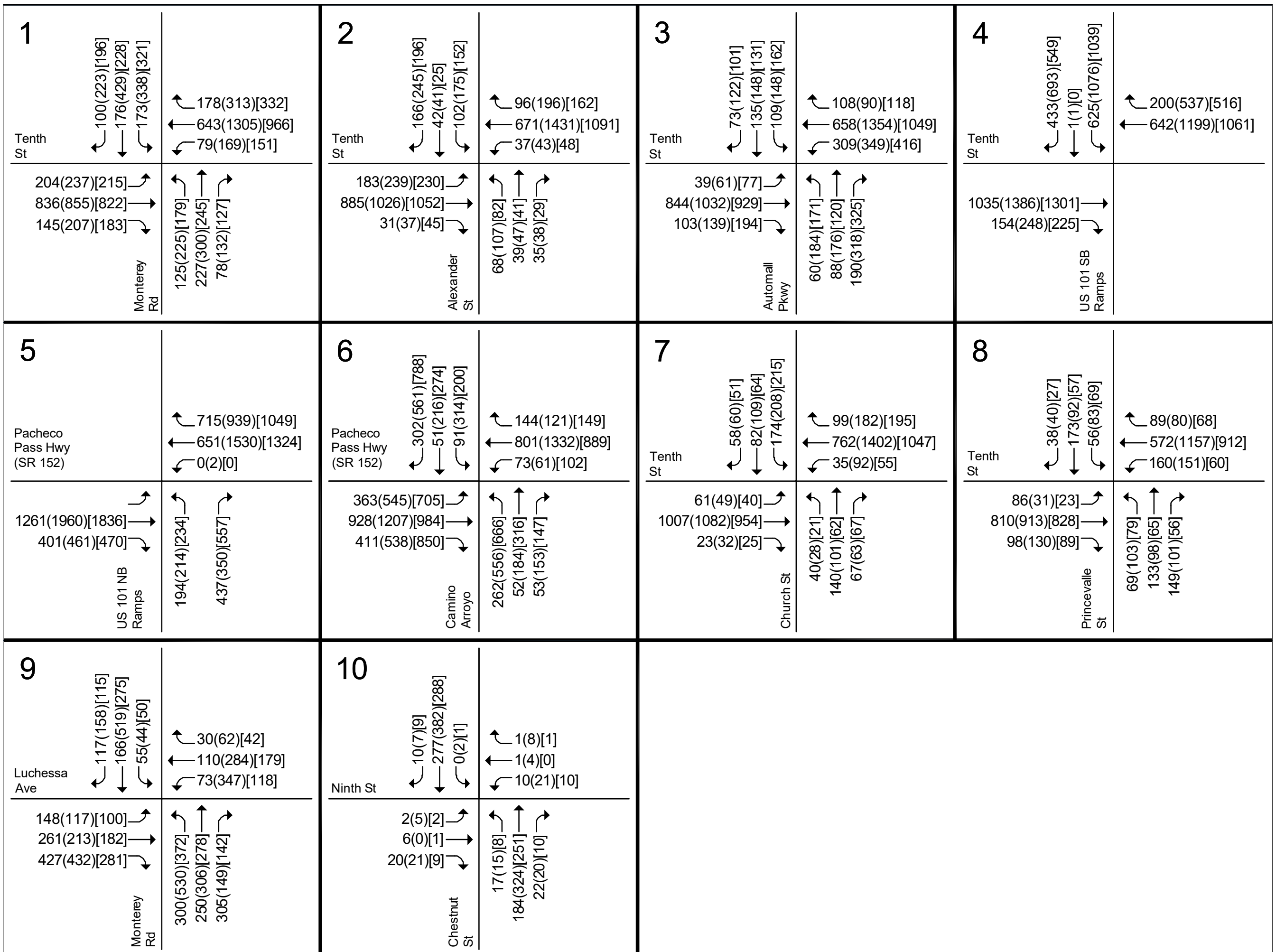


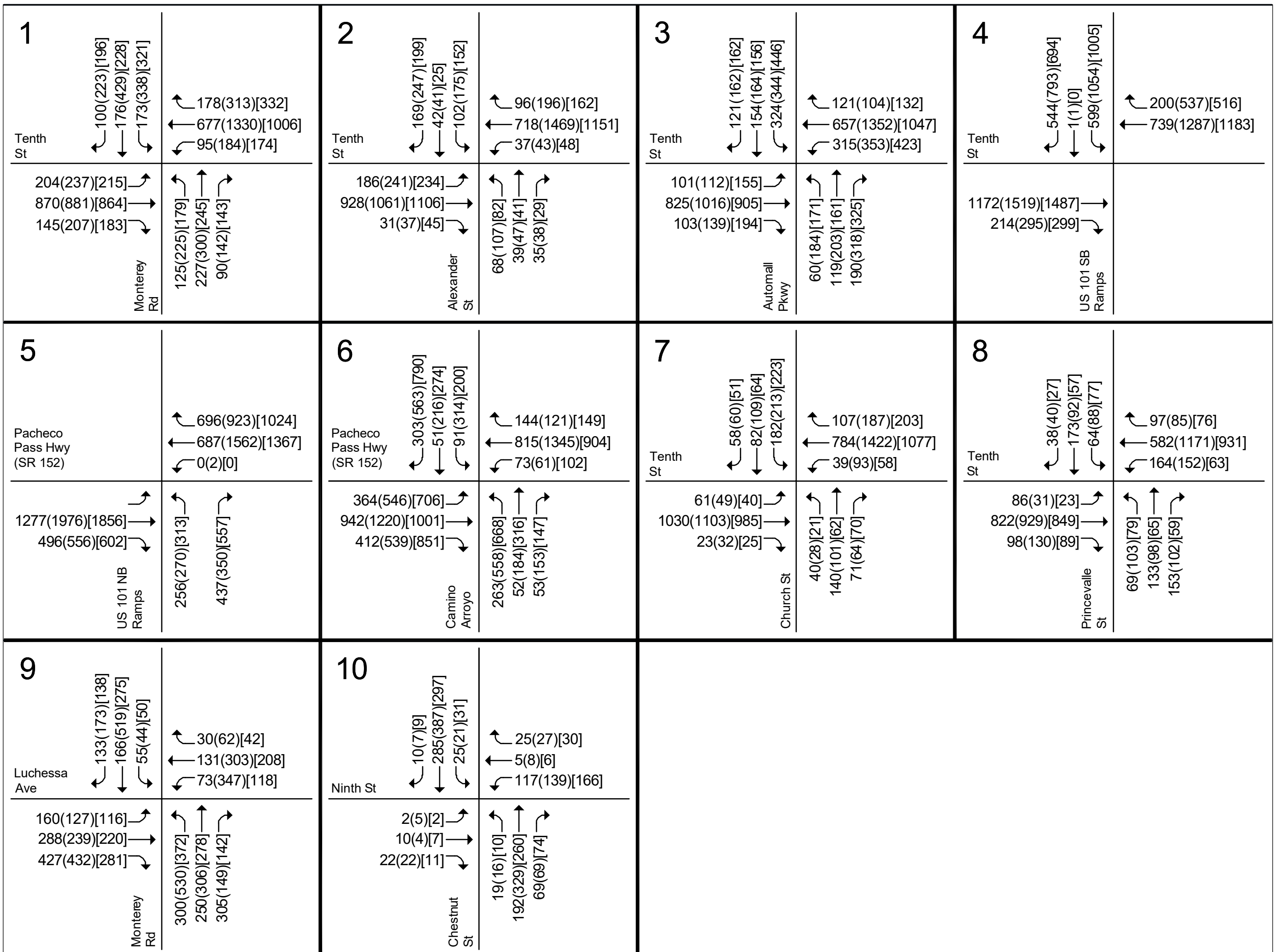
Figure 13
Cumulative Conditions Traffic Volumes



LEGEND

XX(XX)[XX] = AM(PM)[SAT] Peak-Hour Traffic Volumes

Figure 14
Cumulative Plus Project Conditions Traffic Volumes



LEGEND

XX(XX)[XX] = AM(PM)[SAT] Peak-Hour Traffic Volumes

Intersection Level of Service Analysis Results

The results of the intersection level of service analysis are described below and summarized in Table 8. The level of service calculation sheets are included in Appendix C. The peak-hour signal warrant sheets are contained in Appendix D.

Existing and Background Intersection Level of Service Analysis

The results of the intersection level of service analysis under existing conditions indicate that the following intersection currently operates deficiently during the AM peak-hour:

8. Princevalle Street and Tenth Street (LOS D – AM peak-hour)

Under background conditions, the above intersection would continue to operate deficiently (LOS D) during the AM peak-hour.

Background Plus Project Intersection Level of Service Analysis

The results of the intersection level of service analysis show that the following intersection would continue to operate deficiently under background plus project conditions:

8. Princevalle Street and Tenth Street (LOS D – AM peak-hour)

However, the addition of project traffic at the above intersections is not sufficient to cause the intersection average delay to increase by more than 2.0 seconds. Therefore, based on City of Gilroy definition of operational deficiencies at signalized intersections, the project would not create a level of service deficiency at the above intersection.

The remaining study intersections would continue to operate at acceptable levels of service during all three peak hours analyzed under background plus project conditions.

Cumulative Plus Project Intersection Level of Service Analysis

The results of the intersection level of service analysis show that the following intersections are projected to operate deficiently under cumulative plus project conditions:

6. Camino Arroyo and Pacheco Pass Highway (SR 152) (LOS E – AM peak-hour)
8. Princevalle Street and Tenth Street (LOS D – AM & Sat, LOS F – PM;
Project deficiency: PM and Saturday peak hours)

The level of service calculations show that the addition of project traffic at the intersection of *Princevalle Street and Tenth Street* (intersection #8) would cause the intersection average delay to increase by more than 1.0 and 2.0 seconds during the PM and Saturday peak hours, respectively. Therefore, the project would contribute to a cumulative operational deficiency at this intersection, based on City of Gilroy definition of operational deficiencies at signalized intersections.

The remaining study intersections would continue to operate at acceptable levels of service during all three peak hours analyzed under cumulative plus project conditions.

Table 8
Intersection Level of Service Results

Study Int. Number	Intersection	Intersection Control	LOS Standard	TIF Int.[1]	Peak Hour	Count Date	Existing			Background			Background Plus Project				Cumulative No Project			Cumulative Plus Project			
							Avg. Delay	LOS	Warrant Met?[2]	Avg. Delay	LOS	Warrant Met?[2]	Avg. Delay	LOS	Delay Change[3]	Warrant Met?[2]	Avg. Delay	LOS	Warrant Met?[2]	Avg. Delay	LOS	Delay Change[3]	Warrant Met?[2]
1	Monterey Road and Tenth Street	Signal	D	No	AM	5/7/19	22.7	C	--	21.6	C	--	21.6	C	+0.0	--	24.3	C	–	24.5	C	+0.2	--
					PM	9/5/19	27.4	C	--	27.8	C	--	28.0	C	+0.2	--	40.1	D	–	40.8	D	+0.7	--
					SAT	9/7/19	29.1	C	--	28.4	C	--	28.6	C	+0.2	--	34.8	C	–	35.4	D	+0.6	--
2	Alexander Street and Tenth Street	Signal	D	No	AM	11/5/19	18.7	B	--	17.1	B	--	17.0	B	-0.1	--	19.1	B	–	19.0	B	-0.1	--
					PM	11/5/19	17.8	B	--	17.7	B	--	17.9	B	+0.2	--	24.0	C	–	24.5	C	+0.5	--
					SAT	9/28/19	20.0	C	--	18.0	B	--	17.7	B	-0.3	--	23.8	C	–	23.8	C	+0.0	--
3	Chestnut Street/Automall Parkway and Tenth Street	Signal	D	No	AM	5/7/19	31.3	C	--	29.9	C	--	34.9	C	+5.0	--	29.4	C	–	34.7	C	+5.3	--
					PM	5/7/19	34.3	C	--	33.8	C	--	39.1	D	+5.3	--	34.5	C	–	40.8	D	+6.3	--
					SAT	9/7/19	32.1	C	--	32.1	C	--	39.2	D	+7.1	--	32.7	C	–	40.9	D	+8.2	--
4	US 101 Southbound Ramps and Tenth Street	Signal	D	No	AM	5/7/19	19.4	B	--	20.1	C	--	20.4	C	+0.3	--	20.8	C	–	21.2	C	+0.4	--
					PM	5/7/19	22.9	C	--	25.4	C	--	26.1	C	+0.7	--	27.1	C	–	28.4	C	+1.3	--
					SAT	9/7/19	27.3	C	--	28.2	C	--	28.8	C	+0.6	--	30.1	C	–	31.2	C	+1.1	--
5	US 101 Northbound Ramps and Pacheco Pass Highway (SR 152)	Signal	D	No	AM	5/7/19	8.8	A	--	9.1	A	--	9.5	A	+0.4	--	10.0	A	–	10.4	B	+0.4	--
					PM	5/7/19	7.2	A	--	8.5	A	--	9.4	A	+0.9	--	10.7	B	–	12.4	B	+1.7	--
					SAT	9/7/19	10.7	B	--	11.0	B	--	11.5	B	+0.5	--	13.0	B	–	14.0	B	+1.0	--
6	Camino Arroyo and Pacheco Pass Highway (SR 152)	Signal	D	Yes	AM	5/7/19	21.2	C	--	18.2	B	--	18.2	B	+0.0	--	19.5	B	–	19.5	B	+0.0	--
					PM	5/7/19	29.1	C	--	31.1	C	--	31.2	C	+0.1	--	33.0	C	–	33.1	C	+0.1	--
					SAT	9/28/19	49.8	D	--	52.0	D	--	52.2	D	+0.2	--	**55.5**	**E**	–	**55.8**	**E**	**+0.3**	--
7	Church Street and Tenth Street	Signal	C	No	AM	9/26/19	33.8	C	--	29.4	C	--	29.6	C	+0.2	--	29.4	C	–	29.7	C	+0.3	--
					PM	9/26/19	25.4	C	--	21.8	C	--	22.0	C	+0.2	--	25.0	C	–	25.6	C	+0.6	--
					SAT	9/28/19	25.3	C	--	21.9	C	--	22.0	C	+0.1	--	23.0	C	–	23.4	C	+0.4	--
8	Princevalle Street and Tenth Street	Signal	C	No	AM	9/26/19	**38.2**	**D**	--	**35.9**	**D**	--	**36.4**	**D**	**+0.5**	--	**37.1**	**D**	–	**37.9**	**D**	**+0.8**	--
					PM	9/26/19	20.6	C	--	29.5	C	--	31.1	C	+1.6	--	**104.6**	**F**	–	**109.4**	**F**	**+4.8**	--
					SAT	9/28/19	18.5	B	--	19.9	B	--	20.3	C	+0.4	--	**49.3**	**D**	–	**54.1**	**D**	**+4.8**	--
9	Monterey Road and Luchessa Avenue	Signal	D	Yes	AM	11/5/19	20.9	C	--	21.5	C	--	22.0	C	+0.5	--	22.1	C	–	22.5	C	+0.4	--
					PM	9/5/19	30.9	C	--	33.5	C	--	34.0	C	+0.5	--	36.7	D	–	37.7	D	+1.0	--
					SAT	9/7/19	21.2	C	--	21.9	C	--	22.5	C	+0.6	--	23.5	C	–	24.2	C	+0.7	--
10	Chestnut Street and Ninth Street	Two-Way Stop (Worst Approach)	D	No	AM	5/7/19	12.3	B	No	12.7	B	No	17.8	C+	+5.1	No	12.9	B	No	18.5	C	+5.6	No
					PM	5/7/19	13.9	B-	No	15.1	C+	No	28.9	D	+13.8	No	15.9	C+	No	32.9	D-	+17.0	No
					SAT	9/28/19	11.8	B	No	12.7	B	No	22.6	C-	+9.9	No	13.3	B	No	25.5	D+	+12.2	No

Notes:
[1] TIF Int. = City of Gilroy Traffic Impact Fee intersection.
[2] Signal warrant analysis based on the Peak Hour Signal Warrant #3, Figure 4C Caltrans MUTCD, 2014.
Signal warrant analysis is not applicable to signalized intersections.
[3] Change in delay, expressed in seconds, for background plus project conditions is measured relative to background conditions.
Change in delay, expressed in seconds, for cumulative plus project conditions is measured relative to cumulative no project conditions.
* = CMP intersection
Entries denoted in **bold** indicate conditions that exceed the City's current level of service standard.
- Denotes project deficiency based on City of Gilroy criteria.

Freeway Segment Analysis

The City is still required to conform to the requirements of the Valley Transit Authority (VTA) which establishes a uniform program for evaluating the transportation impacts of land use decisions on the designated CMP Roadway System. The VTA's Congestion Management Program (CMP) has yet to adopt and implement guidelines and standards for the evaluation of the CMP roadway system using VMT. Therefore, the effects of the proposed project on freeway segments in the vicinity of the project area following the current methodologies as outlined in the *VTA Transportation Impact Analysis Guidelines*, was completed.

The results of the freeway level of service analysis under existing and existing plus project conditions are summarized in Table 9.

Freeway Segment Level of Service Results

Existing AM and PM peak hour traffic volumes, average speeds, and densities for the subject freeway segments were obtained from the Santa Clara Valley Transportation Authority CMP Monitoring & Conformance Report, 2018, which was the latest available monitoring report at the time the traffic analysis was prepared. Since the CMP report does not include Saturday peak-hour information, Saturday peak-hour volumes on the study freeway segments were derived by calculating a factor between Saturday peak-hour freeway count data for various of the study segments obtained from Caltrans and the CMP PM counts. The derived factor was applied to the CMP PM peak-hour counts for each study freeway segment to estimate Saturday peak-hour freeway counts. Similarly, Saturday average freeway speeds were interpolated from the AM and PM peak hour volumes and speeds.

The results of the freeway segment level of service analysis show that the following two study freeway segments currently operate at an unacceptable LOS F during at least one of the peak hours:

6. US 101, Northbound from Masten Avenue to San Martin Avenue (Saturday peak-hour)
11. US 101, Southbound from Monterey Road to Bloomingfield Avenue (SR 25) (PM and Saturday peak hours)

The proposed project is not projected to add traffic representing one percent (1%) or more of the segments' capacity to any of the study freeway segments, therefore, the proposed project would not create a level of service deficiency at any of the study freeway segments.

Freeway Ramp Analysis

A freeway ramp analysis was conducted at the US 101 interchange at Tenth Street/Pacheco Pass Highway (SR 152), which provides access to the project site. The analysis is based on calculated volume-to-capacity (V/C) ratios at the study freeway ramps.

Freeway Ramp Volumes

Peak-hour ramp volumes were interpolated from turning-movement traffic volumes at the adjacent ramp intersections.

Freeway Ramp Capacities

The study freeway off-ramps consist of one or two lanes at the point where they diverge from the freeway mainline and some widen to multiple lanes at the off-ramp intersection. For this ramp analysis,

Table 9
Freeway Segment Level of Service Results

					Existing Plus Project							Project Trip		
#	Freeway	Segment	Direction	Peak Hour	Speed[1] (mi/hr)	# of Lanes[1]	Capacity (vph)	Volume[1] (pc/h)	Density (pc/mi/ln)	LOS		Volume (vph)	% of Capacity	Adverse Effect?
1	US 101	from Betabel Road to Bloomfield Avenue (SR 25)	NB	AM	38	2	4,400	3,765	50	E		6	0.14	No
			NB	PM	58	2	4,400	3,768	33	D		9	0.20	No
			NB	SAT	48	2	4,400	4,517	47	E		6	0.14	No
2	US 101	from Bloomfield Avenue (SR 25) to Monterey Road	NB	AM	36	2	4,400	3,697	51	E		6	0.14	No
			NB	PM	42	2	4,400	3,890	46	D		9	0.20	No
			NB	SAT	44	2	4,400	3,731	43	D		6	0.14	No
3	US 101	from Monterey Road to Pacheco Pass Highway	NB	AM	64	3	6,900	4,302	22	C		6	0.09	No
			NB	PM	63	3	6,900	4,547	24	C		9	0.13	No
			NB	SAT	66	3	6,900	4,362	22	C		6	0.09	No
4	US 101	from Pacheco Pass Highway to Leavesley Road	NB	AM	59	3	6,900	5,582	32	D		21	0.30	No
			NB	PM	59	3	6,900	5,480	31	D		24	0.35	No
			NB	SAT	61	3	6,900	5,378	30	D		31	0.45	No
5	US 101	from Leavesley Road to Masten Avenue	NB	AM	40	3	6,900	5,776	48	E		21	0.30	No
			NB	PM	57	3	6,900	5,770	34	D		24	0.35	No
			NB	SAT	46	3	6,900	7,157	52	E		31	0.45	No
6	US 101	from Masten Avenue to San Martin Avenue	NB	AM	34	3	6,900	5,432	53	E		21	0.30	No
			NB	PM	52	3	6,900	5,981	38	D		24	0.35	No
			NB	SAT	41	3	6,900	7,537	**61**	**F**		31	0.45	No
7	US 101	from San Martin Avenue to Masten Avenue	SB	AM	60	3	6,900	5,383	30	D		36	0.52	No
			SB	PM	38	3	6,900	5,665	50	E		37	0.54	No
			SB	SAT	39	3	6,900	5,450	46	D		47	0.68	No
8	US 101	from Masten Avenue to Leavesley Road	SB	AM	67	3	6,900	2,636	13	B		36	0.52	No
			SB	PM	66	3	6,900	5,547	28	D		37	0.54	No
			SB	SAT	66	3	6,900	5,447	28	D		47	0.68	No
9	US 101	from Leavesley Road to Pacheco Pass Highway	SB	AM	64	3	6,900	4,417	23	C		36	0.52	No
			SB	PM	59	3	6,900	5,507	31	D		37	0.54	No
			SB	SAT	62	3	6,900	5,244	28	D		47	0.68	No
10	US 101	from Pacheco Pass Highway to Monterey Road	SB	AM	64	3	6,900	4,216	22	C		10	0.14	No
			SB	PM	30	3	6,900	5,145	56	E		13	0.19	No
			SB	SAT	31	3	6,900	5,095	55	E		14	0.20	No
11	US 101	from Monterey Road to Bloomfield Avenue (SR 25)	SB	AM	62	2	4,400	3,306	27	D		10	0.23	No
			SB	PM	21	2	4,400	2,795	**67**	**F**		13	0.30	No
			SB	SAT	22	2	4,400	2,657	**61**	**F**		14	0.32	No
12	US 101	from Bloomfield Avenue (SR 25) to Betabel Road	SB	AM	62	2	4,400	3,213	26	C		10	0.23	No
			SB	PM	58	2	4,400	3,728	32	D		13	0.30	No
			SB	SAT	49	2	4,400	4,435	45	D		14	0.32	No

[1] Information for the AM and PM peak hours were obtained from the Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2018. Average speed for the Saturday peak-hour was interpolated from the AM and PM peak hour volumes and speeds. Saturday peak-hour volumes on the study freeway segments were derived by calculating a factor between PM and Saturday peak-hour freeway count data for various of the study segments obtained from Caltrans, and applying this factor to the CMP PM peak-hour counts for each study freeway segment. This volume includes the proposed project trips.
Bold indicates unacceptable LOS.

the ramp capacity for the off-ramps is dictated by the number of lanes at the ramps' diverging point from the freeway mainline, since this is the location that dictates how much traffic exits the freeway.

The study on-ramps consist of one or two mixed-flow lanes with or without a separate HOV lane and are controlled by a ramp meter during the peak hours in the peak commute direction only (northbound in the morning and southbound in the evening). All multiple-lane on-ramps studied narrow to a single lane after the ramp meter before the freeway merge point. For metered on-ramps, the constraint point is at the meter. For non-metered on-ramps, the constraint point is at the ramps' merging point with the freeway.

The typical capacity for a diagonal freeway ramp is 1,800 vehicles per hour per lane (vphpl). Loop ramps have a typical capacity of 1,600 vphpl. For metered on-ramps, the capacity depends on the ramp meter rate. Freeway ramp meter rates for the study on-ramps were assumed to be 900 vph (maximum allowable rate per ramp in Caltrans District 4).

Freeway Ramp Configurations

The *US 101 at Tenth Street/Pacheco Pass Highway (SR 152)* interchange consists of a full-access partial cloverleaf interchange and includes the following ramps:

- US 101 southbound diagonal off-ramp (SB off-ramp) – this ramp is controlled by a traffic signal on Tenth Street and consists of two lanes where it diverges from the freeway main line, for a total capacity of 3,600 vph.
- US 101 southbound diagonal on-ramp (SB on-ramp) – this ramp is controlled by a ramp meter during the PM peak hour only and narrows down to a single lane after the meter to the freeway merging point. The capacity of the ramp is as follows:
  - AM peak hour (unmetered) – 1,800 vph
  - PM peak hour (metered) – 900 vph
- US 101 southbound loop on-ramp (SB loop on-ramp) – this ramp is controlled by a ramp meter during the PM peak hour only and narrows down to a single lane after the meter to the freeway merging point. The capacity of the ramp is as follows:
  - AM peak hour (unmetered) – 1,600 vph
  - PM peak hour (metered) – 900 vph
- US 101 northbound diagonal off-ramp (NB off-ramp) – this ramp is controlled by a traffic signal on Pacheco Pass Highway and consists of one lane where it diverges from the freeway main line, for a total capacity of 1,800 vph.
- US 101 northbound diagonal on-ramp (NB on-ramp) – this ramp is controlled by a ramp meter during the AM peak hour only and narrows down to a single lane after the meter to the freeway merging point. The capacity of the ramp is as follows:
  - AM peak hour (metered) – 900 vph
  - PM peak hour (unmetered) – 1,800 vph
- US 101 northbound loop on-ramp (NB loop on-ramp) – this ramp is controlled by a ramp meter during the AM peak hour only and narrows down to a single lane after the meter to the freeway merging point. The capacity of the ramp is as follows:
  - AM peak hour (metered) – 900 vph
  - PM peak hour (unmetered) – 1,600 vph

Freeway Ramp Analysis Results

The results of the freeway ramp analysis under existing and background plus project conditions are described below and summarized in Table 10.

Based on the calculated V/C ratios, all of the study freeway ramps currently operate at acceptable levels. Under background plus project conditions, based on the ramp capacities and traffic volume projections, it is projected that all of the study freeway ramps would continue to operate at acceptable levels.

Intersection Operations Analysis

The analysis of the intersection levels of service was supplemented with an analysis of intersection operations for selected intersections. The intersection operations analysis is an important component of the process to evaluate traffic conditions at an intersection. Although calculated levels of service may appear adequate at some locations, traffic operations problems caused by inadequate storage space for vehicle queues could prevent the intersection from ever realizing the calculated level of service. When inadequate storage space becomes an issue, queues in one turn movement might spill into an adjacent lane and block traffic in that lane from proceeding through the intersection.

Vehicle queues were estimated using a Poisson probability distribution. Key intersections where the project is anticipated to add more than 10 peak-hour trips per lane to the left-turn movement were selected for evaluation. The adequacy of the queue storage capacity for the following intersection movements was evaluated in this analysis:

1. Monterey Road and Tenth Street – Westbound left-turn movement
3. Chestnut Street/Automall Parkway and Tenth Street – Eastbound and westbound left-turn movements, southbound approach
5. US 101 Northbound Ramps and Pacheco Pass Highway (SR 152) – Northbound left-turn movement
9. Monterey Road and Luchessa Avenue – Eastbound left-turn movement
10. Chestnut Street and Ninth Street – Westbound approach

The operations analysis results under background plus project conditions are summarized in Table 11. The intersection queue calculation sheets are included in Appendix E.

Intersection Operations Analysis Results

The existing maximum queue length for all of the above movements is estimated to be able to accommodate within the available queue storage capacity for each of the movements during the study peak hours, with the exception of the following three movements:

1. Monterey Road and Tenth Street – Westbound left-turn movement

The maximum queue length for the westbound left-turn movement at the *Monterey Road/Tenth Street* intersection is estimated to be 7 vehicles (or 175 feet) during both the PM and Saturday peak hours under existing and background conditions. The maximum existing/background queue length exceeds the existing queue storage capacity of approximately 155 feet (or 6 vehicles) for this movement. The addition of project traffic to this turn movement would cause the projected 95th percentile vehicle queue to increase by 1 vehicle (to 8 vehicles, or 200 feet) during both the PM and Saturday peak hours under background plus project conditions, exceeding the existing queue storage capacity by 2 vehicle (approximately 50 feet). This is considered a project deficiency, according to the City of Gilroy definition of queue deficiencies.

Table 10
Freeway Ramp Analysis Results

Interchange/Ramp	Peak Hour	Ramp Type	Ramp Type	Constraint Point[1]	Existing Control	Existing Volume[3] (vph)	Existing Capacity[2] (vph)	Existing V/C	Existing LOS	Background Plus Project Control	Background Plus Project Volume (vph)	Background Plus Project Capacity[2] (vph)	Background Plus Project V/C	Background Plus Project LOS
US 101 at Tenth Street/Pacheco Pass Highway (SR 152)														
Southbound Off-Ramp	AM	Diagonal	Off	2	Signal	743	3,600	0.206	A	Signal	1,019	3,600	0.283	A
	PM				Signal	1,417	3,600	0.394	A	Signal	1,737	3,600	0.483	A
	SAT				Signal	1,304	3,600	0.362	A	Signal	1,544	3,600	0.429	A
Southbound On-Ramp	AM	Diagonal	On	1	Meter-Off	98	1,800	0.054	A	Meter-Off	167	1,800	0.093	A
	PM				Meter-On	139	900	0.154	A	Meter-On	197	900	0.219	A
	SAT				Meter-Off	132	1,800	0.073	A	Meter-Off	214	1,800	0.119	A
Northbound Off-Ramp	AM	Diagonal	Off	1	Signal	377	1,800	0.209	A	Signal	572	1,800	0.318	A
	PM				Signal	329	1,800	0.183	A	Signal	496	1,800	0.276	A
	SAT				Signal	594	1,800	0.330	A	Signal	715	1,800	0.397	A
Northbound On-Ramp	AM	Loop	On	1	Meter-On	291	900	0.323	A	Meter-On	465	900	0.517	A
	PM				Meter-Off	296	1,600	0.185	A	Meter-Off	493	1,600	0.308	A
	SAT				Meter-Off	330	1,600	0.206	A	Meter-Off	537	1,600	0.336	A

Notes:
1. The constraint point of a ramp is the location on the ramp that dictates how much traffic enters/exits the freeway. The constraint point determines the ramp's capacity.
For freeway off-ramps, the constraint point is at the ramp's diverging point from the freeway mainline.
For non-metered on-ramps, the constraint point is at the ramp's merging point with the freeway.
For metered on-ramps, the constraint point is at the meter.
2. Typical capacities for diagonal and loop ramps are 1,800 and 1,600 vehicles per hour per lane (vphpl), respectively.
The capacity for non-metered ramps is determined based on the number of lanes at the ramp's constraint point.
The capacity for metered on-ramps was assumed to be 900 vph (Caltrans District 4 maximum meter rate).
3. Existing ramp volumes were interpolated from existing peak-hour turn-movement counts at the ramp intersections.
The ramp level of service corresponds to the calculated ramp V/C ratios.

Table 11
Intersection Vehicle Queue Analysis

	1. Monterey/ Tenth			3. Chestnut/10th									5. US 101 NB Off-Ramp/SR 152			9. Monterey/ Luchessa			10. Chestnut/ Ninth		
Measurement	WBL AM	WBL PM	WBL SAT	EBL AM	EBL PM	EBL SAT	SBL/T/R AM	SBL/T/R PM	SBL/T/R SAT	WBL AM	WBL PM	WBL SAT	NBL AM	NBL PM	NBL SAT	EBL AM	EBL PM	EBL SAT	WBL/T/R AM	WBL/T/R PM	WBL/T/R SAT
Existing Conditions																					
Cycle/Delay[1] (sec)	85	100	110	120	130	125	120	130	125	120	130	125	65	85	75	85	100	80	12.3	13.9	11.8
Lanes	1	1	1	1	1	1	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	55	127	110	35	49	63	269	309	296	281	330	378	117	108	126	106	59	39	12	33	11
Volume (vphpl)	55	127	110	35	49	63	90	103	99	281	330	378	117	108	126	106	59	39	12	33	11
Avg. Queue (veh/ln.)	1	4	3	1	2	2	3	4	3	9	12	13	2	3	3	3	2	1	0	0	0
Avg. Queue[2] (ft./ln)	32	88	84	29	44	55	75	93	86	234	298	328	53	64	66	63	41	22	1	3	1
95th %. Queue (veh/ln.)	3	7	7	3	4	5	6	7	7	15	18	19	5	5	6	5	4	3	1	1	1
95th %. Queue (ft./ln)	75	175	175	75	100	125	150	175	175	375	450	475	125	125	150	125	100	75	25	25	25
Storage (ft./ ln.)	150	150	150	200	200	200	675	675	675	350	350	350	275	275	275	150	150	150	300	300	300
Adequate (Y/N)	YES	**NO**	**NO**	YES	YES	YES	YES	YES	YES	**NO**	**NO**	**NO**	YES	YES	YES	YES	YES	YES	YES	YES	YES
Background Conditions																					
Cycle/Delay[1] (sec)	85	100	110	120	130	125	120	130	125	120	130	125	65	85	75	85	100	80	12.7	15.1	12.7
Lanes	1	1	1	1	1	1	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	57	135	115	35	49	68	304	394	369	283	331	379	136	131	146	111	64	44	12	33	11
Volume (vphpl)	57	135	115	35	49	68	101	131	123	283	331	379	136	131	146	111	64	44	12	33	11
Avg. Queue (veh/ln.)	1	4	4	1	2	2	3	5	4	9	12	13	2	3	3	3	2	1	0	0	0
Avg. Queue[2] (ft./ln)	34	94	88	29	44	59	84	119	107	236	299	329	61	77	76	66	44	24	1	3	1
95th %. Queue (veh/ln.)	3	7	7	3	4	5	7	9	8	15	18	19	5	6	6	6	4	3	1	1	1
95th %. Queue (ft./ln)	75	175	175	75	100	125	175	225	200	375	450	475	125	150	150	150	100	75	25	25	25
Storage (ft./ ln.)	150	150	150	200	200	200	675	675	675	350	350	350	275	275	275	150	150	150	300	300	300
Adequate (Y/N)	YES	**NO**	**NO**	YES	YES	YES	YES	YES	YES	**NO**	**NO**	**NO**	YES	YES	YES	YES	YES	YES	YES	YES	YES
Background Plus Project Conditions																					
Cycle/Delay[1] (sec)	85	100	110	120	130	125	120	130	125	120	130	125	65	85	75	85	100	80	17.9	25.7	21.7
Lanes	1	1	1	1	1	1	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	73	150	138	97	100	146	586	646	739	289	335	386	198	187	225	123	74	60	147	174	202
Volume (vphpl)	73	150	138	97	100	146	195	215	246	289	335	386	198	187	225	123	74	60	147	174	202
Avg. Queue (veh/ln.)	2	4	4	3	4	5	7	8	9	10	12	13	4	4	5	3	2	1	1	1	1
Avg. Queue[2] (ft./ln)	43	104	105	81	90	127	163	194	214	241	302	335	89	110	117	73	51	33	18	31	30
95th %. Queue (veh/ln.)	4	8	8	6	7	9	11	13	14	15	18	20	7	8	8	6	5	3	2	3	3
95th %. Queue (ft./ln)	100	200	200	150	175	225	275	325	350	375	450	500	175	200	200	150	125	75	50	75	75
Storage (ft./ ln.)	150	150	150	200	200	200	675	675	675	350	350	350	275	275	275	150	150	150	300	300	300
Adequate (Y/N)	YES	**NO**	**NO**	YES	YES	**NO**	YES	YES	YES	**NO**	**NO**	**NO**	YES	YES	YES	YES	YES	YES	YES	YES	YES

[1] Vehicle queue calculations based on cycle length for signalized intersections and control delay for unsignalized intersections.
[2] Assumes 25 feet per vehicle in the queue.
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, R = Right, T = Through, L = Left.

3. Chestnut Street and Tenth Street –

Eastbound left-turn movement

The maximum queue length for the eastbound left-turn movement at the *Chestnut Street/Tenth Street* intersection is estimated to be 5 vehicles (or 125 feet) during the Saturday peak-hour under both existing and background conditions. The maximum existing/background queue length can be accommodated within the existing storage capacity of approximately 200 feet for this movement. The addition of project traffic to this turn movement would cause the projected 95th percentile vehicle queue to increase by 4 vehicles (to 9 vehicles, or 225 feet) during the Saturday peak-hour under background plus project conditions, exceeding the existing queue storage capacity by 1 vehicle (25 feet). This is considered a project deficiency, according to the City of Gilroy definition of queue deficiencies.

Westbound left-turn movement

The maximum queue length for the westbound left-turn movement at the *Chestnut Street/Tenth Street* intersection is estimated to be 19 vehicles (or 475 feet) during the Saturday peak-hour under both existing and background conditions. The maximum existing/background queue length exceeds the existing queue storage capacity of approximately 350 feet (or 14 vehicles) for this movement. The addition of project traffic to this turn movement would cause the projected 95th percentile vehicle queue to increase by 1 vehicle (to 20 vehicles, or 500 feet) during the Saturday peak-hour under background plus project conditions, exceeding the existing queue storage capacity by 6 vehicles (150 feet). This is considered a project deficiency, according to the City of Gilroy definition of queue deficiencies.

Projected Deficiencies and Possible Improvements

Described below are deficiencies that are projected to occur with implementation of the proposed project. The project's contribution to the projected deficiencies and/or possible improvements to improve operating conditions also are described below.

8. Princevalle Street and Tenth Street (Level of Service Deficiency)

This City of Gilroy signalized intersection is projected to operate at unacceptable LOS F and D during the PM and Saturday peak hours, respectively, under cumulative conditions and the addition of project traffic would cause the intersection average delay to increase by 1 or more seconds.

The projected deficiency at this intersection is caused cumulatively by the proposed project and all other approved and pending projects in the City of Gilroy. Therefore, the project must make a fair-share contribution toward future improvements that would restore operations at the intersection to acceptable levels.

1. Monterey Road and Tenth Street – Westbound Left-turn (Queue Deficiency)

The addition of project traffic to the westbound left-turn movement at the *Monterey Road/Tenth Street* intersection would cause the projected 95th percentile vehicle queue to increase by 1 vehicle (to 8 vehicles, or 200 feet) during both the PM and Saturday peak hours under background plus project conditions, exceeding the existing queue storage capacity (approximately 155 feet) by 2 vehicle (approximately 50 feet).

The project deficiency at this intersection could be improved by extending the existing westbound left-turn pocket an additional 50 feet. However, because of the at-grade railroad crossing located along Tenth Street (approximately 225 feet east of Monterey Road), the existing westbound left-turn pocket can only be extended an additional 30 feet, for a total pocket length of approximately 185 feet (plus a

40-foot bay taper, same length as the existing taper). This improvement would require restriping of the center median along Tenth Street (see Figure 15).

3. Chestnut Street and Tenth Street – Eastbound Left-turn (Queue Deficiency)

The addition of project traffic to the eastbound left-turn movement at the *Chestnut Street/Tenth Street* intersection would cause the projected 95th percentile vehicle queue to increase by 4 vehicle (to 9 vehicles, or 225 feet) during the Saturday peak-hour under background plus project conditions, exceeding the existing queue storage capacity (approximately 200 feet) by 1 vehicle (25 feet).

The project deficiency at this intersection could be improved by extending the existing eastbound left-turn pocket by a minimum of 25 feet. The existing eastbound left-turn pocket can be extended the required 25 feet (although a minimum of 50 feet is recommended); however, it will require the partial removal of the existing landscaped center median, including two trees (see Figure 15).

3. Chestnut Street and Tenth Street – Westbound Left-turn (Queue Deficiency)

The addition of project traffic to the westbound left-turn movement at the *Chestnut Street/Tenth Street* intersection would cause the projected 95th percentile vehicle queue to increase by 1 vehicle (to 20 vehicles, or 500 feet) during the Saturday peak-hour under background plus project conditions, exceeding the existing queue storage capacity (approximately 350 feet) by 6 vehicle (150 feet).

The project deficiency at this intersection could be improved with the addition of a second westbound left-turn lane. Providing a second westbound left-turn lane at this location will require the widening of Tenth Street along the project site frontage. Potentially, the south side of Tenth Street also may require to be widened in order for the east leg of the intersection to align with the west leg of the intersection.

Other Transportation Issues

Other issues related to transportation were evaluated to determine if any deficiencies would exist under project conditions. The other transportation issues include:

- Site access and circulation evaluation
- Parking
- Potential impacts to bicycle, pedestrian, transit facilities

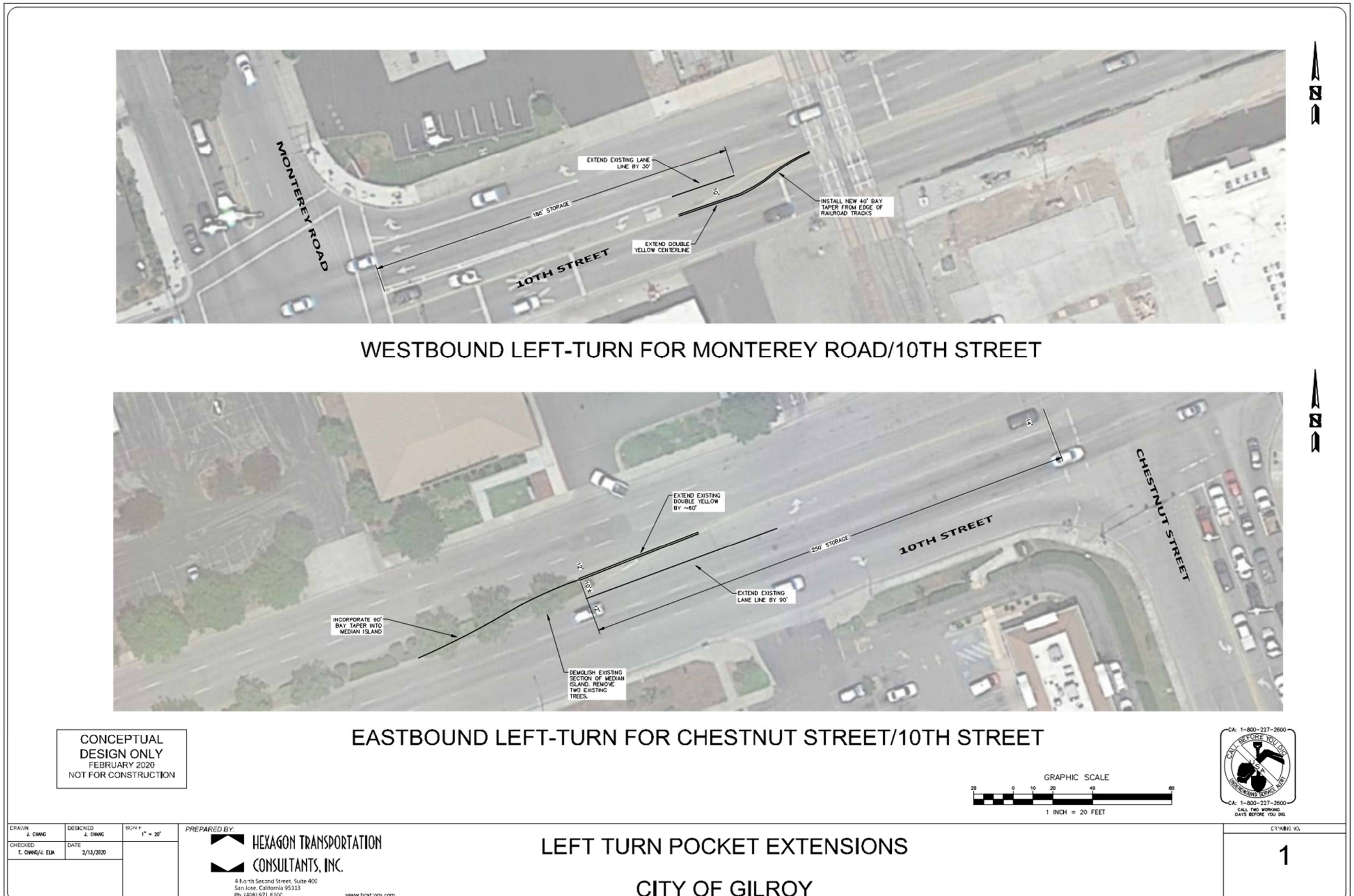
Site Access and On-Site Circulation

This analysis is based on a review of the project site plan, dated September 15, 2020. The site plan is presented on Figure 2 of this report.

Site Access

Access to the proposed project would be provided via one driveway on Tenth Street, one driveway on Chestnut Street, and two driveways on Ninth Street. The proposed driveway on Tenth Street would be located approximately 200 feet east of Chestnut Street and it would consist of right-in and out access only with one lane in each direction. This driveway would provide access to the proposed gas station as well as the main drive aisle that would connect to all project parcels on site. The proposed driveway on Chestnut Street would be located adjacent to the existing Fire Station, approximately 180 feet north of Tenth Street, and it would provide full access to/from the project site with one inbound lane and two outbound lanes. This driveway also would provide direct access to the proposed gas station as well as

Figure 15
Possible Left-Turn Pocket Extensions



the internal main drive aisle. The proposed driveways on Ninth Street would be located approximately 300 and 650 feet east of Chestnut Street and would provide full access to/from the project site with one lane in each direction at each driveway. The west Ninth Street driveway would provide direct access to the proposed hotel and would connect to the main drive aisle while the east Ninth Street driveway would provide access to the hotel, the car wash, and the main drive aisle.

The City of Gilroy *General Guidelines* document, dated August 18, 2014, specifies that industrial and commercial driveways should have a minimum and maximum approach width of 35 and 45 feet, respectively. The site plan shows the driveways on Tenth and Ninth Streets to be 35 feet wide each and the driveway on Chestnut Street to be 36 feet, satisfying the City's minimum width requirements for commercial driveways.

Although the width of the proposed driveways would meet City requirements, the curb radii at the project driveways appear to be reduced. This could be problematic particularly at the Tenth Street and Ninth Street driveways because larger vehicles require a larger turning radius. The turning radius is dictated by the curb radius and width of the lanes from which the vehicle is turning from and to. A truck may be able to make a turn into a large driveway (width) from a wide lane (16 feet) with reduced driveway curb radii. However, if the driveway width is narrow and the curb radius is reduced, the truck may need to complete the turn by encroaching into the adjacent lane and/or the outbound lane on the driveway.

Operations at the Project Driveways

The proposed project is projected to add up to 1,000 trips (both inbound and outbound) during the highest peak hour (Saturday peak-hour) to all four driveways serving the project site. Project traffic at the driveways was assigned based on its origin/destination, the existing roadway network, site layout, and project driveway locations and turn restrictions. Following this method, it is estimated that the majority of the inbound project traffic (approximately 60% of the total inbound project traffic) would utilize the Tenth Street driveway, while the majority of the outbound project traffic (approximately 53% of the total outbound project traffic) would utilize the Chestnut Street driveway, as illustrated on Figure 16.

Traffic operations at all project driveways were evaluated and the results are summarized below.

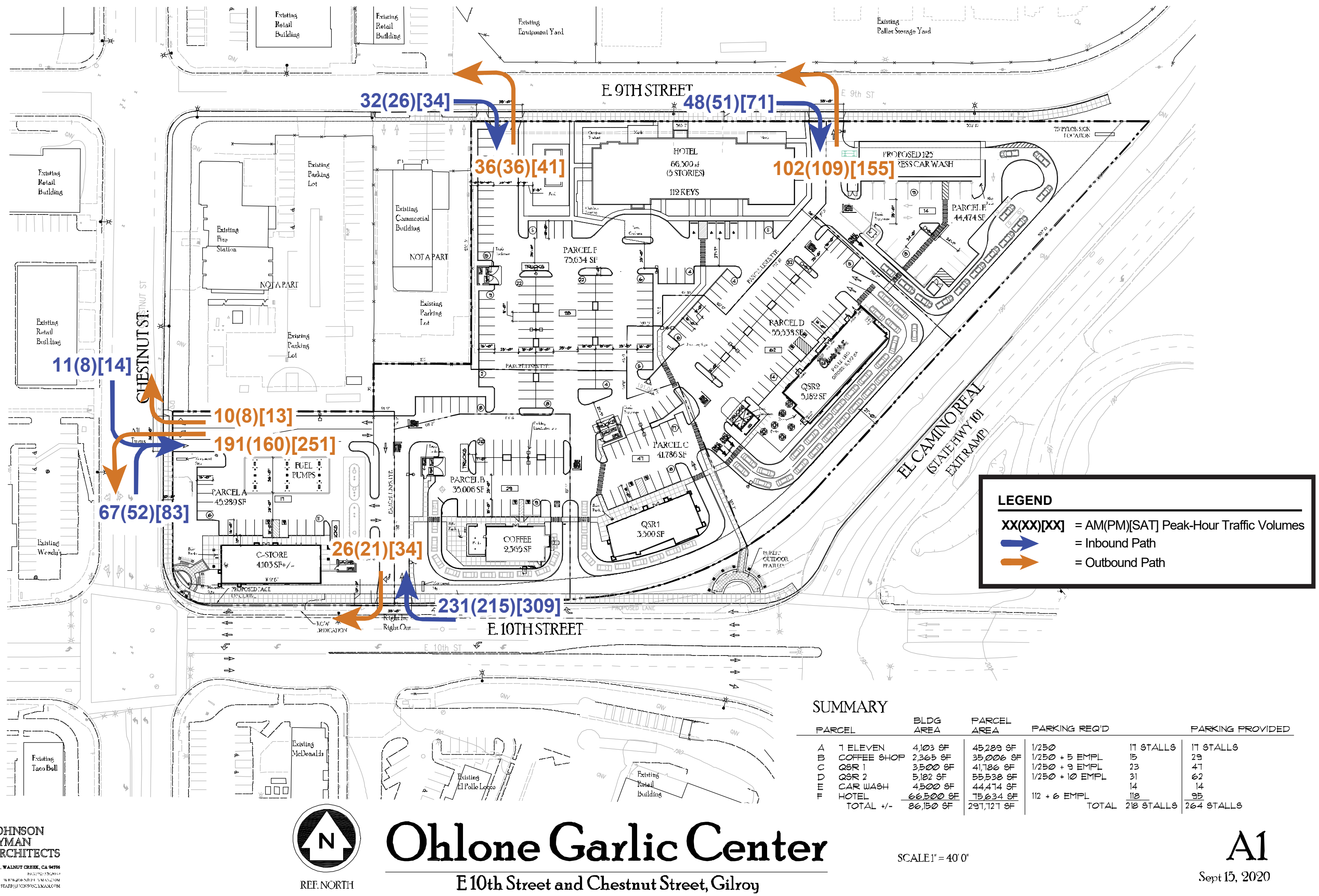
Tenth Street Driveway

The project driveway on Tenth Street is projected to serve the largest amount of inbound project traffic (approximately 309 inbound trips during the Saturday peak-hour) but the smallest amount of outbound traffic (approximately 34 outbound trips during the Saturday peak-hour). All project traffic accessing the site from the east on Tenth Street is assumed to use the Tenth Street driveway while all other inbound traffic would utilize the remaining driveways.

Traffic operations at the Tenth Street driveway would be greatly dictated by the operations along westbound Tenth Street. The Tenth Street driveway is located approximately 200 feet east of the Chestnut Street/Tenth Street intersection. The distance between the Chestnut Street/Tenth Street intersection and the US 101 Southbound Ramps/Tenth Street intersection is approximately 650 feet. Tenth Street consists of two westbound through lanes and one westbound left-turn lane at its intersection with Chestnut Street, along the southern project site frontage.

The level of service calculations at the intersection of Chestnut Street and Tenth Street show that during the Saturday peak-hour under background conditions, the westbound through queue length is projected to be approximately 20 vehicles per lane, or 500 feet per lane assuming a vehicle length of 25 feet. A queue of this length would extend past the proposed Tenth Street driveway. During the peak

Figure 16
Project Traffic at the Project Site Driveways



PARCEL		BLDG AREA	PARCEL AREA	PARKING REQ'D		PARKING PROVIDED
A	7 ELEVEN	4,103 SF	45,289 SF	1/250	17 STALLS	17 STALLS
B	COFFEE SHOP	2,365 SF	35,006 SF	1/250 + 5 EMPL	15	29
C	QSR 1	3,500 SF	41,786 SF	1/250 + 9 EMPL	23	47
D	QSR 2	5,182 SF	55,538 SF	1/250 + 10 EMPL	31	62
E	CAR WASH	4,500 SF	44,474 SF		14	14
F	HOTEL	66,500 SF	75,634 SF	112 + 6 EMPL	118	95
	TOTAL +/-	86,150 SF	297,127 SF	TOTAL	218 STALLS	264 STALLS

hours, inbound project traffic would queue along westbound Tenth Street to access the driveway while outbound traffic would queue within the site while waiting for a gap in traffic to enter Tenth Street. The projected delay along westbound Tenth Street at the Chestnut Street/Tenth Street intersection is approximately 26 seconds during the Saturday peak-hour under background plus project conditions. The 26-second delay would be experienced by inbound traffic along westbound Tenth Street as well as outbound traffic at this driveway. Because of the low outbound volumes, no measurable queue lengths are anticipated along the outbound lane at the Tenth Street driveway.

It is assumed that some of the outbound traffic at the Tenth Street driveway would make a left-turn movement at the Chestnut Street/Tenth Street intersection. However, based on the projected queue lengths along westbound Tenth Street, merging to the westbound left-turn lane from this driveway to complete a westbound left-turn movement during the peak hours would be challenging, potentially resulting in drivers looking for alternative outbound routes when making this movement.

Implementation of the recommended second westbound left-turn lane at the intersection of Chestnut Street/Tenth Street (recommended for the projected queue storage deficiency for this movement) would provide additional capacity at the intersection and along the westbound direction on Tenth Street, potentially reducing projected queue lengths and delay times along westbound Tenth Street.

Chestnut Street Driveway

The project driveway on Chestnut Street is projected to serve the largest amount of outbound project traffic (approximately 264 outbound trips during the Saturday peak-hour). Chestnut Street consist of one northbound lane along the western project site frontage and three southbound lanes (one left-turn lane, one shared left-and-through lane, and one shared right-and-through lane) at its intersection with Tenth Street.

Most of the inbound and outbound traffic at the Chestnut Street driveway would come from/head to the Chestnut Street/Tenth Street intersection and would make a right-in or left-out turn-movement at the driveway. Right-turning movements in and out of the driveway are not anticipated to experience measureable delays due to the relatively low traffic volumes along northbound Chestnut Street (approximately 230 vehicles during the Saturday peak-hour). Left-in and left-out turn movements, however, would be in conflict with traffic along Chestnut Street, in particular with the southbound queue at the Chestnut Street/Tenth Street intersection, located approximately 180 feet south of this driveway.

Maximum queue lengths at the Chestnut Driveway were estimated based on the projected traffic volumes at the driveway. The queue analysis shows that no more than one vehicle would queue in the southbound-in (left-turn in) direction along Chestnut Street at the driveway. The outbound left-turn queue length at the driveway is projected to extend a maximum of 8 vehicles (or 200 feet) during the Saturday peak-hour (only 3 vehicles during the AM and PM peak hours). This driveway is shown on the site plan to provide approximately 300 feet of queue storage capacity for both the left-out and right-out movements. Therefore, the projected outbound queue length at the Chestnut driveway would be able to accommodate within the proposed queue storage capacity.

The above queue projections at the Chestnut Driveway, although they account for traffic volumes along Chestnut Street, do not account for impeded traffic conditions along Chestnut Street. The queue analysis presented in a previous section projects that the maximum queue length for the southbound approach at the Chestnut Street/Tenth Street intersection would be 200 feet during the Saturday peak-hour under background conditions, extending past the proposed driveway on Chestnut Street. Southbound left-turn inbound traffic (14 trips during the Saturday peak-hour) would queue with the southbound traffic and access the site during the southbound approach green cycle, or would opt for using the Ninth Street driveways. Left-turn outbound traffic will most likely find alternative faster outbound routes, such as the driveways along Ninth Street, if long wait times are experience at the Chestnut driveway.

Ninth Street Driveways

The project driveways on Ninth Street are projected to serve most of the traffic from/to the north (approximately 105 inbound and 196 outbound trips during the Saturday peak-hour). Ninth Street consists of a two-lane undivided roadway along the northern project site frontage.

Traffic volumes along Ninth Street, along the project site frontage, are relatively low. Currently, this segment of Tenth Street serves approximately 23 vehicles (both directions combined) during the Saturday peak-hour, with a maximum of 55 vehicles occurring during the PM peak-hour. Traffic volumes along this segment of Ninth Street are projected to remain the same under background conditions. Therefore, traffic operations along Ninth Street with implementation of the proposed project would be adequate with minimal delays experienced at the project site driveways.

Emergency Vehicle Access

Project site driveways must be design with adequate width to allow emergency vehicles to turn in and out of the site without any issues. Per City design guidelines, a fire access roadway greater than or equal to 20 feet in width is applicable to all commercial, industrial, and residential buildings. The fire access roadway should be provided within 150 feet of structures.

As mentioned previously, although all the proposed project driveways would satisfy the City of Gilroy minimum width requirements for commercial driveways, the curb radii at the project driveways appears to be reduced. This could be problematic particularly at the Tenth Street and Ninth Street driveways because large emergency vehicles may need to complete a right-turn into these driveways by encroaching into the adjacent lane and the outbound lane on the driveway. Therefore, it is recommended that adequate curb radii are provided at the project driveways to allow emergency and larger vehicle access into the project site.

The site plan shows a two-way drive aisle (main drive aisle) that would extend along the entire site, between the Chestnut Driveway and the east Ninth Street driveway, and would connect to all parking areas and site driveways. The dimensions on the drive aisle, although not listed along its entire length on the site plan, appear to be 25 feet or wider, adequate width for two-way travel. All proposed buildings would be located within 150 feet of the main drive aisle. However, 90-degree parking stalls are located along parts of the main drive aisle, potentially affecting the ability to provide unimpeded traffic flow through the drive aisle. Additionally, a truck parking space would be located along the main drive aisle, across from one of the fast-food restaurants. This truck parking space would be utilized for the delivery of goods to the restaurant. When occupied, the truck parking space would reduce the main drive aisle width to less than 22 feet. Nevertheless, the main drive aisle would continue to satisfy the fire access roadway requirement.

Pedestrian Access

Pedestrian traffic to/from the project site would be able to utilize the existing pedestrian facilities (sidewalks, crosswalks, pedestrian signal phasing at signalized intersections) along the adjacent streets to access the project site. Sidewalks are found along both sides of Tenth and Chestnut Streets in the vicinity of the project site. However, as described earlier in this report, some of the streets within the project area have missing sidewalks along one or both sides of the street, including Ninth Street, along the northern project site frontage.

Pedestrian access to the project site would be provided via the proposed new sidewalks along the project site frontage on Chestnut, Ninth, and Tenth Streets, which would connect to existing pedestrian facilities along these streets. The sidewalks along the Ninth and Tenth Street project site frontages would extend into the site, providing direct pedestrian access to the project site.

City guidelines require minimum sidewalk width of 10 feet in commercial areas. They also require development projects to install (or upgrade existing) pedestrian crossings and Americans with Disabilities Act (ADA)-compliant curb ramps at intersections. The site plan shows 10-foot wide sidewalks all along the project site frontage, satisfying this requirement. It is recommended that ADA-compliant curb ramps be installed along the project site frontage, in particular at the intersections of Chestnut Street/Tenth Street and US 101 Southbound Ramps/Tenth Street. Marked crosswalks at the intersection of Chestnut Street and Ninth Street also are recommended.

On-Site Circulation

The site plan shows the proposed commercial buildings located along the Tenth Street project site frontage, and the Hotel and car wash buildings located along the Ninth Street frontage. The site's main drive aisle (connecting the Chestnut Street and east Ninth Street driveways) would separate the hotel area (north side of the drive aisle) from the rest of the proposed uses (south side of the drive aisle). A second east-west drive aisle (restaurant drive aisle) would connect the three proposed restaurant parking areas.

As mentioned previously, 90-degree parking would be located along parts of the main drive aisle. This is not ideal because parking activity within these parking spaces would momentarily stall traffic flow along the drive aisle. However, it is not anticipated that parking activity within the main drive aisle would affect operations at the project site driveways or along the adjacent streets since these parking spaces are located away from the site driveways.

Gas Station

Direct access to the gas station would be provided via the Tenth Street and Chestnut Street driveways. Drivers could enter and exit the gas station via these driveways without having to travel through the site.

Car Wash

Direct access to the car wash would be provided via the east Ninth Street driveway, although it is projected that it would also be accessed via the Tenth Street and Chestnut Street driveways. The car wash would include a capacity for approximately 15 vehicles to queue at the car wash entrance.

Hotel

Direct access to the hotel would be provided via both driveways on Ninth Street, although it is projected that it would also be accessed via the Tenth Street driveway. Since the most direct access to the hotel area would be provided via the Ninth Street driveways, it is recommended that hotel guests be directed to use the Ninth Street driveways to access the site in an effort to reduce the amount of vehicles circulating the site. This could be accomplished by including this recommendation in the hotel directions provided to guests with the check-in information.

Restaurants

Access to the restaurants would be provided via the main drive aisle, via all project site driveways. Most parking spaces for the restaurant uses would be located along the south side of the main drive aisle and would be accessible via the main drive aisle or the restaurants drive aisle.

Drive-Through Window Operations

Each of the proposed restaurants (including the coffee house) would include drive-through operations. All drive-through lanes would be accessible from the restaurants drive aisle, with direct connections to the main drive aisle.

The site plan shows queuing capacity for approximately 12 vehicles within the coffee house drive-through lane, 10 vehicles within the smaller (3,500 s.f.) restaurant drive-through lane, and approximately 26 vehicles within the larger (5,180 s.f.) restaurant drive-through lane. The queue length at drive-through windows is dependent of the type of establishment and its service rate. For example, drive-through lane lengths for other restaurants in town range from approximately 100 feet/4 vehicles (Wienerschnitzel restaurant on First Street), 250 feet/10 vehicles (McDonalds restaurant on First Street), 170 feet/7 vehicles and 190 feet/7-8 vehicles (Starbucks on Camino Arroyo and Renz Lane, respectively), to approximately 300 feet/12 vehicles (Sonic restaurant on Pacheco Pass Highway). The City of Gilroy Zoning Ordinance, under section 30.31.20 (Parking Spaces Requirements), state that restaurants with drive-up windows must provide 8 auto waiting spaces for each exterior service window.

Limited published information regarding drive-through window operations and queue lengths is available. However, a study completed by CountingCars.com, a transportation data collection equipment manufacturer located in Minneapolis, Minnesota, provides some information on drive-through window operations for common land uses. "*Drive-Through Queue Generation*", dated February 2012, provides queuing data for different land uses with drive-through service, based on video recordings conducted at a minimum of six sites per use. All sites surveyed were located in Minneapolis, Minnesota or Kansas City, Kansas. The report also states that five of the six surveyed car wash sites were located within a gas station and no information on the size of the coffee shops or the fast-food restaurants is given. Based on the data collected, the report concludes that the 85th percentile maximum queue length for car washes is 7 vehicles, 13 vehicles for coffee shops, and 12 vehicles for fast-food restaurants. This information, however, is based on a limited number of studies, none of which were conducted in California, and unknown coffee shop/restaurant size. Thus, the maximum queue length information presented in the study can only be used for comparison purposes. Based on the above queue length information, the proposed queue storage capacity for the proposed coffee shop and the small restaurant could be exceeded by one and two vehicles, respectively. The proposed vehicle queue storage capacity for the larger restaurant and the car wash would both be adequate.

Although the anticipated queue length within the proposed drive-through lanes cannot be estimated without further research on similar land uses in the area, the proposed length of the drive-through lanes would exceed the 8-vehicle waiting spaces required by the City's Zoning Ordinance, and would be in line or would exceed the storage capacity provided at similar land use drive-through lanes in town. If the coffee shop or small restaurant drive-through lane capacity would be exceed by one or two vehicles, these vehicles would be able to store within the restaurant drive aisle, which although not ideal, would not extend or create operational issues within the main drive aisle. The location of the drive-through lane entrances would make it very unlikely for their vehicular queues to affect operations along Tenth and Chestnut Streets.

The drive through lane at the larger restaurant shows a double lane at the pick-up window/drive-through exit. It is not clear how a double lane at this location would work given the vehicles must access the drive-through window at this location.

Truck Access

The site must be designed to allow all vehicular access and circulation within the site. Trucks normally require more space than a passenger vehicle when entering and circulating a site mainly because trucks require a greater turning radius. This includes larger vehicles, such as emergency vehicles, delivery trucks, and garbage trucks.

Trash enclosures are shown on the site plan within each individual parcel. Garbage trucks must be able to navigate the site to access each of these enclosures. Drive aisle widths and curb-radii must be wide enough to accommodate the larger travel path associated with larger trucks.

In addition, each parcel with the exception of the car wash, has a designated area for larger trucks to park near each of the buildings (one space per parcel), for the purpose of deliveries, pick-ups, and emergency access to the site.

Pedestrian On-Site Circulation

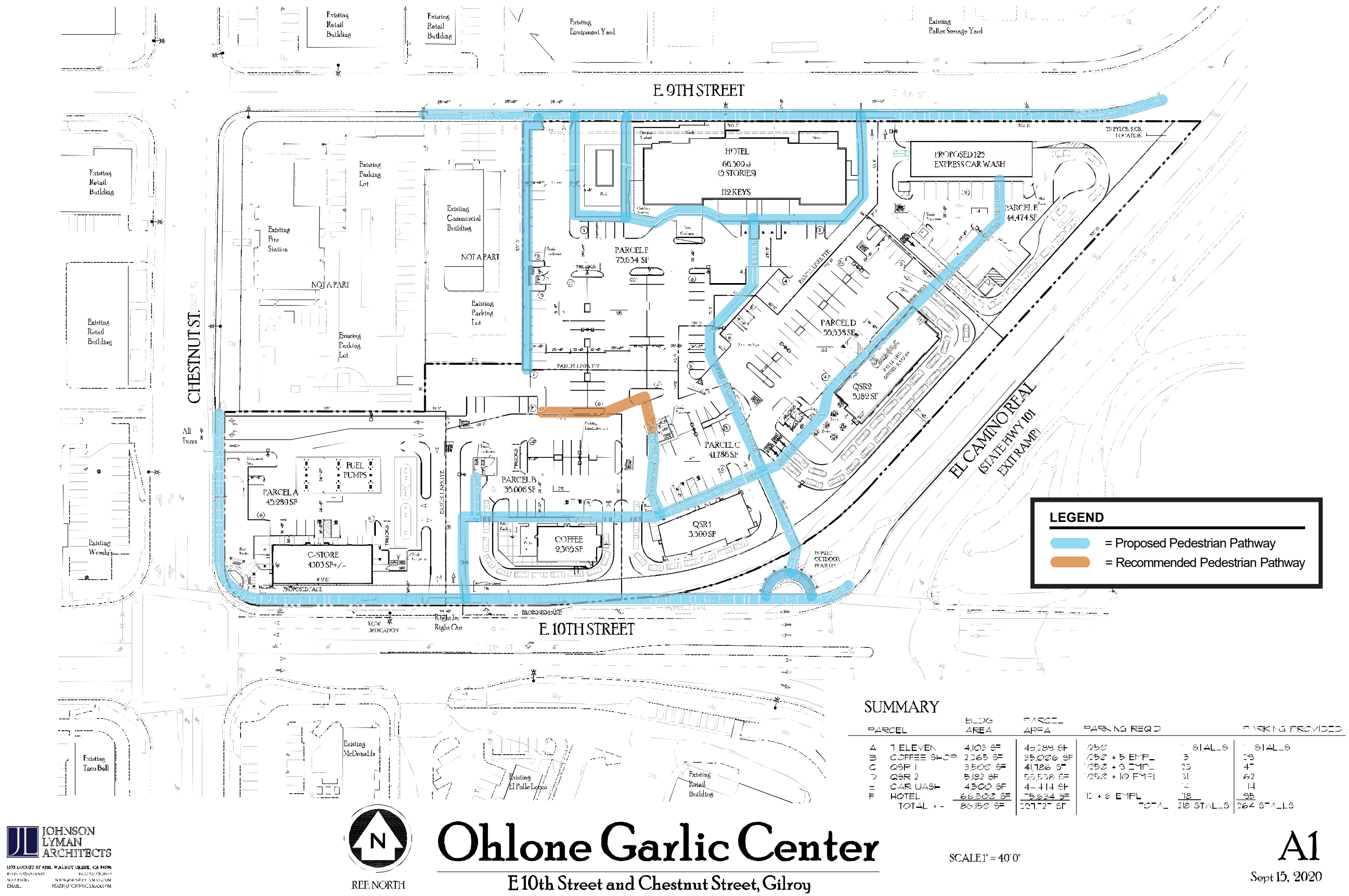
The site plan shows the new sidewalks along Tenth Street extending into the project site at the Tenth Street driveway and from a public outdoor feature at the northwest corner of the US 101 Southbound Ramps/Tenth Street intersection (southeast corner of the project site). Pedestrian connections from the Ninth Street sidewalk also would be provided to the hotel area, including sidewalks along the perimeter of the hotel building and along the northwest project site boundary.

The Tenth Street sidewalk extensions into the project site would connect to an east-west pedestrian pathway that would run from the Tenth Street driveway, adjacent to the proposed restaurants, to the car wash site. The sidewalk extension/pedestrian pathway from the public outdoor feature on Tenth Street also would connect to the east-west pedestrian pathway and extend into the parking area, across the main drive aisle, through the east side of the hotel parking area, and connect to the hotel. This is the only marked pedestrian crossing of the main drive aisle shown on the site plan. The pedestrian pathway would connect all on site uses with each other and with Tenth and Ninth Streets, with the exception of the gas station, where a marked connection between the gas station and the pedestrian pathway is not shown. The gas station would be connected to the rest of the project site via the sidewalks on Tenth Street.

The pedestrian pathway is shown to cross all drive-through lanes. Pavement markings at all drive aisle or drive through lane locations along the pedestrian pathway are shown on the site plan. These markings alert drivers of the pedestrian activity and concentrate pedestrian movement across travel lanes to these designated locations.

Although the proposed on-site pedestrian pathway would provide a connection between all uses on site, there is not a direct pedestrian connection shown between the parking spaces located on the west side of the hotel site/north side of the main drive aisle and the proposed uses south of the main drive aisle. Patrons to the retail uses parking within these parking spaces would most likely cross one or more drive aisles, including the main drive aisle, without the benefit of a marked crossing. Thus, it is recommended that a second marked pedestrian pathway connecting the northwest parking area to the south part of the site be considered. This pathway could be an extension of the proposed pedestrian pathway shown on the site plan between Restaurant 1 and the trash enclosure. This pathway could be extended northward across the main drive aisle to the parking island then westward along the south end of the two west hotel drive aisles/parking islands to the northwest project site boundary/parking spaces (see Figure 17). With this second marked crossing along the main drive aisle, all parking areas north of the main drive aisle would have a pedestrian connection to the proposed uses south of the main drive aisle. However, this second pedestrian crossing would require the relocation of the trash enclosure and truck parking currently being proposed along the main drive aisle north of Restaurant 1.

Figure 17
Recommended Pedestrian Pathway



As proposed, the trash enclosure could block visibility of pedestrians to drivers on the main drive aisle and the truck parking, when in used, would block access to the crossing.

Based on the proposed on-site pedestrian facilities and above recommendations, pedestrian on-site circulation would be adequate.

Parking

The projected parking demand for the proposed project was estimated based on the City of Gilroy parking requirements contained within the City of Gilroy Zoning Ordinance (Section 30, Article 31, Off-street parking requirements) and recommendations from City staff.

City of Gilroy Parking Requirements

The City of Gilroy parking code has the following off-street parking requirements for the proposed land uses:

Hotel: 1 stall for each guest room, plus 6 stalls
Convenience market (general retail): 1 stall per 250 s.f. of gross floor area
Fast-food restaurant with drive-up window: 1 parking stall for every 100 s.f. of gross floor area plus 1 stall for each shift employee
Coffee shop with drive-up window: 1 parking stall for every 100 s.f. of gross floor area plus 1 stall for each shift employee
Car wash: no information available

Per City of Gilroy staff recommendations, the proposed project should use the general retail parking rate for all commercial uses (including the restaurants) and should provide a total of 14 parking stalls to serve the car wash. Based on the City's direction and adopted parking rates, the size of the proposed project, and information contained on the site plan, the proposed project is estimated to require a total of 218 parking spaces (see Table 12). The site plan shows a total of 268 parking stalls on site, representing a surplus of 50 parking spaces.

It should be noted that the analysis of the proposed project includes a 120-room hotel. However, for the purpose of the parking estimates, a 112-room hotel (as shown on the site plan) was included. A 120-room hotel would require an additional 8 parking spaces to serve the hotel use, for a total of 226 parking spaces required for the site, well under the proposed number of parking spaces.

Americans with Disabilities Act Requirements

The Americans with Disabilities Act (ADA) requires developments to provide one accessible parking space for every 25 parking spaces provided for the first 100 parking spaces, and one additional parking space for every 50 parking spaces provided from 100 up to 200 total parking spaces. Accessible parking spaces shall be at least 96 inches (8 feet) wide and shall be located on the shortest accessible route of travel from adjacent parking to an accessible entrance. In addition, one in every 8 accessible spaces, but no less than one, shall be served by an access aisle at least 96 inches wide and shall be designated as "van accessible". It should be noted that the accessible parking spaces are not additional parking spaces, but are part of the minimum parking spaces required.

The site plan shows two accessible parking spaces at each of the restaurant and gas station sites, and a total of four accessible parking spaces to serve the hotel. No accessible parking spaces are shown on the site plan within the car wash site. Therefore, the proposed project satisfies the minimum ADA parking requirements.

Table 12
Parking Evaluation

Land Use	Size [1]	Parking Rate [2]	Number of Employees [1]	Parking Required	Parking Provided [1]	Net Difference
Hotel	112 rooms	1 stall per room + 6 stalls		118	95	-23
Convenience Market	4,103 s.f.	1 stall per 250 s.f.		17	17	0
Fast-food Restaurant with Drive-Through Window (1)	3,500 s.f.	1 stall per 250 s.f. + 1 stall per	9	23	47	24
Fast-food Restaurant with Drive-Through Window (2)	5,182 s.f.	1 stall per 250 s.f. + 1 stall per	10	31	62	31
Coffee Shop with Drive-Through Window	2365 s.f.	1 stall per 250 s.f. + 1 stall per	5	15	29	14
Car Wash [3]	4,500 s.f.	no information avaialable		14	18	4
				218	268	50

[1] Information obtained from the project site plan dated September 15, 2020.
[2] Source: City of Gilroy Zoning Ordinance Section 30.31.
Per City's direction, the applicant was allowed to utilize the general retail parking rate to estimate the required parking for the proposed restaurants and coffee shop.
[3] No information on parking requirements for car wash land use is available in the City's Zoning Ordinance. The required number of parking spaces for this use was obtained from the site plan.

Recommended Site Access and Circulation Improvements

The following recommendations are made to promote adequate site access and on-site circulation:

Provide adequate curb radii at project driveways. It is recommended that adequate curb radii are provided at the project driveways to allow emergency and larger vehicle access into the project site.

Installation of ADA-compliant curb ramps. It is recommended that ADA-compliant curb ramps be installed along the project site frontage, in particular at the intersections of Chestnut Street/Tenth Street and US 101 Southbound Ramps/Tenth Street. Marked crosswalks at the intersection of Chestnut Street and Ninth Street also are recommended.

Hotel Access. It is recommended that hotel guests be directed to use the Ninth Street driveways to access the site in an effort to reduce the amount of vehicles circulating the site. This could be accomplished by including this recommendation in the hotel directions provided to guests with the check-in information.

Truck Access. The site must be designed to allow all vehicular access and circulation within the site. Drive aisle widths and curb radii must be wide enough to accommodate the larger travel path associated with larger trucks, including emergency vehicles, delivery trucks, and garbage trucks.

Pedestrian On-Site Circulation. It is recommended that a second marked pedestrian pathway connecting the northwest parking area to the south part of the site be considered. This pathway could be an extension of the proposed pedestrian pathway shown on the site plan between Restaurant 1 and the trash enclosure. However, this second pedestrian crossing would require the relocation of the trash enclosure and truck parking currently being proposed along the main drive aisle north of Restaurant 1.

Bicycle Circulation

Various bicycle facilities exist in the vicinity of the project site, including bike lanes (Class II bikeways) along Chestnut Street, Tenth Street, Eigleberry Street, Church Street, and Camino Arroyo.

The Bicycle Transportation Plan contained in the City of Gilroy General Plan, the City of Gilroy Bicycle/Pedestrian Transportation Plan, and the City of Gilroy Trails Master Plan indicate that a variety of bicycle facilities are planned in the City of Gilroy, some of which would serve the study area. Of the planned facilities, those relevant to the project include:

Planned Class II bikeways:

- Automall Parkway – along its entire length
- Pacheco Pass Highway – between US 101 and Holsclaw Road
- Monterey Road – between Tenth Street and Luchessa Avenue
- Church Street – between Tenth Street and Luchessa Avenue

Planned Class III bikeways:

- Tenth Street – between US 101 and Monterey Road

Project's Effect on Bicycle Facilities

The proposed project would increase the demand on bicycle facilities in the vicinity of the project site. The potential demand could be served by the various bicycle facilities available in the vicinity of the project site. However, currently there are not bicycle facilities along Tenth Street in the vicinity of the project site. With implementation of the planned bicycle facilities, in addition to the existing facilities, the project site would be served directly by the planned bicycle facilities along Automall Parkway and Tenth Street and connect to numerous other bicycle facilities throughout town. The project site shows bike racks next to all proposed buildings, with the exception of the hotel.

Although the City of Gilroy currently does not have requirements for bicycle parking, VTA recommends bicycle-parking rates for new developments in their *Bicycle Technical Guidelines*, revised in December 2012. According to VTA's recommended rates, the proposed land uses should strive to provide the following number of bicycle parking spaces:

Hotels: one Class I (bike lockers) bike parking space for every 30 rooms plus one Class I bike parking space for every 30 employees.
Retail sales/shopping center: one Class I bike parking space for every 30 employees plus one Class II (bike racks) bike parking space for every 6,000 s.f. of retail space.
Restaurants: one Class I bike parking space for every 30 employees plus one Class II bike parking space for every 3,000 s.f. of retail space.

No recommended bicycle rates are available for car wash land use. Based on the above rates, the project size, and the assumptions regarding employees presented in the parking analysis, the proposed project (not including the car wash) should provide 9 Class I (bike lockers) and 6 Class II (bike racks) bicycle parking spaces.

Recommended Bicycle Facility Improvements

The following recommendations are made to promote non-auto modes of transportation in the City and to accommodate bicycle travel to and from the project site:

Install Bicycle Parking Facilities. It is recommended that the proposed project provide adequate bicycle parking supply on site, based on VTA's recommends bicycle-parking rates, to serve the potential demand of the project. Based on VTA's bicycle parking supply recommendations, the proposed project should provide 9 Class I (bike lockers) and 6 Class II (bike racks) bicycle parking spaces.

Pedestrian Circulation

As described in the previous pedestrian access section (discussed earlier within this chapter), existing pedestrian facilities in the vicinity of the project site include sidewalks and crosswalks with pedestrian phasing at signalized intersection. Sidewalks are found along both sides of Tenth and Chestnut Streets in the vicinity of the project site. However, some of the streets within the project area have missing sidewalks along one or both sides of the street, including Ninth Street, along the northern project site frontage. Crosswalks are also missing at the intersection of Chestnut street and Ninth Street, and ADA-compliant curb ramps are missing at all adjacent intersections.

Project's Effect on Pedestrian Facilities

It can be expected that new pedestrian traffic would be generated by the proposed project. The project site is located within what would be considered a walking distance (0.5-1 mile) from various commercial, industrial, and residential uses. Specifically, the nearest bus stops to the project site and the Alexander Station apartments are located along Tenth Street, approximately 800 and 1,000 feet west of the project site, respectively, and the Gilroy Transit Center is located approximately half-a-mile northwest of the project site. These existing uses potentially could generate pedestrian traffic to the project site. Available sidewalks and crosswalks at intersections along Tenth Street and Monterey Road would provide a connection between the project site and the existing pedestrian destinations.

Overall, the available pedestrian facilities in the vicinity of the project site, proposed improvements along the project frontage, and potential curb ramp improvements, would adequately serve the potential pedestrian demand.

Recommended Pedestrian Circulation Improvements

The following recommendations are made to promote pedestrian travel to and from the project site:

Upgrade Curbs Ramps to ADA Standards. It is recommended that curb ramps at the intersection of Chestnut Street/Tenth Street be upgraded to comply with ADA standards.

Installation of Crosswalks. It is recommended that crosswalks and ADA-compliant curb ramps be installed at the intersection of Chestnut Street/Ninth Street.

Transit Service

The project site is directly served by Local Bus Route 84, which provides weekday and weekend service between the Gilroy Transit Center and Saint Louise Regional Hospital, with a bus stop at the intersection of Alexander Street/Tenth Street, approximately 800 feet west of the project site.

Additional transit services are provided at the Gilroy Transit Center, located in Downtown Gilroy, approximately half a mile northwest of the project site.

Project's Effect on Transit Services

Although no reduction to the project trip generation estimates was applied due to transit services, it can be assumed that some of the project trips could be made by public transportation. Applying an estimated three percent transit mode share, which is probably the highest that could be expected for the project, to the local project trips equate to approximately 8 to 11 new transit riders during the peak hours. The estimated number of new transit riders to the proposed project could be served by the existing bus line currently serving the project site. However, the limited service area covered by the existing transit route and the hour long headways could discourage potential transit users from using public transportation to access the site.

6. Conclusions

This transportation analysis has been prepared in accordance with the standards and methodologies set forth by the City of Gilroy, the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program's *Transportation Impact Guidelines* (October 2014), and by the California Environmental Quality Act (CEQA).

In adherence to SB 743, the effects and impacts to the transportation network as the result of the proposed project were evaluated based on VMT. In addition to the evaluation of VMT, this transportation study also includes level of service analysis to evaluate the effects of the project on the citywide transportation system, including intersections, freeway segments, and freeway ramps. The level of service analysis is presented to determine conformance to General Plan transportation policies. The determination of project impacts per CEQA requirements is based solely on the VMT analysis.

CEQA VMT Evaluation Results

The VMT analysis considers OPR's recommendation of a net increase in total VMT from baseline conditions as the threshold to identify potential VMT impacts for commercial/retail projects.

The results of the VMT evaluation indicate that, with implementation of the proposed project, the citywide total VMT is projected to decrease by approximately 103 VMT per day from baseline conditions. Because the proposed project would result in a decrease in citywide VMT, the proposed project would not result in a significant CEQA transportation impact, based on the threshold of significance for retail uses recommended by OPR.

Roadway Capacity Analysis Results

Intersection Level of Service Analysis Results

Existing Intersection Level of Service Analysis

The results of the intersection level of service analysis under existing conditions indicate that the following intersection currently operates deficiently during the AM peak-hour:

8. Princevalle Street and Tenth Street (LOS D – AM peak-hour)

Background Plus Project Intersection Level of Service Analysis

The results of the intersection level of service analysis show that, based on City of Gilroy definition of operational deficiencies at signalized intersections, the project would not create a level of service deficiency at any of the study intersection.

Cumulative Plus Project Intersection Level of Service Analysis

The results of the intersection level of service analysis show that the project would contribute to a cumulative operational deficiency at the following intersection, based on City of Gilroy definition of operational deficiencies at signalized intersections:

8. Princevalle Street and Tenth Street (LOS D – AM & Sat, LOS F – PM;
Project deficiency: PM and Saturday peak hours)

Freeway Segment Evaluation

The proposed project is not projected to add traffic representing one percent (1%) or more of the segments' capacity to any of the study freeway segments, therefore, the proposed project would not create a level of service deficiency at any of the study freeway segments.

Freeway Ramp Analysis Results

Based on the calculated volume-to-capacity (V/C) ratios, all of the study freeway ramps currently operate at acceptable levels. Under background plus project conditions, based on the ramp capacities and traffic volume projections, it is projected that all of the study freeway ramps would continue to operate at acceptable levels.

Intersection Operations Analysis Results

The existing maximum queue length for all of the above movements is estimated to be able to accommodate within the available queue storage capacity for each of the movements during the study peak hours, with the exception of the following three movements:

1. Monterey Road and Tenth Street – Westbound left-turn movement

3. Chestnut Street and Tenth Street – Eastbound Left-turn movement

3. Chestnut Street and Tenth Street – Westbound Left-turn movement

Projected Deficiencies and Possible Improvements

Described below are the project's contribution to projected deficiencies and/or possible improvements to improve operating conditions.

8. Princevalle Street and Tenth Street (Level of Service Deficiency)

The projected deficiency at this intersection is caused cumulatively by the proposed project and all other approved and pending projects in the City of Gilroy. Therefore, the project must make a fair-share contribution toward future improvements that would restore operations at the intersection to acceptable levels.

1. Monterey Road and Tenth Street – Westbound Left-turn (Queue Deficiency)

The project deficiency at this intersection could be improved by extending the existing westbound left-turn pocket an additional 50 feet. However, because of the at-grade railroad crossing located along Tenth Street (approximately 225 feet east of Monterey Road), the existing westbound left-turn pocket can only be extended an additional 30 feet, for a total pocket length of approximately 185 feet (plus a 40-foot bay taper, same length as the existing taper). This improvement would require restriping of the center median along Tenth Street.

3. Chestnut Street and Tenth Street – Eastbound Left-turn (Queue Deficiency)

The project deficiency at this intersection could be improved by extending the existing eastbound left-turn pocket by a minimum of 25 feet. The existing eastbound left-turn pocket can be extended the required 25 feet (although a minimum of 50 feet is recommended); however, it will require the partial removal of the existing landscaped center median, including two trees.

3. Chestnut Street and Tenth Street – Westbound Left-turn (Queue Deficiency)

The project deficiency at this intersection could be improved with the addition of a second westbound left-turn lane. Providing a second westbound left-turn lane at this location will require the widening of Tenth Street along the project site frontage. Potentially, the south side of Tenth Street also may require to be widened in order for the east leg of the intersection to align with the west leg of the intersection.