Wisteria Lane General Plan Amendment

Transportation Impact Analysis

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Executive Summary

This study evaluates the potential transportation impacts of the land use changes proposed as a part Vesting Tentative Tract Map 3069 located at the east end of Wisteria Lane in Paso Robles.

The following study intersections are evaluated during the weekday morning (7-9 AM) and evening (4-6 PM) time periods under Existing, Near-Term, and Cumulative conditions with and without the project:

1. Wisteria Lane/Golden Hill Road
2. Dallons Drive/Golden Hill Road
3. State Route 46 E/Golden Hill Road (Caltrans intersection)

The project is expected to generate 4,452 daily trips, 614 AM peak hour trips, and 603 PM peak hour trips on a typical weekday.

The City's Transportation Impact Analysis Guidelines and Caltrans criteria are applied to identify transportation deficiencies, summarized below.

Traffic Operations: The following deficiencies and improvements are noted:

- Wisteria Lane/Golden Hill Road: Long westbound queues are expected during the PM peak hour with the project in place. Installation of a dedicated northbound right-turn lane or a single lane roundabout would reduce queues and provide acceptable operations. A traffic signal would also reduce queuing and provide acceptable operations, but the peak hour signal warrant was not met.
- Dallons Drive/Golden Hill Road: This intersection would operate unacceptably under Cumulative conditions with the project in place. Installation of a traffic signal or multi-lane roundabout would provide acceptable operations.
- SR 46/Golden Hill Road: The addition of project traffic would worsen PM peak hour operations to LOS D under Near Term Plus Project, and LOS F under Cumulative Plus Project conditions. Per the Caltrans Corridor Study, this remains a low priority location for future improvements and improvements should focus on local parallel routes funded by the City's traffic impact fee. The City's Traffic Impact Fee program funds improvements to parallel local routes and the project provides an offer of dedication enabling the connection of Airport Road to Wisteria Lane. This will provide access to the Airport without relying on SR 46 and will improve parallel routes.

Bicycle and Pedestrian Facilities: The project would provide shared 13 foot bike/parking lanes along major roadways. This conforms to the City's Bike Master Plan, so no changes are recommended.

Transit: The project would not overburden area transit service. The project should coordinate with City staff to determine the appropriate locations and amenities for new transit stops near the site to accommodate future service expansion.

Contents

Introduction

This study evaluates the potential transportation impacts of Vesting Tentative Tract Map 3069 and an associated General Plan Amendment in Paso Robles. The project site consists of roughly 60 acres located east of the existing end of pavement on Wisteria Lane, north of State Route 46 E (SR 46) and west of Airport Road.

The project's location and study intersections are shown on Figure 1 and Figure 2 shows the project's site plan.

The following intersections are evaluated during the weekday morning (7-9 AM) and evening (4-6 PM) time periods:

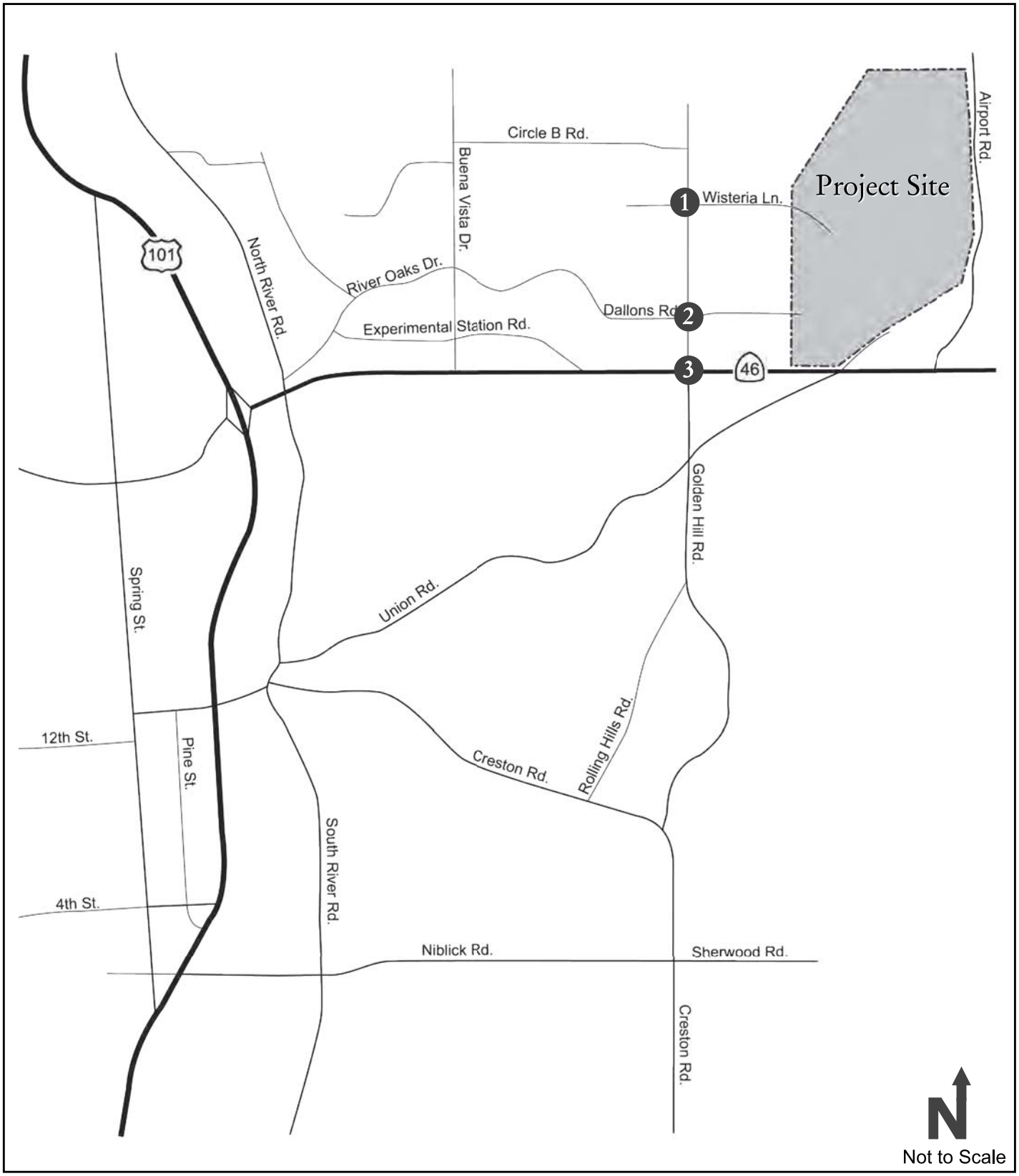
1. Wisteria Lane/Golden Hill Road
2. Dallons Drive/Golden Hill Road
3. State Route 46 E/Golden Hill Road (Caltrans intersection)

The study intersections are evaluated under these scenarios:

1. **Existing Conditions** reflect traffic counts collected in May 2014 and the existing transportation network.
2. **Existing Plus Project Conditions** add project generated traffic to Existing Conditions volumes.
3. **Near Term Conditions** add approved and pending projects in the study area to Existing Conditions volumes.
4. **Near Term Plus Project Conditions** add project traffic to Near Term Conditions volumes.
5. **Cumulative Conditions** reflect future traffic conditions developed using the City's Travel Demand Model as applied in the SR 46/Union Road PSR.
6. **Cumulative Plus Project Conditions** add project traffic to Cumulative Conditions volumes.

A description of the analysis approach follows Figures 1 and 2.

Figure 1: Project and Study Locations



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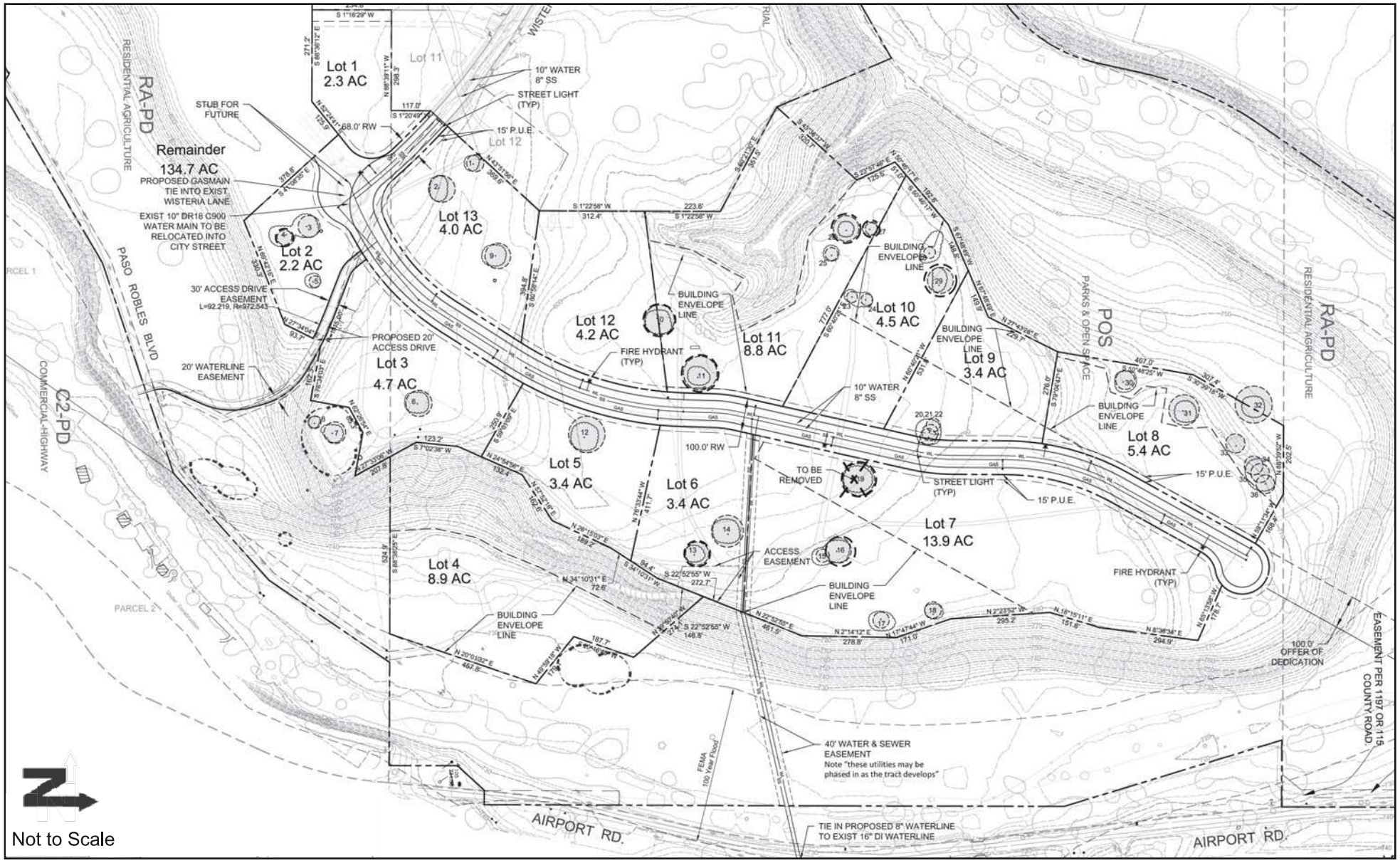
Legend:

7 - Study Intersection

November 2015

Wisteria Lane GPA

Figure 2: Site Plan



Not to Scale

Source: Wallace Group

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ANALYSIS METHODS

The analysis approach was developed based on the City of Paso Robles' *Transportation Impact Analysis Guidelines* and Caltrans standards for intersections on SR 46.

City Facilities

The City's TIA Guidelines provide criteria for identifying mobility deficiencies reflecting the City's Circulation Element Goals. While vehicular level of service (LOS) is not identified as a mobility deficiency criteria for City controlled intersections, vehicular queues that exceed existing or planned lengths of turn pockets are a deficiency criteria. LOS calculations are also a component of the evaluation criteria for stop-controlled intersections.

In order to evaluate queuing and stop-controlled intersection LOS the study intersections have been analyzed with the Synchro 9 software package applying the 2010 Highway Capacity Manual (HCM) methods. The 95th percentile queues are reported, which reflect the queue length that will not be exceeded 95% of the time.

The City's TIA Guidelines specify mobility deficiency criteria for a variety of study elements. Table 2 summarizes these criteria, which are used to identify deficiencies.

Table 1: City of Paso Robles Mobility Deficiency Criteria[1]

Study Element	Deficiency Determination
On-site Circulation and Parking	Project designs fail to meet City or industry standard guidelines, fail to provide adequate truck access, will result in unsafe condition, or will create parking demand or supply above code requirement.
Pedestrian, Bicycle, Transit Facilities	Project fails to provide safe and accessible connections, conflicts with adopted plans, or adds trips to facility that doesn't meet current design standards.
Traffic Operations	Project causes vehicle queues that exceed turn pocket lengths, increases safety hazards, or causes stop-controlled intersection to operate below LOS D and meet signal warrant.

1. Summary based on Table 5 of City's Transportation Impact Guidelines.

Caltrans Facilities

Caltrans controls the intersections along SR 46 and relies on LOS to determine deficiencies. Accordingly, Caltrans intersections have been evaluated using LOS criteria as contained in the 2010 HCM. Vehicular level of service is based on control delay, which is the total of time spent decelerating when approaching an intersection, time spent stopped or moving in a queue at an intersection, and time spent accelerating after an intersection.

The level of service thresholds relevant to the Caltrans controlled intersection in this study are presented in Table 2. Unsignalized intersections have lower delay thresholds because users experience more uncertainty than at signals, where drivers typically expect higher levels of congestion and more predictable levels of delay.

Caltrans strives to maintain operations at the LOS C/D threshold on state-operated facilities. If an existing State Highway facility is operating at LOS D, E, or F the existing service level should be maintained.

Table 2: Vehicular Level of Service Thresholds

Signalized Intersections[1]		Stop Sign Controlled Intersections[2]	
Control Delay (seconds/vehicle)	**Level of Service**	**Control Delay (seconds/vehicle)**	**Level of Service**
≤ 10	A	≤ 10	A
> 10 - 20	B	> 10 - 15	B
> 20 - 35	C	> 15 - 25	C
> 35 - 55	D	> 25 - 35	D
> 55 - 80	E	> 35 - 50	E
> 80	F	> 50	F

1. Per Exhibit 18-4 of the 2010 *Highway Capacity Manual.*
2. Per Exhibits 19-1 and 20-2 of the 2010 *Highway Capacity Manual.*

Existing Conditions

This section describes the existing transportation system and current operating conditions in the study area.

EXISTING ROADWAY NETWORK

US Highway 101 is a north-south facility connecting Los Angeles to San Francisco. In the vicinity of the project it is a four-lane freeway with a full access interchange at SR 46.

State Route 46 is an east-west facility connecting the Central Valley with the Central Coast. In the vicinity of the project it consists of four lanes with at-grade intersections.

Golden Hill Road is a north-south arterial with two travel lanes north of Dallons Drive and four travel lanes between SR 46 and Dallons Drive.

Dallons Drive is a two-lane east-west arterial connecting Buena Vista Drive to Golden Hill Road. West of Buena Vista Drive it becomes River Oaks Drive.

Wisteria Lane is a two-lane east-west arterial which intersects with Golden Hill Road and is currently less than one mile long.

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

Pedestrian facilities include sidewalks, crosswalks, multi-use paths, and pedestrian signals at signalized intersections. Sidewalks are provided along paved portions of Wisteria Lane and portions of Golden Hill Road. Marked crosswalks are provided across three legs of the SR 46/Golden Hill Road intersection and two legs of Dallons Drive/Golden Hill Road.

Bicycle facilities consist of multi-use paths separate from the roadway (Class I), on-street striped bike lanes (Class II), and signed bike routes (Class III). Class II bike lanes are provided on Dallons Drive.

EXISTING TRANSIT SERVICE

The Paso Express provides fixed route and dial-a-ride transit service throughout the City of Paso Robles. The dial-a-ride service provides curb-to-curb service on weekdays from 7:00 AM to 1:00 PM.

The San Luis Obispo Regional Transit Authority (RTA) provides regional fixed-route and dial-a-ride services to San Luis Obispo County. Route 9 connects the North County and the City of San Luis Obispo, with a stop at Cuesta College North campus on weekdays. RTA also operates a summer beach shuttle connecting the North County to Cayucos.

EXISTING TRAFFIC CONDITIONS

Traffic counts for weekday AM and PM peak hour conditions were collected at the study intersections in May 2014 when schools were in session. The traffic count sheets are included in Appendix A.

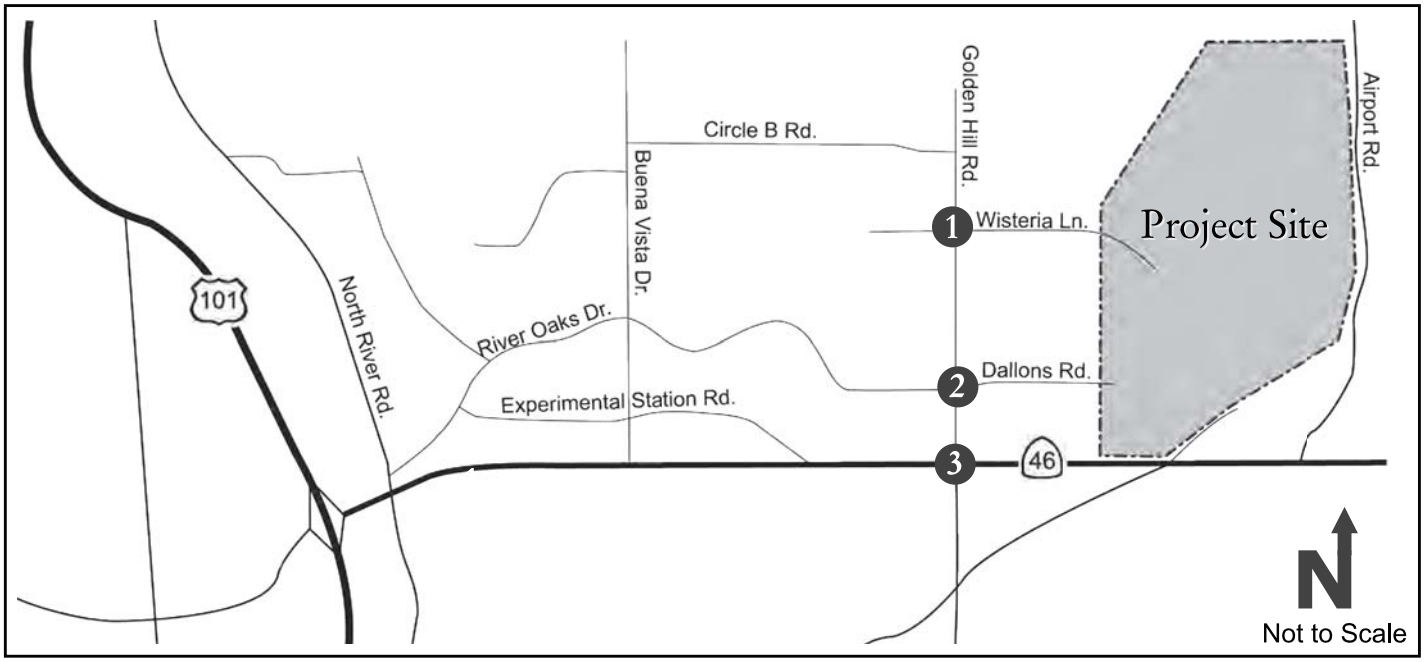
Figure 3 shows the existing peak hour traffic volumes and lane configurations. Table 3 presents the LOS for the study intersections, and the detailed calculation sheets are included in Appendix B.

Table 3: Existing Intersection Levels of Service				
Intersection	Peak Hour	Delay[1] (sec/veh)	LOS[2]	Queues Exceed Storage?
1. Wisteria Lane/	AM	2.0 (9.2)	A (A)	No
Golden Hill Road	PM	7.3 (9.8)	A (A)	No
2. Dallons Drive/	AM	4.8 (14.9)	A (B)	No
Golden Hill Road	PM	6.0 (14.8)	A (B)	No
3. State Route 46 E/	AM	20.0	B	No
Golden Hill Road	PM	21.3	C	No

1. HCM 2010 average control delay in seconds per vehide.
2. For side-street-stop controlled intersections the worst approach's delay is reported in parenthesis.

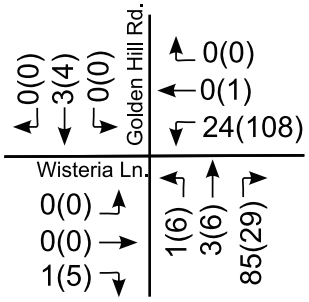
All of the study intersections operate at LOS C or better during the weekday peak hours. Field observations did not show any queue spillback issues, consistent with the analysis results.

Figure 3: Existing Peak Hour Volumes and Lane Configurations



Existing Peak Hour Volumes

1.



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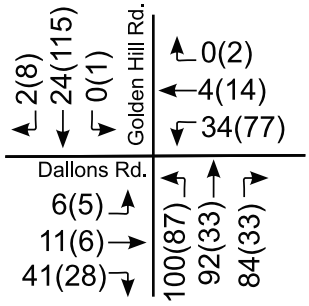

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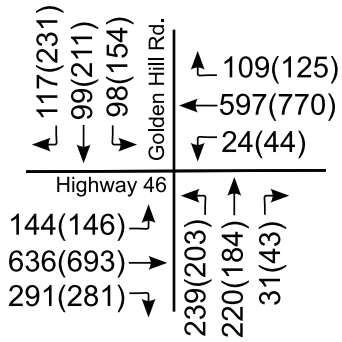
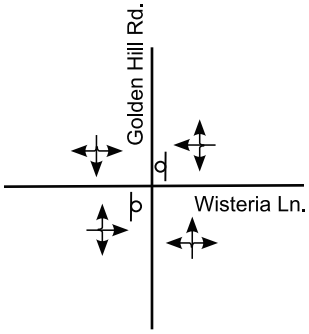


Existing Lane Configuration

1.



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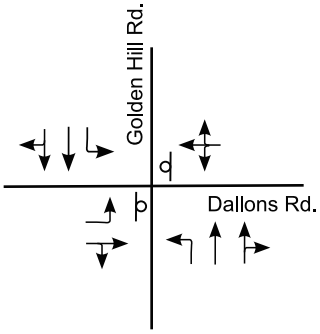

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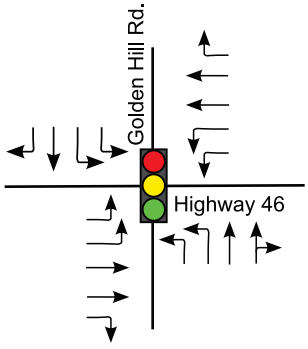

Legend:

- 7 - Study Area Intersection
- xx(yy) - AM(PM) Peak Hour Traffic Volumes
- - Traffic Signal
- - Stop Sign

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Existing Plus Project Conditions

This section evaluates the impacts of the proposed project on the surrounding transportation network, including traffic operations, bicycle, pedestrian, transit, and site access deficiencies. Existing Plus Project conditions reflect existing traffic levels plus the estimated traffic generated by the proposed project.

PROJECT TRAFFIC ESTIMATES

The amount of project traffic affecting the study intersections is estimated in three steps: trip generation, trip distribution, and trip assignment. Trip generation refers to the total number of new trips generated by the site. Trip distribution identifies the general origins and destination of these trips, and trip assignment identifies the specific routes taken to reach these origins and destinations.

Trip Generation

No specific uses are proposed as a part of the project, only generic zoning designations. The project proposes mixed amounts of Commercial/Light Industrial (C3), and Planned Industrial (PM) zoning.

Consistent with the approach taken in the City's Travel Demand Model and Circulation Element trips from the C3 zoned parcels were estimated using ITE's Business Park land use.

Trips for the PM uses were estimated using the Manufacturing land use. City staff provided an inventory of existing operational businesses on Wisteria Lane, all of which are zoned PM. Trip rates for these existing PM uses were derived using the land use inventory and traffic counts at the Wisteria Lane/Golden Hill intersection to determine the most appropriate ITE land use code for estimating trips. The Manufacturing land use provided the closest match, predicting a higher number of trips than the collected data.

The trip generation estimate is shown in Table 4.

Table 4: Project Trip Generation

				AM Peak Hour Trips			PM Peak Hour Trips		
Proposed Zoning	**Land Use**	**Size**	**Daily Trips**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Planned Industrial (PM)	Manufacturing[1]	466,900 s.f.	1,791	279	79	358	125	223	348
Commercial/ Light Industrial (C3)	Business Park[2]	183,200 s.f.	2,661	218	38	256	66	189	255
		Total Trips	**4,452**	**497**	**117**	**614**	**191**	**412**	**603**

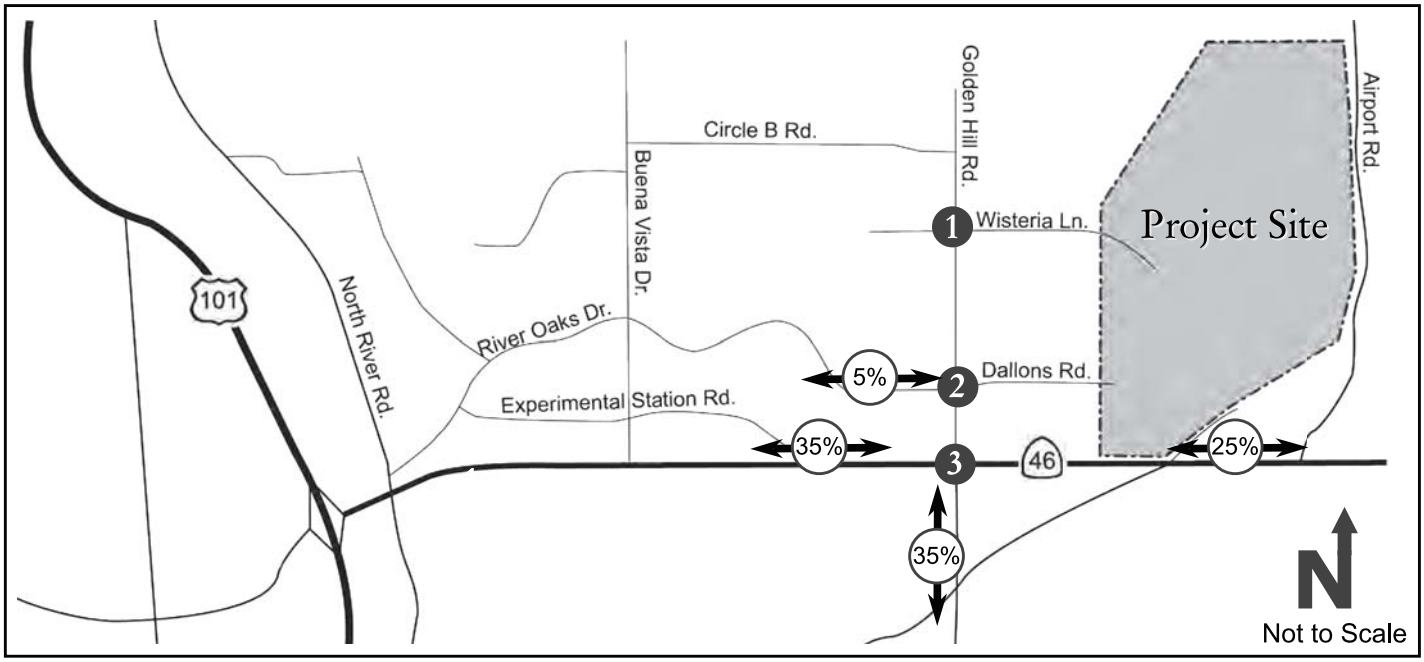
1. ITE Land Use Code #140. Fitted curve equations used.
2. ITE Land Use Code #770. Fitted curve equations used.
Source: ITE *Trip Generation Manual,* 9th Edition, 2012; CCTC, 2015.

The project is expected to generate 4,452 daily trips, 614 AM peak hour trips, and 603 PM peak hour trips on a typical weekday.

Trip Distribution and Assignment

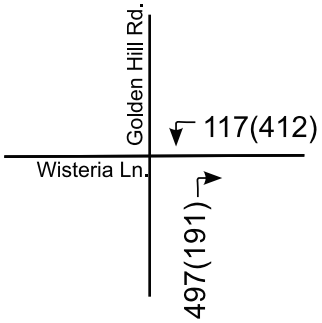
The directions of approach and departure for project trips were estimated using existing trip patterns and the locations of complementary land uses. Project trips were assigned to individual intersections based on the trip distribution percentages, and were then added to the existing traffic volumes to establish Existing Plus Project Conditions. **Figure 4** shows the trip distribution percentages, project trip assignment, and Existing Plus Project volumes.

Figure 4: Project Trip Distribution, Assignment, and Existing Plus Project Volumes



Project Trip Assignment

1.



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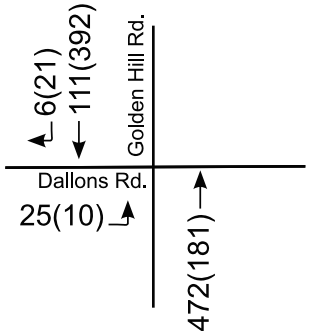

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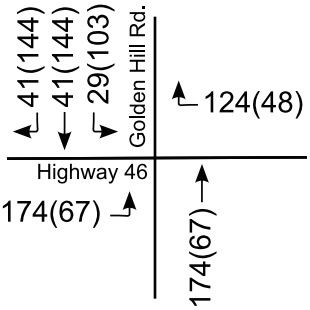
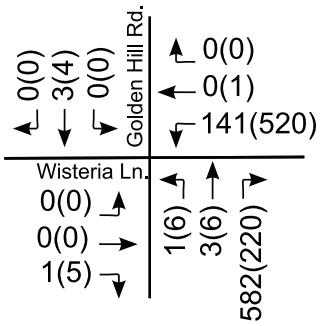


Existing Plus Project Peak Hour Volumes

1.



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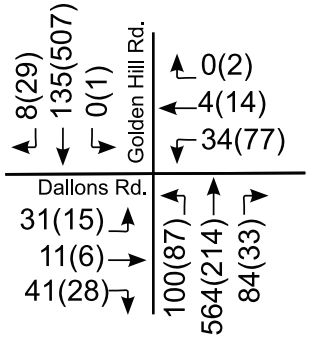

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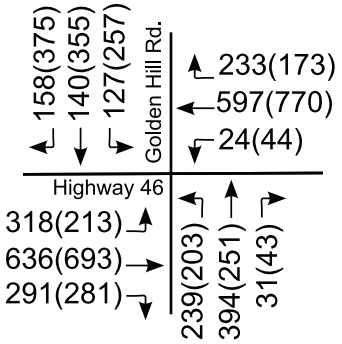

Legend:

7	- Study Area Intersection
3%	- Project Trip Distribution Percentage
xx(yy)	- AM(PM) Peak Hour Traffic Volumes

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DEFICIENCY ANALYSIS

The deficiency analysis for individual travel modes are discussed below.

Traffic Operations

Traffic operations deficiency criteria are described in the Analysis Methods section of this report. Table 5 summarizes the operating conditions under Existing and Existing Plus Project conditions.

Table 5: Existing & Existing Plus Project Intersection Levels of Service

		Existing		Existing Plus Project		
Intersection	Peak Hour	Delay[1] (sec/veh)	LOS[2]	Delay[1] (sec/veh)	LOS[2]	Queues Exceed Storage?
1. Wisteria Lane/	AM	2.0 (9.2)	A (A)	3.7 (18.9)	A (C)	No
Golden Hill Road	PM	7.3 (9.8)	A (A)	65.6 (95.8)	F (F)	**Yes[3]**
2. Dallons Drive/	AM	4.8 (14.9)	A (B)	4.3 (54.0)	A (F)	No
Golden Hill Road	PM	6.0 (14.8)	A (B)	6.8 (54.4)	A (F)	No
3. State Route 46 E/	AM	20.0	B	33.7	C	No
Golden Hill Road	PM	21.3	C	32.1	C	**Yes[3]**

1. HCM 2010 average control delay in seconds per vehide.
2. For side-street-stop controlled intersections the worst approach's delay is reported in parenthesis.
3. See Table 7 for detailed queues.

The addition of project traffic would result in excessive queuing and long delays at the Wisteria Lane/ Golden Hill Road intersection. Note that this intersection currently experiences relatively uneven flows throughout the peak hour, which results in a peak hour factor (PHF) of 0.63. An intersection with equal flow within the four 15-minute portions of an hour would have a PHF of 1; one with all of the hour's volume within a single 15-minute portion would have a PHF of 0.25.

With the project in place traffic flows are expected to become more evenly spread within the peak hour, resulting in a higher PHF. Standard industry practice assumes a PHF of 0.92 for future conditions where detailed operational characteristics are unknown. Applying a PHF of 0.92 yields a 95th percentile queue of six vehicles with the current lane configuration under Existing Plus Project conditions. Adding a northbound right turn lane would reduce the westbound queues to four vehicles with a 0.92 PHF and below 12 vehicles with a 0.63 PHF.

The Caltrans operated intersection of SR 46/Golden Hill Road experiences queue spillback for the southbound left turn lane but operates acceptably at LOS C, so no deficiencies are noted in accordance with Caltrans criteria.

Bicycles

Bicycle deficiencies would occur if the project disrupts existing or planned bicycle facilities or is otherwise incongruent with the City's Bike Master Plan. The Bike Master Plan proposes the following new bicycle facilities in the vicinity of the project:

- A Class II on-street bike lane on Golden Hill Road north of Dallons Drive, and sharrows between Dallons Drive and SR 46.
- A Class II on-street bike lane along the entire length of Wisteria Lane, Tractor Lane, and Engine Avenue.

The proposed Tentative Tract Map shows a typical cross section providing a shared 13 foot parking/bike lane. This is consistent with the Bike Master Plan's design standards.

Pedestrians

Pedestrian deficiencies would occur if the project fails to provide safe and accessible pedestrian connections between project buildings and adjacent streets, trails, and transit facilities. The typical roadway cross section shows sidewalks separated from the parking lane by a landscaped buffer, which provides adequate facilities to encourage and support walking.

Transit

Transit deficiencies would occur if the project disrupts existing or planned transit facilities or services; conflicts with City plans, guidelines, policies, or standards; or if the project adds trips to a line already operating at peak hour crush load capacity. The nearest transit stop is located on the Cuesta College campus, more than one mile from the project site. The project would not overburden existing transit service or conflict with future transit service expansions.

On-Site Circulation

On-site circulation deficiencies would occur if project designs fail to meet appropriate standards, fail to provide adequate truck access, or would result in hazardous or unsafe conditions.

The proposed site plan is shown on **Figure 2**. Project access will be provided via Wisteria Lane, with secondary emergency access provided via the connecting road.

The Connecting Road is identified as a future 2-lane divided arterial. Page CE-15 of the Circulation Element lists development policies, and item 12 notes that developers should be responsible for "Limited access on all arterials." This is consistent with industry standard treatment of arterial roadways, which typically carry high levels of traffic. Additional access points or turning movements add friction to the system, diminishing traffic flow efficiency and increasing the likelihood of collisions.

The planning-level nature of the site plans available at this time do not show driveways serving individual parcels. It is recommended that the number of driveways be minimized to the extent possible to reduce the number of conflict points along this future arterial consistent with the Circulation Element.

Near Term Traffic Conditions

Near Term conditions reflect the addition of approved and pending projects in the study area to Existing Conditions volumes. The following near-term projects are included in this scenario:

- Ayers Hotel- 190 hotel rooms, 36 extended stay units, and related amenities on the northeast corner of Buena Vista Drive and Experimental Station Road.
- La Quinta Inn- 30 additional hotel rooms and related amenities at 2615 Buena Vista Drive.
- Buena Vista Apartments- 142 apartment units located at 802 Experimental Station Road.
- River Oaks- The Next Generation- 144 active adult homes, 127 single family homes, community center, and fitness/wellness center located north of River Oaks Drive and east of River Road.
- Tract 2887- 51 single-family homes located at the southeast corner of River Oaks Drive and Experimental Station Road.
- RV Park- 332 spaces located at the north end of Golden Hill Road
- Wine Storage Building- 66,000 s.f. located at 2261 Wisteria Lane
- San Antonio Winery Processing Facility-126,000 s.f. located on Wisteria Lane.
- Hilton Garden Inn- 166 hotel rooms and related amenities located at 2348 Golden Hill Road
- San Antonio Winery Development-Tasting room, restaurant, four residences, and retail in addition to existing facilities at 2610 Buena Vista Drive
- Chrysler/Jeep Dealership- 29,800 s.f. located at the northeast corner of Golden Hill Road and Tractor Street.

Traffic volumes for the Ayers Hotel, Buena Vista Apartments, River Oaks, and Hilton Golden Hill projects were obtained from the traffic studies prepared for those projects. Traffic volumes for La Quinta Inn, Tract 2887, the RV park, wine storage building, San Antonio Winery Processing Facility, San Antonio Winery Development, and dealership were estimated using standard ITE rates. The roadway network was assumed to remain the same as under Existing conditions.

DEFICIENCY ANALYSIS

Project volumes were added to Near Term conditions to yield Near Term Plus Project conditions as shown on **Figure 5**. Table 6 summarizes the traffic conditions under Near Term and Near Term Plus Project conditions, with queues detailed in Table 7.

Note that a peak hour factor (PHF) of 0.92 was assumed for the study intersections under Near Term and Near Term Plus Project conditions. This PHF adjustment results in some intersections showing a reduction in delay or queuing under Near Term conditions compared to Existing conditions.

Table 6: Near Term & Near Term Plus Project Intersection Levels of Service						
		Near Term		Near Term Plus Project		
Intersection	Peak Hour	Delay[1] (sec/veh)	LOS[2]	Delay[1] (sec/veh)	LOS[2]	Queues Exceed Storage?
1. Wisteria Lane/	AM	1.8 (10.0)	A (B)	3.0 (16.0)	A (C)	No
Golden Hill Road	PM	7.1 (11.7)	A (B)	45.9 (71.2)	E (F)	**Yes[3]**
2. Dallons Drive/	AM	3.8 (18.3)	A (C)	4.5 (60.8)	A (F)	No
Golden Hill Road	PM	4.3 (17.7)	A (C)	5.4 (50.4)	A (F)	No
3. State Route 46 E/	AM	21.5	C	29.6	C	No
Golden Hill Road	PM	26.6	C	**38.4**	**D**	**Yes[3]**

1. HCM 2010 average control delay in seconds per vehide.
2. For side-street-stop controlled intersections the worst approach's delay is reported in parenthesis.
3. See Table 7 for detailed queues.

Study intersections operate unacceptably at two locations with project traffic.

- The westbound 95th percentile queues at the Wisteria Lane/Golden Hill Road would exceed eighteen vehicles during the PM peak hour.
- The level of service at SR 46/Golden Hill Road would worsen from LOS C to LOS D in the PM. The 95th percentile queues in the southbound left turn lane spill out of the turn pockets.

Queues are detailed in Table 7. Note that some queue lengths shorter under Near Term conditions when compared to Existing conditions due to the PHF adjustment described above.

Table 7: 95th Percentile Queues							
				95th Percentile Queues (feet)			
Intersection	Direction	Storage Length	Peak Hour	Existing	Existing+ Project	Near Term	Near Term+ Project
1. Wisteria Lane/	Westbound	N/A	AM	<20	63	<20	43
Golden Hill Road	Approach		PM	<20	**610**	38	**465**
2. Dallons Drive/	Westbound	N/A	AM	<20	45	<20	55
Golden Hill Road	Approach		PM	25	98	25	78
3. State Route 46 E/ Golden Hill Road	Eastbound Left	550 ft	AM	72	#207	104	188
			PM	76	#158	98	147
	Westbound Left	460 ft	AM	20	20	27	28
			PM	30	35	42	47
	Northbound Left	160 ft	AM	102	108	125	137
			PM	94	109	126	145
	Southbound Left	130 ft	AM	54	#74	68	87
			PM	79	**#198**	103	**173**

1. Queue length that would not be exceeded 95 percent of the time. Queues are reported only for turning movements where queues exceed storage capacity.
2. Westbound approach to Golden Hill Road at Wisteria Lane and Dallons Drive is a single shared lane, so no storage length is reported. Queues would block all movements.
Movements with queues exceeding storage are highlighted with **bold** numbers.

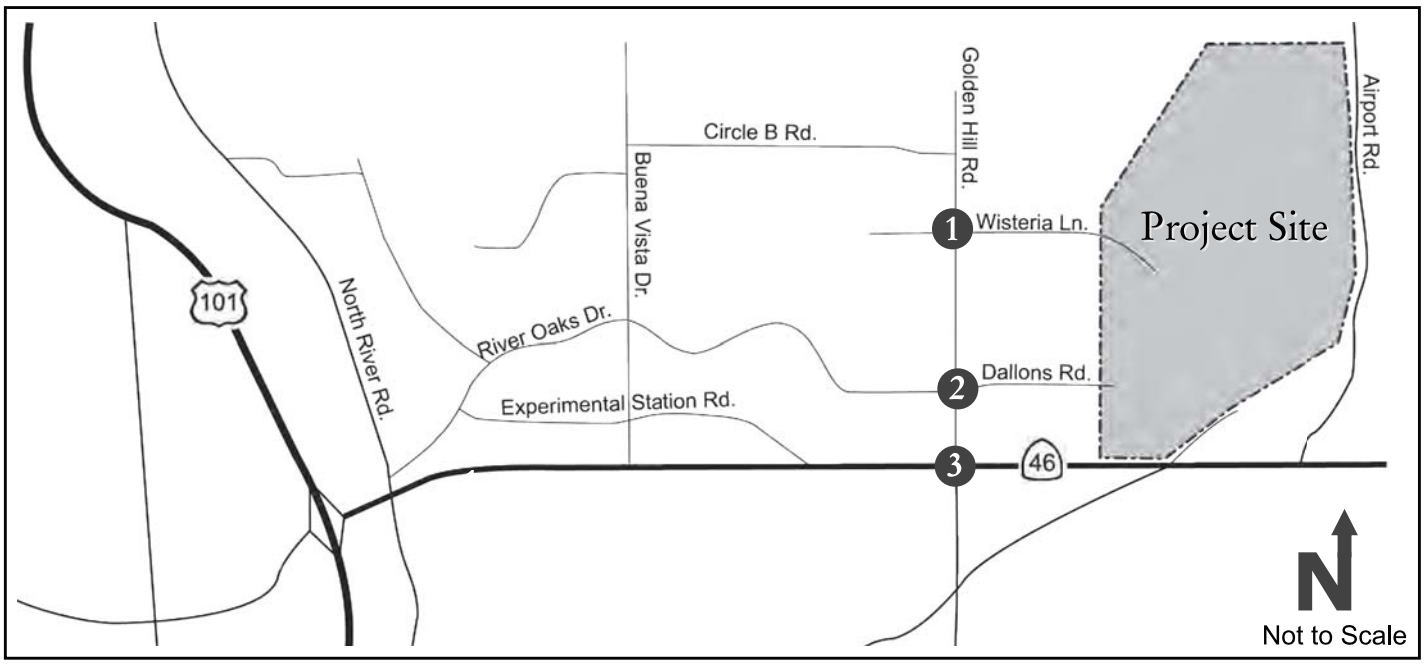
Potential mitigations for the Wisteria Lane/Golden Hill Road intersection under Near Term Plus Project conditions include:

- Adding a dedicated northbound right turn lane would provide overall LOS C operations with westbound 95th percentile queues of ten vehicles during the PM peak hour.
- A single lane roundabout would provide LOS B operations and 95th percentile queues of six vehicles for the westbound approach during the PM peak hour.

- A traffic signal would provide LOS A operations and westbound 95th percentile queues of under six vehicles during the PM peak hour. However, the peak hour signal warrant would not be met.

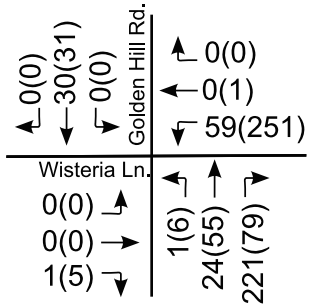
The SR 46/Golden Hill Road intersection has been deemed a low priority for improvement for Caltrans, with improvement of parallel route a higher priority. For informational purposes installation of a southbound right turn overlap phase would improve operations under Near Term plus Project conditions to LOS C.

Figure 5: Near Term and Near Term Plus Project Peak Hour Volumes



Near Term Peak Hour Volumes

1.



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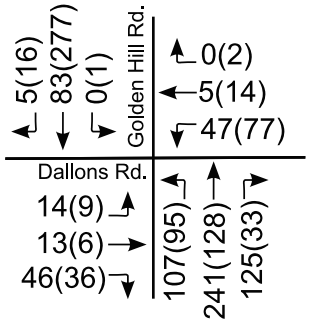

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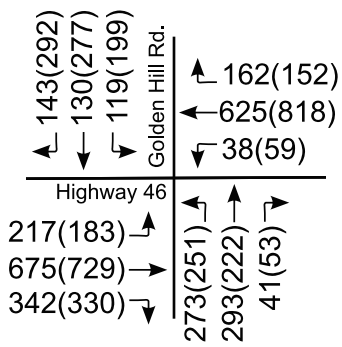
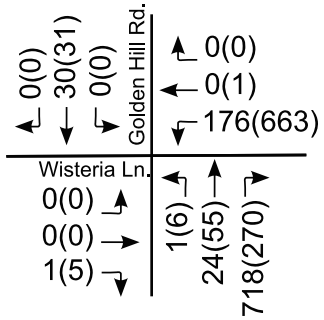


Near Term Plus Project Peak Hour Volumes

1.



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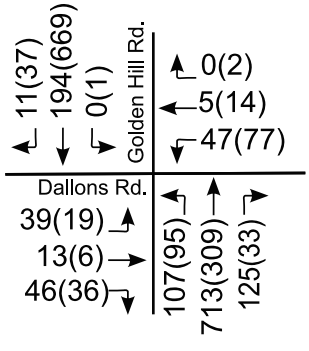

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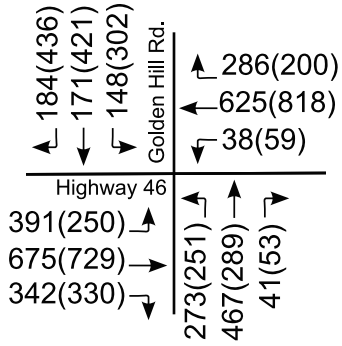

Legend:

7 - Study Area Intersection

xx(yy) - AM(PM) Peak Hour Traffic Volumes

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Cumulative Traffic Conditions

Cumulative conditions reflect future year traffic volumes and planned roadway improvements Cumulative and Cumulative Plus Project conditions are discussed in this section.

CUMULATIVE ROADWAY NETWORK

The Cumulative conditions analysis reflects planned roadway capacity expansions identified in the City's Circulation Element, which calls for the development of routes parallel to SR 46 among other projects. Wisteria Lane would be extended east to the future Connecting Road. The Connecting Road would be realigned to form the north leg of the planned SR 46/Union Road intersection.

The City and Caltrans have completed a Project Study Report for the SR 46/Union Road intersection and are in the process of initiating a Project Approval and Environmental Document (PAED) which will evaluate an overcrossing, undercrossing, full interchange, and no-build alternative. Per City staff direction, an overcrossing was assumed for Cumulative conditions. Once the PAED document is completed and an alternative is selected for design, the analysis may be revisited.

No improvements were assumed at the four study intersections, so the study intersection lane configurations have not been changed from Existing conditions.

CUMULATIVE TRAFFIC FORECASTS

The City's Travel Demand Model was developed to forecast future travel patterns in the City. The Model incorporates future improvements identified in the Circulation Element and projected land uses both locally and regionally to output future year traffic forecasts. The Highway 46/Union Road Project Study Report further refined the City's Model to forecast traffic in the study area.

Cumulative No Project traffic forecasts were obtained from the Project Study Report overcrossing only alternative, adjusted to reflect the more recent counts collected for the Wisteria Lane project.

A new Union Road overcrossing would serve project traffic destined south of SR 46. Accordingly, a portion of project traffic was assigned to the new overcrossing instead of the Golden Hill Road corridor. This reduces the project traffic using the study intersections on Golden Hill Road. Project traffic was added to Cumulative conditions volumes to yield Cumulative Plus Project conditions as shown in **Figure 6**.

CUMULATIVE TRAFFIC CONDITIONS

Table 8 summarizes Cumulative traffic conditions with and without the project.

Table 8: Cumulative & Cumulative Plus Project Intersection Levels of Service

		Cumulative		Cumulative Plus Project		
Intersection	Peak Hour	Delay[1] (sec/veh)	LOS[2]	Delay[1] (sec/veh)	LOS[2]	Queues Exceed Storage?
1. Wisteria Lane/ Golden Hill Road	AM	5.7 (13.7)	A (B)	12.3 (45.7)	B (E)	**Yes**[3]
	PM	9.6 (15.4)	A (C)	82.1 (136.5)	F (F)	**Yes**[3]
2. Dallons Drive/ Golden Hill Road	AM	21.3 (82.7)	C (F)	98.8 (>200)	F (F)	**Yes**[3]
	PM	67.0 (>200)	F (F)	>200 (>200)	F (F)	**Yes**[3]
3. State Route 46 E/ Golden Hill Road	AM	**42.0**	**D**	**54.0**	**D**	**Yes**[3]
	PM	**70.3**	**E**	**88.5**	**F**	**Yes**[3]

1. HCM 2010 average control delay in seconds per vehicle.
2. For side-street-stop controlled intersections the worst approach's delay is reported in parenthesis.
3. 95th percentile volume exceeds capacity in both cumulative and cumulative plus project, queue may be longer.

All study intersections operate unacceptably during the AM and PM peak hours with the project.

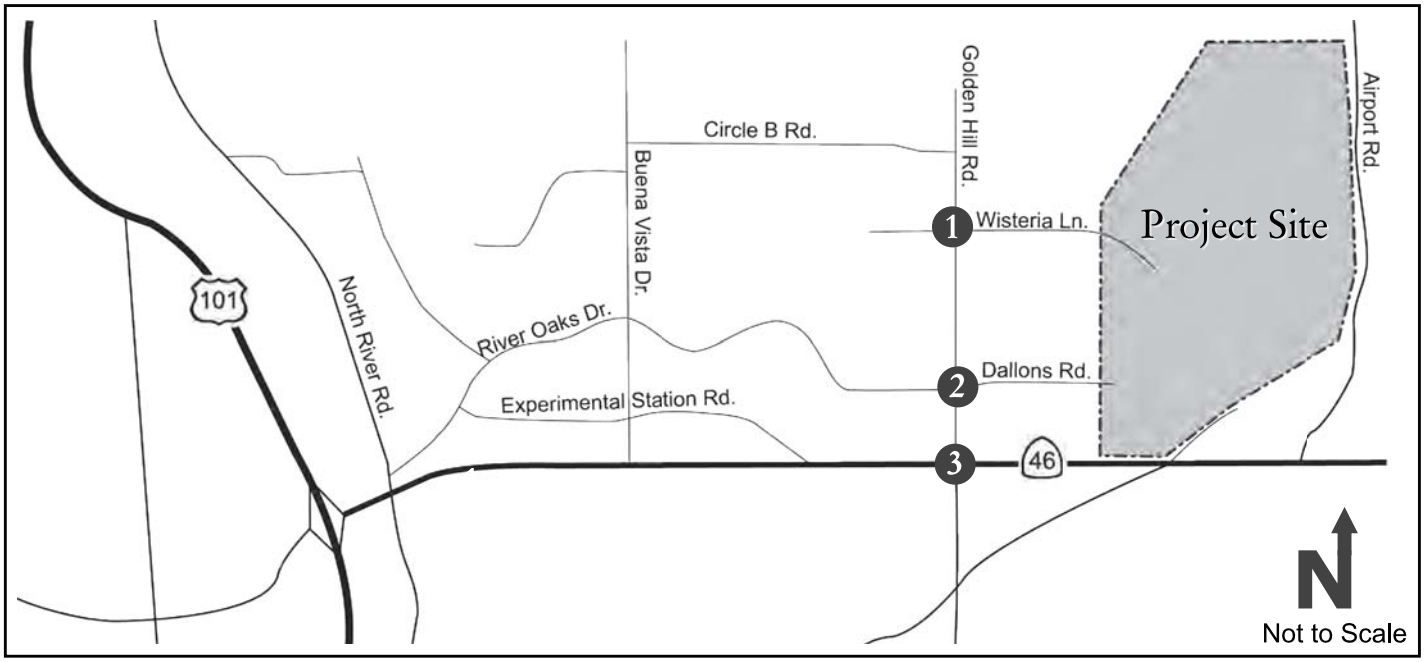
CUMULATIVE DEFICIENCIES

The following improvements would minimize deficiencies identified under Cumulative Plus Project conditions:

- Wisteria Lane/Golden Hill Road: Install a traffic signal or single lane roundabout as described in the Existing Plus Project conditions section.
- Dallons Drive/Golden Hill Road: Install a traffic signal or roundabout. A roundabout would likely require multiple lanes serving northbound and southbound through volumes.
- SR 46/Golden Hill Road: Improve parallel local routes. This is consistent with the Caltrans SR 46 Corridor System Management Plan, which notes that Golden Hill Road remains a low-priority for location improvement and that local road improvements are a high priority within the corridor. The City's Traffic Impact Fee program funds improvements to parallel local routes and the project provides an offer of dedication enabling the connection of Airport Road to Wisteria Lane. This will provide access to the Airport without relying on SR 46 and will improve parallel routes. The implementation of transportation demand management strategies, such as programs supporting increases in non-auto travel modes, carpools, ridesharing, and park-and-ride facilities would further reduce the demand for travel along the SR 46 corridor.

Note that that improvements above may need to be revisited depending on the preferred alternative resulting from the Union Road/SR 46 PAED.

Figure 6: Cumulative and Cumulative Plus Project Peak Hour Volumes



Cumulative Peak Hour Volumes

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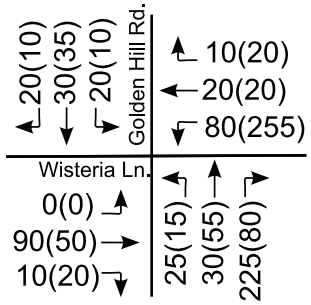

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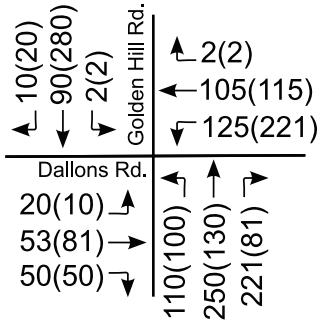

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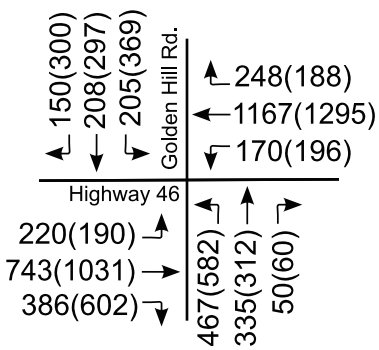
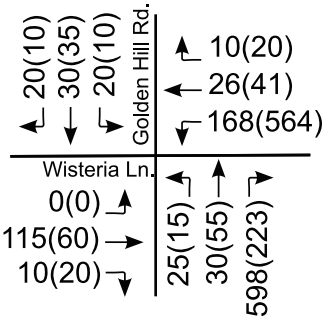


Cumulative Plus Project Peak Hour Volumes

1.



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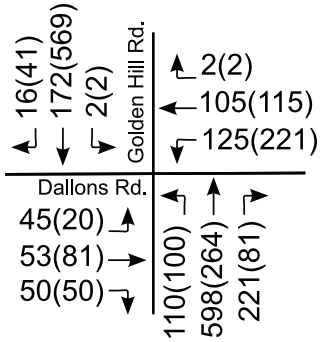

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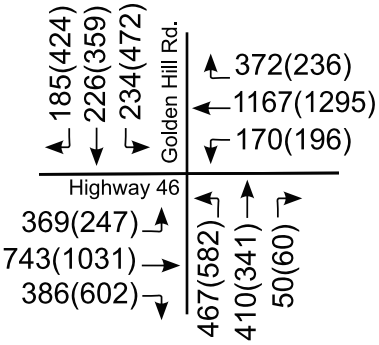

Legend:

7 - Study Area Intersection

xx(yy) - AM(PM) Peak Hour Traffic Volumes

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References

Associated Transportation Engineers, 2014. Hilton Garden Inn Traffic Study.

California Department of Transportation. 2002. Guide for the Preparation of Traffic Impact Studies.

_____. 2009. State Route 46 Corridor System Management Plan.

_____. 2012. Highway Design Manual.

Central Coast Transportation Consulting. 2013. River Oaks: The Next Generation TIA.

City of El Paso De Robles. 2009. Bike Master Plan.

_____. 2011. General Plan 2011 Circulation Element.

_____. 2013. Transportation Impact Analysis Guidelines.

Fehr & Peers. 2008. Final SR 46E Parallel Routes Study.

Hatch Mott MacDonald. 2012. Highway 46 PSR- Traffic Operations Analysis.

LSA Associates. 2012. Buena Vista Apartments Traffic Impact Analysis.

Paso Express. 2013. Telephone conversation with Susie Castro.

Penfield & Smith. 2012. Ayers Hotel Project Traffic and Circulation Study.

Transportation Research Board. 2010. Highway Capacity Manual.