HEXAGON TRANSPORTATION CONSULTANTS, INC.

1210 California Circle Residential Development

Draft Traffic Impact Analysis

Prepared for:

iStar Financial, Inc.

July 22, 2014

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Executive Summary

The purpose of this report is to analyze the transportation impacts of the proposed residential development located at 1210 California Circle in Milpitas, California. The project, which has been proposed by iStar Financial, Inc., would construct up to 170 townhomes. The site currently contains an industrial building, which is vacant and would be removed as part of the proposed project. Access to the site is provided by California Circle.

It should be noted that the project applicant currently has plans to only construct up to 149 townhomes, which is 21 fewer units than their maximum. However, to provide a worst case scenario, Hexagon analyzed the project using the maximum 170 townhomes. Accordingly, this traffic report represents a more conservative analysis (greater impact) of the project's impact than is expected to occur with the currently proposed project. Please note that references to "project" in the traffic study refer to the maximum proposed 170 unit project.

The impacts of the development were evaluated relative to the level of service policies and methodologies applicable in the City of Milpitas and in accordance with Valley Transportation Authority (VTA) guidelines. VTA is the administering agency for the Congestion Management Program (CMP) of Santa Clara County. Based on the workscope prepared by Hexagon and agreed upon by City staff, the study included an analysis of traffic conditions at six signalized intersections. The intersections were analyzed during the weekday AM and PM peak hours of traffic (commonly referred to as the commute hours), which occur from 7:00 to 9:00 AM and 4:00 to 6:00 PM. These periods represent the most congested traffic conditions on an average weekday.

Project Trip Generation

The amount of traffic generated by the proposed project was estimated by applying the appropriate trip generation rates to the size of the development. The trip generation rates used to estimate project traffic are from the publication entitled *Trip Generation Manual, 9th Edition,* by the Institute of Transportation Engineers (ITE). The existing 120,576 square feet industrial building onsite is currently unoccupied, and therefore, does not generate any peak hour traffic. Because the existing building has been vacant for an extended period of time, City staff has indicated that they would prefer that the near term analysis not reduce the project's estimated trips by the number of trips that could be generated by the existing building if it were occupied. This approach results in a more conservative estimate of the proposed project's potential impact. Based on this approach, the proposed project would generate 1,021 daily vehicle trips, with 79 trips occurring during the AM peak hour and 93 trips occurring during the PM peak hour.

Under 2030 cumulative conditions, the proposed project would replace the existing land use with up to 170 townhomes. For the purposes of estimating the effect of the proposed land use change, the project can receive credit for trips formerly generated by the existing building on the site because the building could be reoccupied without modification. A comparison of the trip generation between the proposed residential project and existing industrial land uses is shown in Table 10. The proposed change in land use would decrease the trip generation from the site by 20 trips during the AM peak hour and 10 trips during the PM peak hour. Total daily traffic from the site would increase by 197 trips.

Table ES- 1
Far Term Trip Generation Comparison

Land Use	Size	Unit	Land Use Code	Daily Rate	Daily Trips	AM Peak Hour				PM Peak Hour			
						Rate	In	Out	Total	Rate	In	Out	Total
Existing Use:													
Industrial Park Building	120.6	KSF	130	6.83	824	0.82	81	18	99	0.85	22	81	103
Proposed Use:													
Townhouses	170	d.u.	230	6.00	1,021	0.46	13	66	79	0.55	62	31	93
Net Project Trips: *(Proposed less Existing Trips)*					**197**		**-68**	**48**	**-20**		**41**	**-51**	**-10**

Note: Rates are from ITE *Trip Generation Manual, 9th Edition* , 2012. For existing use, Industrial Park (130) was used. For proposed use, Condominium/Townhouses (230) with fitted curve equation was used.

Intersection Level of Service

The results of the signalized intersection level of service analysis for the (1) existing plus project and (2) background plus project scenarios are summarized in Table ES-2. According to City of Milpitas and Congestion Management Program (CMP) guidelines, the proposed project would not result in any significant impacts to the study intersections under existing plus project conditions or background plus project conditions. It should be noted that the intersection of McCarthy Boulevard and Dixon Landing Road would operate at an unacceptable LOS E during the AM peak hour under background no project and plus project conditions. However, the addition of project trips at this intersection would not result in a significant impact.

Year 2030 Traffic Impacts

Year 2030 conditions with the proposed project were evaluated relative to year 2030 conditions with the existing industrial land use in order to determine potential impacts. Although many of the study segments are projected to operate at LOS E or F during the AM and PM peak hours, according to the City of Milpitas roadway segment impact criteria, the proposed land use change would not result in any significant impacts to roadway segments. The net addition of project traffic would be less than 1% for each roadway segment that would operate below its LOS standard.

Pedestrian, Bicycle & Transit Facilities

The proposed project would not result in any adverse impacts to pedestrian, bicycle, or transit facilities. In compliance with VTA bike parking guidelines, each of the residential units would have a garage, which would meet the requirement for Class I parking (lockers or guarded parking). VTA also recommends that the project provide one Class II space (bike racks) for every 15 townhouse units.

The current transit service in the project vicinity consists of bus routes operated by VTA and AC Transit. The closest bus stops are located on Dixon Landing Road and Milpitas Boulevard. These stops are approximately one mile away from the project site. The following recommendations were noted:

- The project should also provide a crosswalk and ADA-compliant ramps across its driveway, so that there are crosswalks across all four approaches of the California Circle and Fairview Way intersection.
- The project should provide bike racks in accordance with VTA requirements. Bike parking spaces are not shown on the current plans. These should be placed in accessible, secure, and well-lit locations.
- It is recommended that the City of Milpitas coordinate with VTA to explore the possibility of installing bus stops closer to the project site.

Site Access & Circulation

The site access and circulation were reviewed based on a project site plan dated June 19, 2014 by KTGY Group for iStar Financial. Because this site plan is conceptual, prior to final design, the site plan should be reviewed by the City prior to project approval. Hexagon recommends the following:

- Install an eastbound left-turn pocket into the proposed site driveway at the intersection of California Circle and Fairview Way. This can be accomplished within the existing right-of-way, and would entail restriping and implementing minor modifications to the existing two-way center turn lane on the west leg of the intersection.
- Prior to final design, the overall design and layout of the proposed California Circle and Project Driveway/Fairview Way intersection should be reviewed by City staff.
- Hexagon recommends eliminating the six parallel parking spaces (three on each side) along the project driveway's initial 100-foot segment between California Circle and the first cross aisle in order to better accommodate the inbound and outbound vehicular and bicycle volumes at the project's access point.
- Prior to final design, the driveway width and turning radii should be measured to confirm that they comply with City of Milpitas standards and are adequate to handle truck traffic. Although there are no sight distance conflicts apparent on the current plan, the project driveways should be reviewed by City staff prior to final design to insure the sight lines are free and clear of obstructions. Any landscaping and signage should be located in such a way as to insure an unobstructed view for drivers entering and exiting the site.
- Prior to final design, the project should consult with City staff to confirm that the design is acceptable for garbage collection and emergency vehicle access.
- Prior to final design, City staff should review the onsite circulation for parking and drive aisle widths, sight distance conflicts, and truck accessibility.
- Prior to final design, the project should ensure that adequate space is provided for the residents of the last townhouse on each dead-end drive aisle to back out of their garage and complete a three-point turn so that they can drive forward out of the dead-end drive aisle.

Table ES- 2
Summary of Levels of Service at Study Intersections

Study Number	Signalized Intersections	Peak Hour	Count Date	Existing		Existing + Project				Background		Background + Project			
				Avg. Delay	LOS	Avg. Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C	Avg. Delay	LOS	Avg. Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	McCarthy Blvd and Dixon Landing Rd	AM	05/20/14	20.5	C	20.7	C	0.3	0.002	64.4	E	64.8	E	0.5	0.002
		PM	05/20/14	13.7	B	13.7	B	0.1	0.001	40.5	D	40.5	D	0.0	0.001
2	I-880 SB Ramps and Dixon Landing Rd	AM	05/20/14	11.9	B	11.9	B	0.0	0.001	12.5	B	12.6	B	0.0	0.001
		PM	05/20/14	9.0	A	9.4	A	0.6	0.001	7.2	A	7.4	A	0.3	0.001
3	I-880 NB Ramps and Dixon Landing Rd	AM	05/20/14	15.5	B	16.2	B	0.9	0.010	25.4	C	25.8	C	0.5	0.010
		PM	05/20/14	28.7	C	29.3	C	1.2	0.013	28.0	C	28.5	C	1.7	0.023
4	Milmont Dr and Dixon Landing Rd	AM	06/01/12	42.5	D	42.5	D	0.0	0.000	47.6	D	47.6	D	0.0	0.000
		PM	06/01/12	26.1	C	26.5	C	0.9	0.013	27.9	C	28.4	C	1.0	0.013
5	Milpitas Blvd and Dixon Landing Rd	AM	05/20/14	41.9	D	41.9	D	0.0	0.002	41.4	D	43.7	D	1.4	0.001
		PM	05/20/14	39.3	D	39.3	D	0.0	0.001	39.9	D	40.0	D	0.0	0.001
6	California Circle and I-880 NB Ramps	AM	05/20/14	10.9	B	11.1	B	0.6	0.013	11.7	B	12.0	B	0.6	0.013
		PM	05/20/14	13.0	B	13.2	B	0.3	0.012	15.6	B	15.9	B	0.3	0.006

1. Introduction

The purpose of this report is to analyze the transportation impacts of the proposed residential development located at 1210 California Circle in Milpitas, California. The project, which has been proposed by iStar Financial, Inc., would construct up to 170 townhouses. The site currently contains a 120,576 square foot industrial building, which is vacant and would be removed as part of the proposed project. Access to the site is provided by California Circle. The project location is shown graphically in Figure 1. A preliminary project site plan is shown in Figure 2.

It should be noted that the project applicant currently has plans to only construct up to 149 townhomes, which is 21 fewer units than their maximum. However, to provide a worst case scenario, Hexagon analyzed the project using the maximum 170 townhomes. Accordingly, this traffic report represents a more conservative analysis (greater impact) of the project's impact than is expected to occur with the currently proposed project. Please note that references to "project" in the traffic study refer to the maximum proposed 170 unit project.

Scope of Work

The impacts of the development were evaluated relative to the level of service policies and methodologies applicable in the City of Milpitas. The analysis also was conducted in accordance with the requirements of the Valley Transportation Authority (VTA), the administering agency for the Congestion Management Program (CMP) of Santa Clara County. CMP guidelines were followed for freeway segments. The following signalized intersections were analyzed for this project.

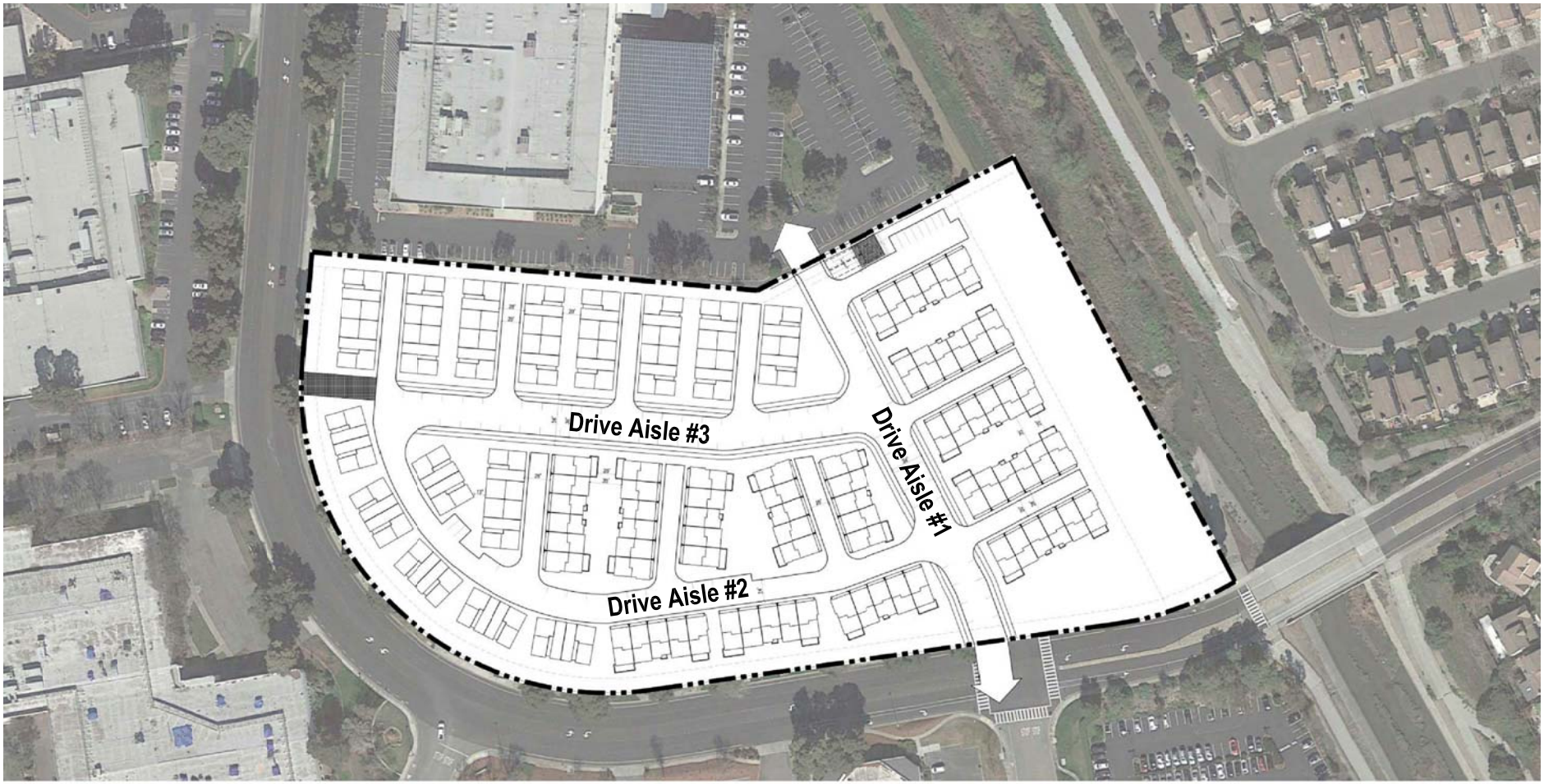
1. McCarthy Boulevard and Dixon Landing Road
2. I-880 SB Ramps and Dixon Landing Road
3. I-880 NB Ramps and Dixon Landing Road
4. Milmont Drive and Dixon Landing Road
5. Milpitas Boulevard/Warm Springs Boulevard and Dixon Landing Road
6. California Circle and I-880 NB Ramps

The study intersections were selected in consultation with City of Milpitas staff. The intersections were analyzed during the weekday AM and PM peak hours of traffic (referred to as the commute hours), which occur from 7:00 to 9:00 AM and 4:00 to 6:00 PM. These periods represent the most congested traffic conditions on an average weekday. The project impacts were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing traffic volumes were obtained from current AM and PM peak hour traffic counts, with the exception of the intersection of Milmont Drive and Dixon Landing Road, where there are currently extensive modifications to the east approach due to BART construction. The traffic volumes used for that intersection pre-date the BART construction and associated lane closures.

Figure 1

Project Site Location and Study Intersections



CALIFORNIA CIRCLE

iStar
One Sansome Street
30th Floor
San Francisco, CA 94104

SITE PLAN

MILPITAS, CA
KTGY # 2014-0262
06/19/2014

0 50 100 200 1:100

KTGY Group, Inc.
Architecture+Planning
580 Second St.,
Suite 200
Oakland, CA 94607
510.272.2910
ktgy.com

Figure 2
Site Plan

NORTH
Not to Scale

Scenario 2: *Background Conditions.* Background traffic volumes were estimated by adding to existing peak-hour volumes the projected volumes from approved but not yet completed developments. The traffic volumes associated with those developments were obtained from the Transportation Impact Analyses of nearby projects in the City of Milpitas and the City of Fremont. It should be noted that the planned Fremont Boulevard extension to Dixon Landing Road would be completed under background conditions, which would result in some redistribution of both existing traffic volumes and approved project trips.

Scenario 3: *Existing + Project Conditions.* Projected peak hour traffic volumes were estimated by adding to existing traffic volumes the additional traffic generated by the project. Existing + Project conditions were evaluated relative to existing conditions in order to determine potential project impacts.

Scenario 4: *Background + Project Conditions.* Projected peak hour traffic volumes were estimated by adding to background traffic volumes the additional traffic generated by the project. Background + Project conditions were evaluated relative to background conditions in order to determine potential project impacts.

Scenario 5: *Cumulative Conditions*. Cumulative conditions were represented by year 2030 traffic volumes on the roadway network. Traffic volumes were obtained from the City of Milpitas Travel Demand Forecast (TDF) model. Per City of Milpitas requirements, the impact of the proposed project was measured on roadway segments (rather than intersections) in the project vicinity.

According to CMP guidelines, a freeway segment should be studied when a proposed development would add traffic to a segment greater than one percent of its capacity. Table 1 shows this comparison. The methods used to assign project traffic to the roadway network are described in the "Project Impacts and Recommendations" chapter of this report. The capacity of a mixed-flow lane as specified by the *Highway Capacity Manual* is 2,200 vehicles per hour (vph) on four-lane facilities, and 2,300 vph on facilities with six or more lanes. High occupancy vehicle (HOV) lanes and auxiliary lanes were not included in this calculation. There are some stretches of I-880 between SR 237 and Mission Boulevard in each direction where there are five mixed-flow lanes, but the capacity analysis in Table 1 uses four mixed-flow lanes in each direction in order to be conservative.

The number of trips that the project is estimated to add to the freeway is less than one percent of its capacity in both directions in both the AM and PM peak hours. Based on this comparison, the project would not create a significant impact on freeway segments and no additional analysis is required.

Methodology

This section describes the methods used to determine the traffic operations for each scenario. It includes the methods used for data collection, level of service calculations, and describes the various level of service standards, as well as the criteria for project impacts.

Data Collection

The data for the study locations were obtained through field observations, previous traffic studies, the City of Milpitas, the City of Fremont, current traffic counts (see appendix A), and the VTA CMP Monitoring and Conformance Report. The following data were collected from these sources:

- existing traffic volumes,
- lane geometries,
- signal timing and phasing,
- previous traffic studies,
- a list of approved projects (ATI), and
- Year 2030 forecast traffic volumes

Table 1
Freeway Segment Evaluation

Freeway	Segment	Direction	# of Mixed Flow Lanes	Capacity[1] (vphpl)	1% of Capacity	Project Trips AM	Project Trips PM
I-880	SR 237 to Dixon Landing Road	NB	4	9200	92	5	25
I-880	Dixon Landing Road to Mission Blvd	NB	4	9200	92	17	8
I-880	Mission Blvd to Dixon Landing Road	SB	4	9200	92	3	16
I-880	Dixon Landing Road to SR 237	SB	4	9200	92	26	12

Notes:
(1) Mixed-lane capacity is based on the ideal capacity cited in the *2000 Highway Capacity Manual.*

Intersection Level of Service

The previously described data were used to calculate each study location's level of service (LOS). Level of service is a qualitative measure of traffic operations, ranging from LOS A (free-flow conditions) to LOS F (highly congested conditions with excessive delays). The levels of service at signalized intersections were evaluated using TRAFFIX software with CMP defaults. This method uses the *2000 Highway Capacity Manual* methodology to estimate the average control delay per vehicle, in seconds. This average delay can then be correlated to a level of service as shown in Table 2.

Roadway Segment Levels of Service

For 2030 conditions, the traffic operations at the study segments were calculated based on volume-to-capacity (v/c) ratios, which can be correlated to level of service. Table 3 shows the roadway types, capacity assumptions, and LOS thresholds that were used for this analysis.

Level of Service Standards and Impact Criteria

At study intersections and roadway segments in Milpitas the minimum acceptable level of service is LOS D. According to the City of Milpitas, project impacts at signalized intersections occur when:

1. The level of service at an intersection drops below its LOS standard (LOS D) when project traffic is added; or
2. An intersection that is operating worse than its level of service standard under no project conditions has an increase in critical delay of four or more seconds and the demand-to-capacity ratio (V/C) is increased by more than 0.01 when project traffic is added.

The exception to this threshold is when the addition of project traffic reduces the amount of average stopped delay for critical movements (i.e., the change in average stopped delay for critical movements is negative). In this case, the threshold is when the project increases the critical V/C value by .01 or more.

For roadway segments under year 2030 conditions, the traffic operations were evaluated based on volume-to-capacity (v/c) ratios. Under cumulative conditions, a project is said to adversely impact a roadway segment if:

- The roadway segment is projected to operate below its LOS standard under no project conditions and the proposed project is projected to cause an increase in traffic of at least one percent of its capacity; **or**

- The roadway segment is projected to operate at or better than its LOS standard under no project conditions and the proposed project is projected to degrade the level of service to less than acceptable levels.

Table 2
Intersection Level of Service Definitions Based on Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lenghts, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p10-16.

Table 3
City of Milpitas Roadway Segment LOS Definitions

Type of Facility	Lane Capacity	Levels of Service A	B	C	D	E	F
Freeway	2,000	1,200	1,400	1,600	1,800	2,000	>2,000
Expressway	1,100	660	770	880	990	1,100	>1,100
Major Arterial	1,000	600	700	800	900	1,000	>1,000
Arterial	900	540	630	720	810	900	>900

Note: All volumes shown are number of vehicles per hour.

Report Organization

The remainder of this report is divided into five chapters. Chapter 2 describes the existing roadway network, existing transit service, existing bicycle and pedestrian facilities, and existing levels of service at the study intersections. Chapter 3 presents the intersection operations under background conditions. Chapter 4 describes the method used to estimate project traffic and the project's impact on signalized intersections. Chapter 5 is an evaluation of other transportation-related issues, such as site access, circulation, and parking. Chapter 6 discusses the traffic conditions under 2030 conditions.

2. Existing Conditions

This chapter describes the existing conditions for all of the major transportation facilities in the vicinity of the project site, including the roadway network facilities and operations, transit service, and bicycle and pedestrian facilities.

Roadway Network

Regional access to the project site is provided via Interstate 680 (I-680), Interstate 880 (I-880), and State Route 237. Direct access to the site is provided via California Circle. Other major facilities in the vicinity of the project site include Milmont Drive, Dixon Landing Road, Milpitas Boulevard, and McCarthy Boulevard. These facilities are described below.

I-680 is a north/south freeway traversing the eastern portion of Milpitas. This freeway connects the inland East Bay communities to the north with San Jose to the south. I-680 has six lanes plus a southbound high occupancy vehicle (HOV) lane north of SR 237, and eight lanes south of SR 237.

I-880 is a north/south freeway providing regional access from East Bay cities to San Jose, where it becomes SR 17 and extends into Santa Cruz. Between SR 237 in Milpitas and Mission Boulevard in Fremont, I-880 has four to five mixed flow lanes and one HOV lane in each direction. South of SR 237 within the City of Milpitas, I-880 has three-mixed flow lanes and one HOV lane in each direction. As described further in the description of SR 237, I-880 also includes a short segment of Express Lane, leading to and from SR 237.

SR 237 is an east/west freeway providing regional access between I-880 in Milpitas and US 101 in Sunnyvale and SR 85 in Mountain View. Between I-880 and I-680, SR 237 is a six-lane divided major arterial known as Calaveras Boulevard. West of I-880, SR 237 has two mixed-flow lanes plus express lanes in both directions. Express lanes may be used during commute periods by high occupancy vehicles (vehicles with 2 or more occupants), vehicles with a clean air sticker, or vehicles that have paid a toll with a FasTrak transponder. The westbound Express Lane is 6.5 miles long and extends between Dixon Landing Road on I-880 and Lawrence Expressway on SR 237. The eastbound Express Lane is 4.5 miles long and runs between North First Street on SR 237 and Dixon Landing Road on I-880.

California Circle is a four-lane roadway with a two-way center left-turn lane in the vicinity of the project site. North of the project site, it is a north/south roadway and terminates at Dixon Landing Road, where it becomes a freeway ramp for northbound I-880. Adjacent to the project site, California Circle makes a 90 degree turn to the east and then extends to Fairview Way, where it becomes Milmont Drive. It provides direct access to the project.

Milmont Drive is primarily a two-lane, north/south street in the vicinity of the site. It is four lanes wide over a distance of a few hundred feet immediately north and south of Dixon Landing Road. It extends from

Page Road in Fremont southward past Dixon Landing Road; approximately 0.5 miles south of Dixon Landing Road it curves westward and becomes California Circle where it crosses Fairview Way. Between Dixon Landing Road and Fairview Way, Milmont Drive has a continuous median strip and left turn pockets are provided at each intersection.

Dixon Landing Road/Dixon Road is a four-lane, east/west arterial in the vicinity of the site. It extends from N. McCarthy Boulevard, crosses I-880, and continues eastward where it becomes a cul-de-sac near I-680. It provides access to the site via California Circle and Milmont Drive. Dixon Landing Road changes names to Dixon Road east of Milpitas Boulevard/Warm Springs Boulevard.

Milpitas Boulevard/Warm Springs Bouelvard is a four-lane, north-south arterial that extends from Montague Expressway in the south to Dixon Landing Road, where it continues north into Fremont as Warm Springs Boulevard. It generally provides a center two-way left-turn lane except at intersections where median islands and turn bays are provided.

McCarthy Boulevard is a four-lane, divided, north-south arterial connecting Montague Expressway in the south to Dixon Landing Road in the north. McCarthy Boulevard primarily serves as access to SR 237, Montague Expressway, and I-880 for several business parks. In the future, McCarthy Boulevard is planned to extend north of Dixon Landing Road and connect to Fremont Bouelvard.

Pedestrian and Bicycle Facilities

Existing pedestrian access to the proposed site is provided by a series of existing sidewalks, and crosswalks on California Circle, Milmont Drive, and Dixon Landing Road. All signalized intersections have pedestrian crosswalks and Americans with Disabilities Act (ADA) compliant curb ramps. Adjacent to the project site, there is a crosswalk at the unsignalized intersection of California Circle and Fairview Way.

Bike lanes provide direct access to the project site on California Circle and Milmont Drive. Bike lanes are also present on Dixon Landing Road on the I-880 overcrossing. A bicycle and pedestrian trail also runs along Lower Penitencia Creek from Dixon Landing Road south to North Abbott Avenue. This trail passes the eastern border of the project site. Figure 3 shows the existing bikeways in the project vicinity.

Transit Service

Because the project's neighborhood is located close to the boundary between Santa Clara and Alameda Counties, both Santa Clara Valley Transportation Authority (VTA) and Alameda-Contra Costa Transit District (AC Transit) offer transit service in the area. Figure 4 shows the two bus routes closest to the project site: VTA route 66 and AC Transit route 217. These stops are approximately 3,500 feet east of the project site located at Dixon Landing Road and Milpitas Boulevard/Warm Springs Boulevard.

Table 4
Existing Transit Service

Route	Route Description	Weekday Hours of Operation	Headway (min) [1]
VTA 66	Milpitas Blvd & Dixon Road to Kaiser San Jose, via Great Mall and downtown San Jose	5:30 AM to 11:40 PM	10 - 20
AC Transit 217	Great Mall to Fremont BART Station, via Milpitas Blvd and Warm Springs Blvd	5:45 AM to 10:30 PM	30

(1) Approximate headways during AM and PM peak periods.

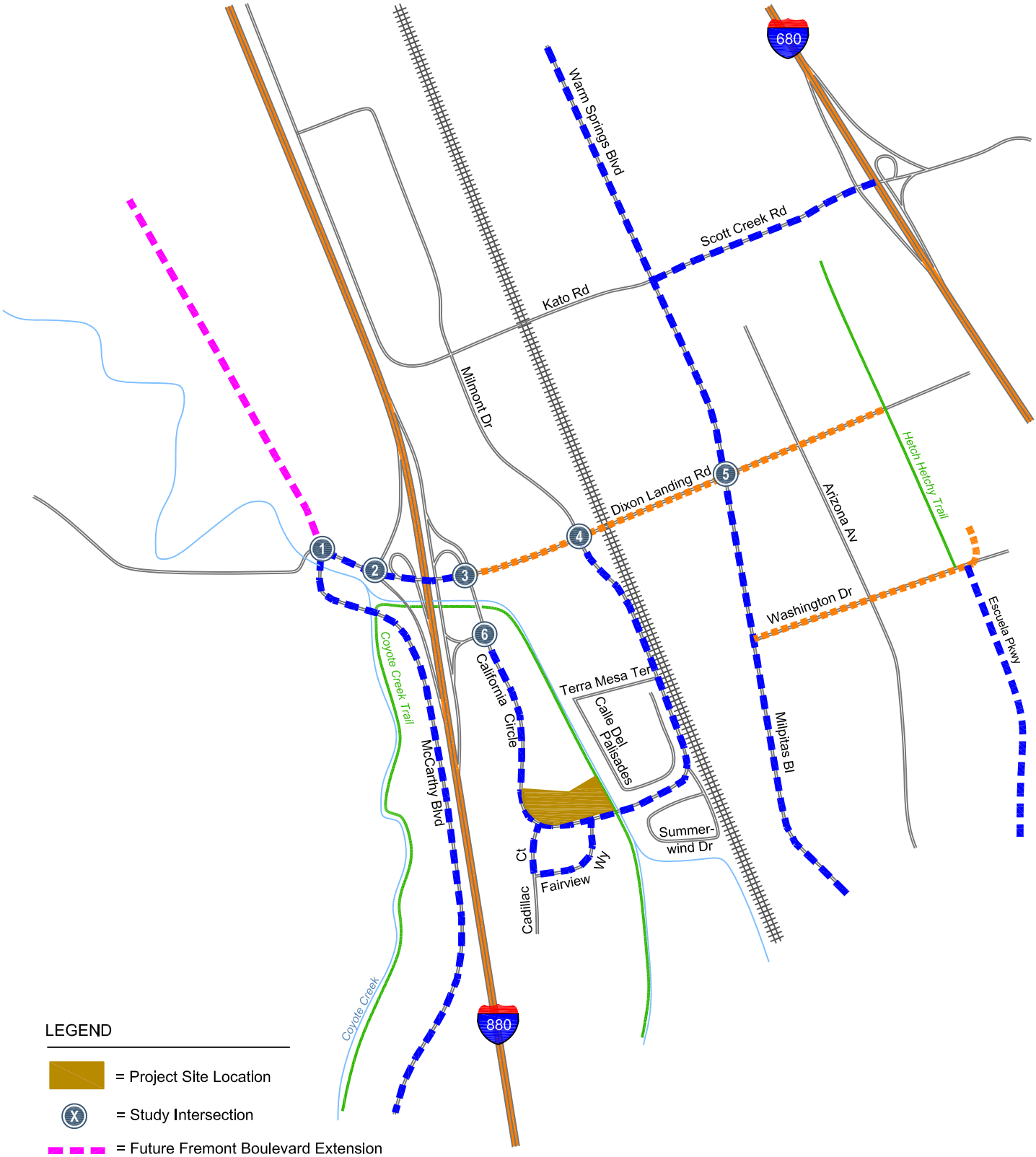


Figure 3

Existing Bikeways

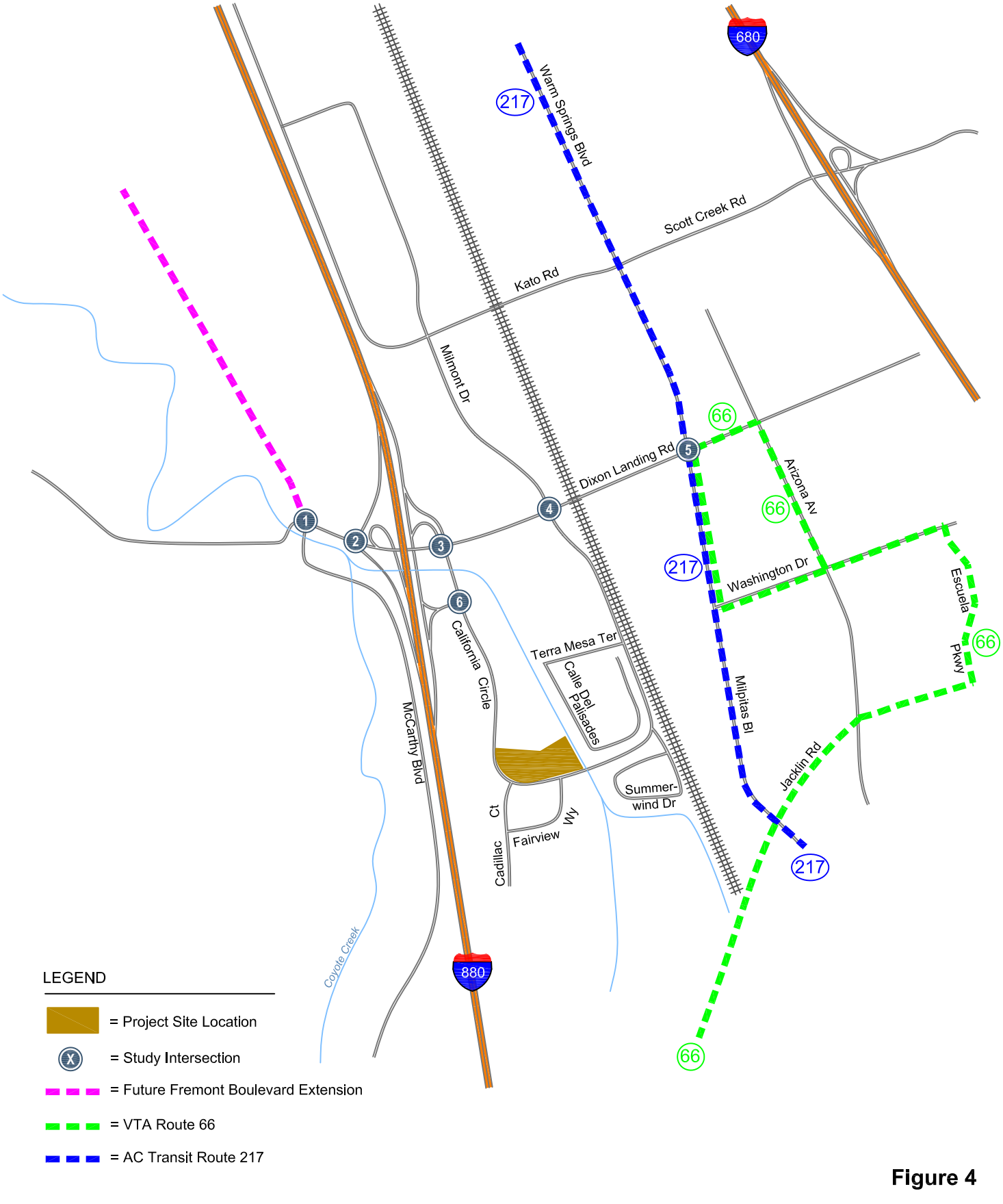


Figure 4

Existing Transit Service

In the future, there will be BART service along the railroad right-of-way just east of Milmont Boulevard. However, the nearest BART stations will be a Warm Springs Station, approximately four miles to the north near Grimmer Boulevard, and a Milpitas Station, approximately three miles to the south near the Great Mall.

Existing Intersection Levels of Service

Existing AM and PM peak hour traffic volumes were obtained from traffic counts conducted in May of 2014, except for the intersection of Dixon Landing Road and Milmont Boulevard. The traffic count data are included in Appendix A. The operations of the study intersections were evaluated using TRAFFIX software to determine their levels of service (LOS). The lane configurations used for the calculations are shown in Figure 5. The intersection turn movement volumes are shown in Figure 6.

In order to accommodate BART construction, extensive modifications had been made to the intersection of Dixon Landing Road and Milmont Boulevard at the time the traffic counts were conducted in May 2014. Specifically, on the east approach, all of the eastbound traffic lanes had been closed and one of the westbound lanes had been converted to a temporary eastbound lane. Dixon Landing Road had only one eastbound lane and one westbound lane over the railroad tracks, and there were numerous signs in the area advising motorists to use alternate routes. Such major modifications would clearly affect the existing traffic volumes.

In consultation with City of Milpitas staff, it was decided to use volume counts, lane geometry, and signal phasing for this intersection from before the BART construction modifications. The intersection will be converted back to its pre-BART construction configuration by the time the proposed project is completed. Thus, it is more appropriate to use pre-BART construction volumes and intersection geometry in the Existing Scenario in order to facilitate a valid comparison to the Existing Plus Project Scenario.

The intersection of McCarthy Boulevard and Dixon Landing Road is currently a three-legged intersection, but there is construction occuring on the property north of the existing intersection. The north approach is still unpaved and has a gate across it outside of normal construction hours. However, because the traffic counts showed traffic entering and exiting the intersection from the north approach (presumably construction traffic) and because the signal provides a green phase to the north approach, we have shown this as a four-legged intersection on Figure 5.

Table 5 presents the results of the signalized intersection level of service calculations. All study intersections currently operate at LOS D or better. The TRAFFIX level of service calculation sheets are included in Appendix B.

Table 5
Existing Intersection Levels of Service

Study Number	Signalized Intersections	Peak Hour	Count Date	Existing Avg. Delay	Existing LOS
1	McCarthy Blvd and Dixon Landing Rd	AM	05/20/14	20.5	C
		PM	05/20/14	13.7	B
2	I-880 SB Ramps and Dixon Landing Rd	AM	05/20/14	11.9	B
		PM	05/20/14	9.0	A
3	I-880 NB Ramps and Dixon Landing Rd	AM	05/20/14	15.5	B
		PM	05/20/14	28.7	C
4	Milmont Dr and Dixon Landing Rd	AM	06/01/12	42.5	D
		PM	06/01/12	26.1	C
5	Milpitas Blvd and Dixon Landing Rd	AM	05/20/14	41.9	D
		PM	05/20/14	39.3	D
6	California Circle and I-880 NB Ramps	AM	05/20/14	10.9	B
		PM	05/20/14	13.0	B

Observed Existing Traffic Conditions

Traffic conditions in the field were observed in order to identify existing operational deficiencies and to confirm the accuracy of calculated levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to intersection level of service, and (2) to identify any locations where the level of service calculations do not accurately reflect level of service in the field. Based on the field observations, the level of service analysis appears to accurately reflect actual existing traffic conditions. However, the following operational issues were observed:

- **Dixon Landing Road and I-880 SB Ramps (Intersection #2).** During the AM peak hour, the meter for the southbound I-880 ramp (from westbound Dixon Landing Road) creates a long queue that spills back to Dixon Landing Road, halfway over the overpass. However, the queue did not spill out of the westbound dual right turn lanes provided in advance of the loop ramp. The dual right turn lanes extend from the I-880 southbound loop ramp to the Dixon Landing Road/I-880 northbound ramps intersection. During the observations, westbound through traffic on Dixon Landing Road was not blocked by the queue created by the ramp meter.

- **Dixon Landing Road and I-880 NB Ramps (Intersection #3).** During the PM peak hour, the meter for the northbound I-880 on-ramp from westbound Dixon Landing Road creates a long queue that sometimes extends to the Dixon Landing Road/I-880 northbound ramps intersection. Early in the PM commute period, the queue did not extend from the ramp meter to Dixon Landing Road and all movements cleared in one cycle. However, after 5:15, the queue lengthened such that some vehicles wanting to enter the northbound ramp had to wait more than a single cycle. This delay was a function of the extremely congested stop-and-go conditions on northbound I-880 such that vehicles wishing to enter I-880 at this interchange had a difficult time merging into the travel lanes, even with the metering lights on. During observations, the level of service of this intersection appeared worse than the LOS C calculated by TRAFFIX. That is because TRAFFIX does not account for the spillback from “downstream” intersections or freeway merges. The level of service calculated by TRAFFIX indicates that the volume of traffic at this intersection would operate at LOS C, if I-880 also had free-flowing conditions.

- **Dixon Landing Road and Milmont Boulevard (Intersection #4).** As described previously, this intersection had been extensively modified to accommodate BART construction at the time that field observations and traffic counts were conducted. Most of the construction-related deficiencies noted are not relevant, however, because this analysis utilizes traffic counts and intersection geometry that existed prior to the BART construction.

  One turning movement issue was noted, however, that would not have been affected by the changes to the east approach of the intersection. During the AM peak hour, the southbound to westbound right turn queue extended 300 feet from the intersection and sometimes did not clear the intersection in a single traffic signal cycle.

- **Dixon Landing Road and Milpitas Boulevard/Warm Springs Boulevard (Intersection #5).** During Hexagon’s field observations, all traffic heading west after exiting this intersection needed to merge into a single westbound lane over the railroad tracks. This created operational issues for certain turning movements, especially during the AM peak (northbound traffic turning left, southbound traffic turning right, and westbound through traffic), but they are not relevant to this analysis because they are related to the BART construction modifications and do not reflect the conditions that will exist when the proposed project has been completed.

There were no operational issues observed at the study intersections of McCarthy Boulevard/Dixon Landing Road (Intersection #1) or California Circle/I-880 NB Ramps (Intersection #6) during the AM and PM peak hours.

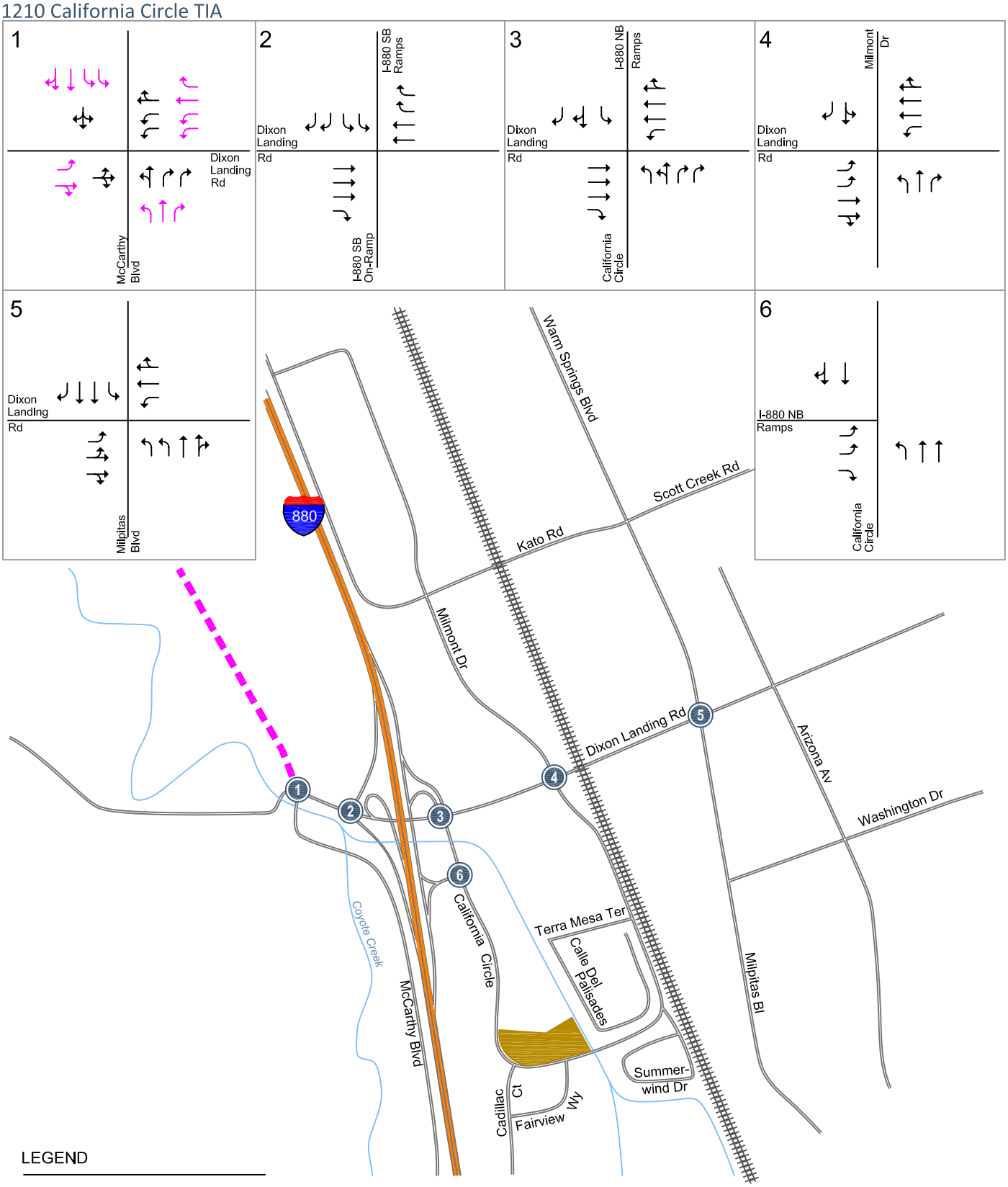


Figure 5
Lane Configurations

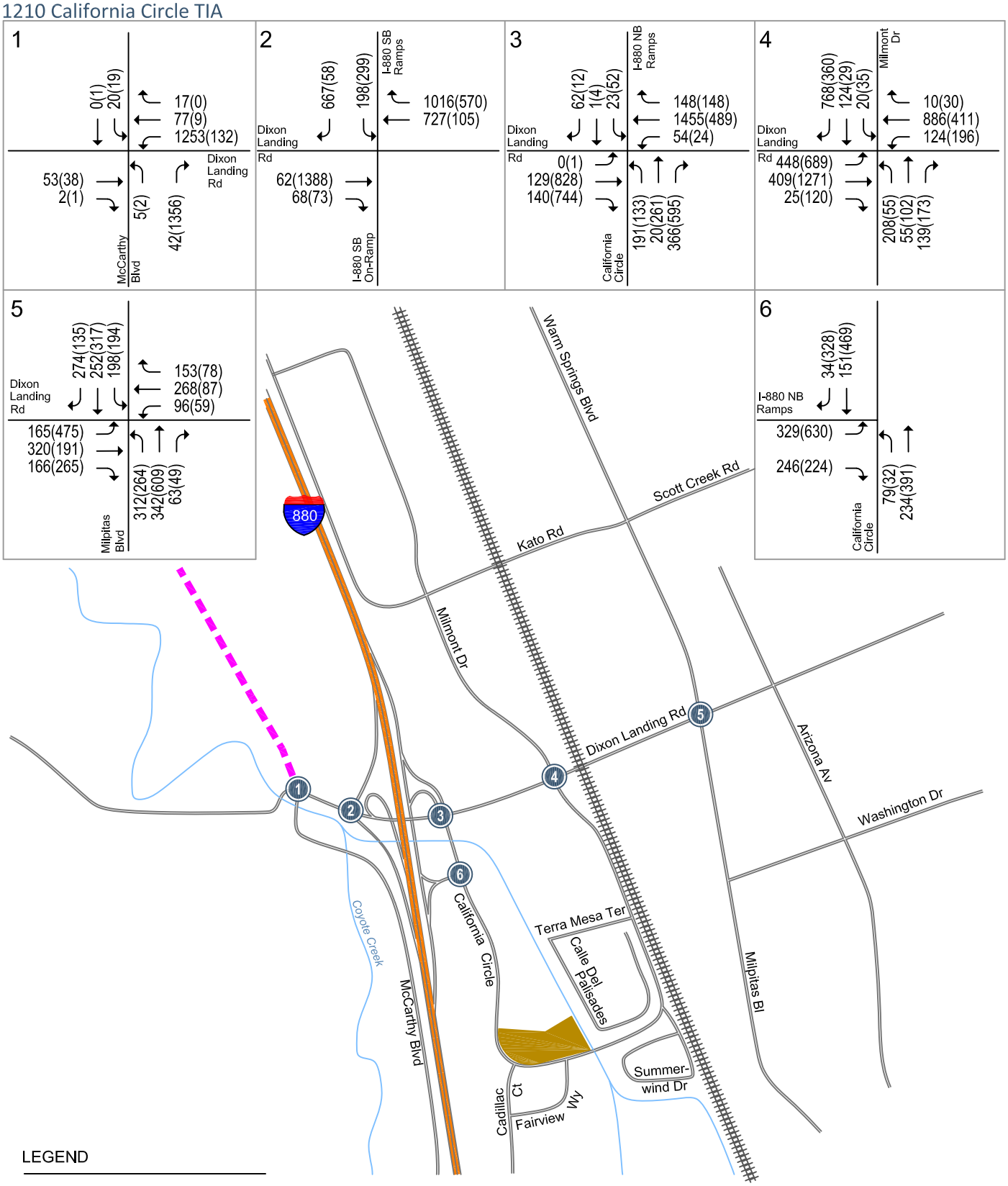


Figure 6
Existing Traffic Volumes

3. Background Conditions

This chapter describes background traffic conditions. Traffic volumes for background conditions are comprised of volumes from existing traffic counts plus traffic generated by other approved developments in the vicinity of the site. Traffic volume and roadway network assumptions are described below. The pedestrian and bicycle facilities were assumed to be unchanged from those of existing conditions.

Traffic Volumes and Roadway Network Assumptions

Background peak-hour traffic volumes were calculated by adding to existing volumes the estimated traffic from approved but not yet constructed developments in the vicinity of the project site. The list of approved but not yet constructed developments was supplied by the Cities of Milpitas and Fremont and can be found in Appendix C. The following projects were included in the background scenario:

- A residential project at 1494-1600 California Circle in Milpitas, and
- A warehouse project called Creekside Landing on the northwest quadrant of I-880 and Dixon Landing Road in Fremont.
- An office park and retail center called McCarthy Ranch Mixed Use, which is comprised of three non-contiguous parcels along the west side of McCarthy Boulevard.
- A retail, restaurant, and hotel project called Pacific Mall Silicon Valley, which would replace existing commercial space located at the corner of McCarthy Boulevard and Ranch Drive.

Traffic volumes were obtained from TIAs conducted for those projects. Background traffic volumes are shown in Figure 7.

It is assumed in this analysis that the roadway network at the study intersections under background conditions would be the same as those described under existing conditions, with one exception. Under background conditions, the planned Fremont Boulevard extension to Dixon Landing Road will be completed. The Fremont Boulevard extension will form the northern leg of the McCarthy Boulevard/Dixon Landing Road intersection and provide an alternative route for vehicles travelling north/south along the I-880 corridor between the Cities of Milpitas and Fremont. This will result in some redistribution of both existing traffic volumes and approved background project trips.

Intersection Levels of Service

Intersection level of service calculations were conducted to evaluate the operating levels of the key signalized intersections under background conditions. Table 6 presents the results of the signalized intersection level of service calculations under background conditions. All study intersections are projected to operate at LOS D or better, with one exception. The intersection of McCarthy Boulevard and Dixon Landing Road would operate at an unacceptable LOS E during the AM peak hour. The TRAFFIX level of service calculation sheets are included in Appendix B.

Table 6
Background Intersection Levels of Service

Study Number	Signalized Intersections	Peak Hour	Existing Avg. Delay	Existing LOS	Background Avg. Delay	Background LOS
1	McCarthy Blvd and Dixon Landing Rd	AM	20.5	C	64.4	E
		PM	13.7	B	40.5	D
2	I-880 SB Ramps and Dixon Landing Rd	AM	11.9	B	12.5	B
		PM	9.0	A	7.2	A
3	I-880 NB Ramps and Dixon Landing Rd	AM	15.5	B	25.4	C
		PM	28.7	C	28.0	C
4	Milmont Dr and Dixon Landing Rd	AM	42.5	D	47.6	D
		PM	26.1	C	27.9	C
5	Milpitas Blvd and Dixon Landing Rd	AM	41.9	D	41.4	D
		PM	39.3	D	39.9	D
6	California Circle and I-880 NB Ramps	AM	10.9	B	11.7	B
		PM	13.0	B	15.6	B

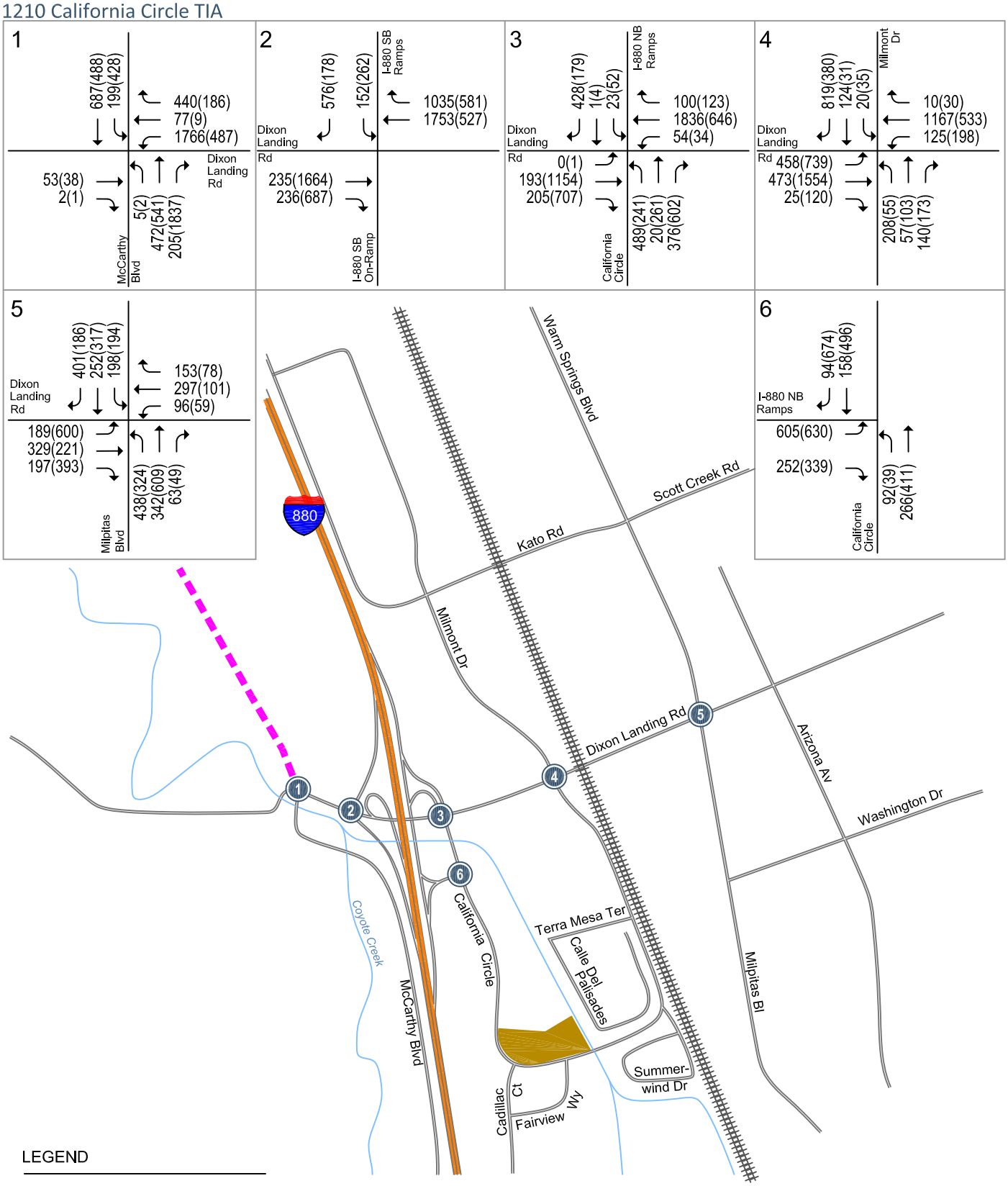


Figure 7
Background Traffic Volumes

NORTH
Not to Scale

4.
Project Impacts and Recommendations

The impacts of the proposed project are discussed in this chapter. First, the method used to estimate the amount of traffic added to the roadway system by the project is described. Then, as specified by CMP requirements, individual intersections are analyzed with the addition of project traffic. Under project conditions, the roadway network would be the same as under background conditions.

Project Traffic Estimates

The amount of traffic associated with a development is estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In the first step, the amount of traffic entering and exiting the site is estimated on a peak hour basis. In the second step, the directions of approach and departure of project traffic are estimated. In the third step, the trips are assigned to specific streets and intersections. This process is described in the following sections.

Trip Generation

The amount of traffic generated by the proposed project was estimated by applying the appropriate trip generation rates to the size of the development. The trip generation rates used to estimate project traffic are from the publication entitled *Trip Generation Manual, 9th Edition,* by the Institute of Transportation Engineers (ITE).

The existing industrial building on-site is currently unoccupied and therefore does not generate any peak hour traffic. Because the existing building has been vacant for an extended period of time, City staff has indicated that they would prefer that this analysis not reduce the project's estimated trips by the number of trips that could be generated by the existing building if it were occupied. This approach results in a more conservative estimate of the proposed project's potential impact.

Based on the ITE rates described above, the proposed project would generate 1,021 daily vehicle trips, with 79 trips occurring during the AM peak hour and 93 trips occurring during the PM peak hour. The project trip generation estimates are presented in Table 7.

Trip Distribution & Assignment

The proposed project's trip distribution pattern was estimated based on a select zone analysis from the City of Milpitas Travel Demand Forecast Model. This is shown graphically in Figure 8. The trips generated by the proposed project were assigned to the roadway network based on the directional distribution for the AM and PM peak hours. Figure 9 shows the net project trip assignment. The traffic volumes under (1) existing plus project and (2) background plus project conditions are shown in Figures 10 and 11, respectively.

Table 7
Project Trip Generation

Land Use	Size	unit	Land use code	Daily Rate	Daily Trips	AM Peak Hour Rate	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour Rate	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Proposed Use:													
Townhouses	170	d.u.	230	6.00	1,021	0.46	13	66	79	0.55	62	31	93

Note: Rates are from ITE *Trip Generation Manual, 9th Edition* , 2012, for Condominium/Townhouses (ITE 230), using fitted curve equations.

Intersection Level of Service Analysis

The results of the signalized intersection level of service analysis for the (1) existing plus project and (2) background plus project scenarios are summarized in Tables 8 and 9, respectively. The detailed TRAFFIX level of service calculation sheets are included in Appendix B.

Under existing plus project conditions, the results of the level of service analysis show that the study intersections would continue to operate at an acceptable LOS D or better during both the AM and PM peak hours.

Table 8
Existing Plus Project Intersection Levels of Service

Study Number	Signalized Intersections	Peak Hour	Existing Avg. Delay	Existing LOS	Existing + Project Avg. Delay	Existing + Project LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	McCarthy Blvd and Dixon Landing Rd	AM	20.5	C	20.7	C	0.3	0.002
		PM	13.7	B	13.7	B	0.1	0.001
2	I-880 SB Ramps and Dixon Landing Rd	AM	11.9	B	11.9	B	0.0	0.001
		PM	9.0	A	9.4	A	0.6	0.001
3	I-880 NB Ramps and Dixon Landing Rd	AM	15.5	B	16.2	B	0.9	0.010
		PM	28.7	C	29.3	C	1.2	0.013
4	Milmont Dr and Dixon Landing Rd	AM	42.5	D	42.5	D	0.0	0.000
		PM	**26.1**	**C**	26.5	C	0.9	0.013
5	Milpitas Blvd and Dixon Landing Rd	AM	41.9	D	41.9	D	0.0	0.002
		PM	39.3	D	39.3	D	0.0	0.001
6	California Circle and I-880 NB Ramps	AM	10.9	B	11.1	B	0.6	0.013
		PM	13.0	B	13.2	B	0.3	0.012

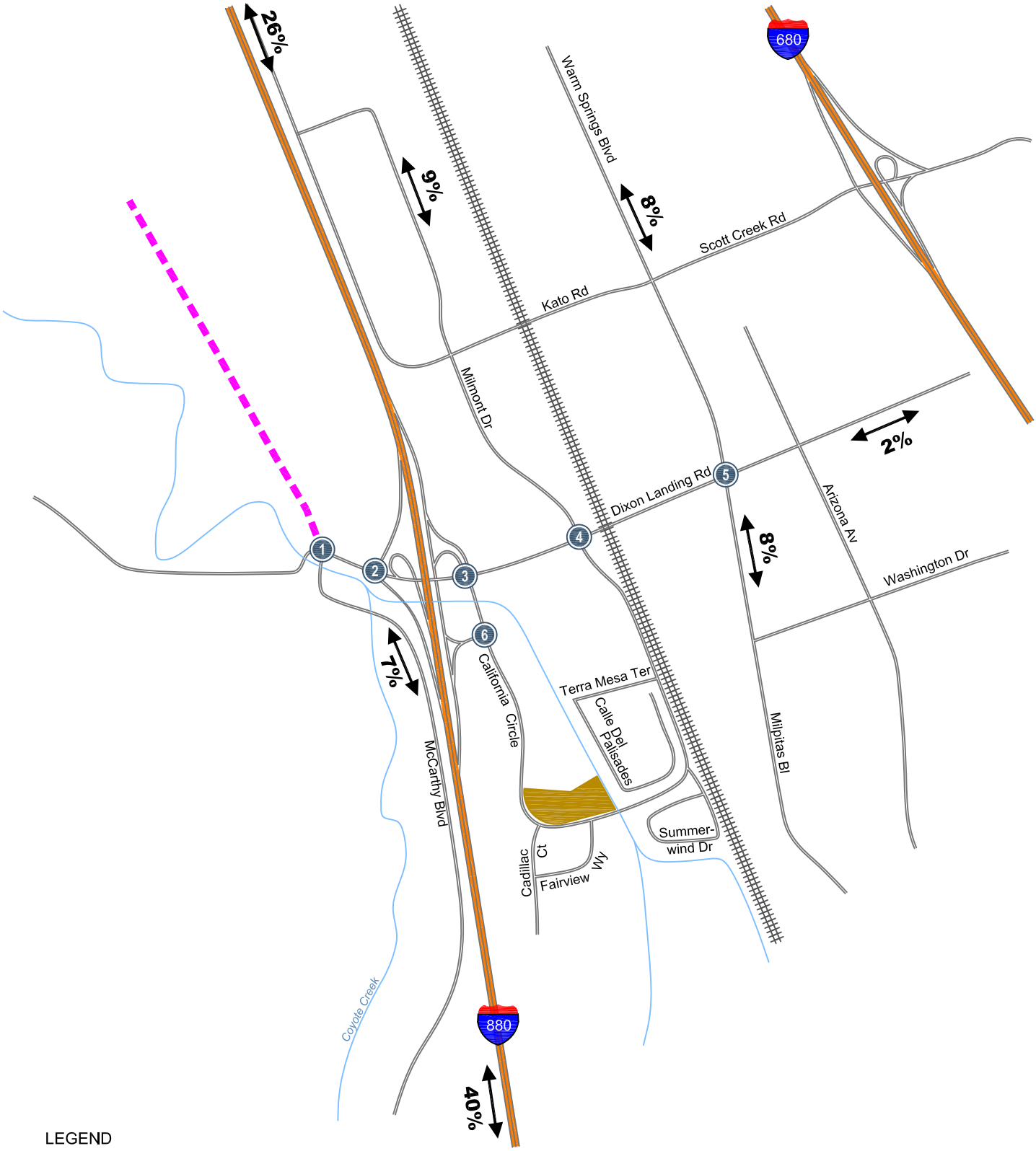


Figure 8
Project Trip Distribution

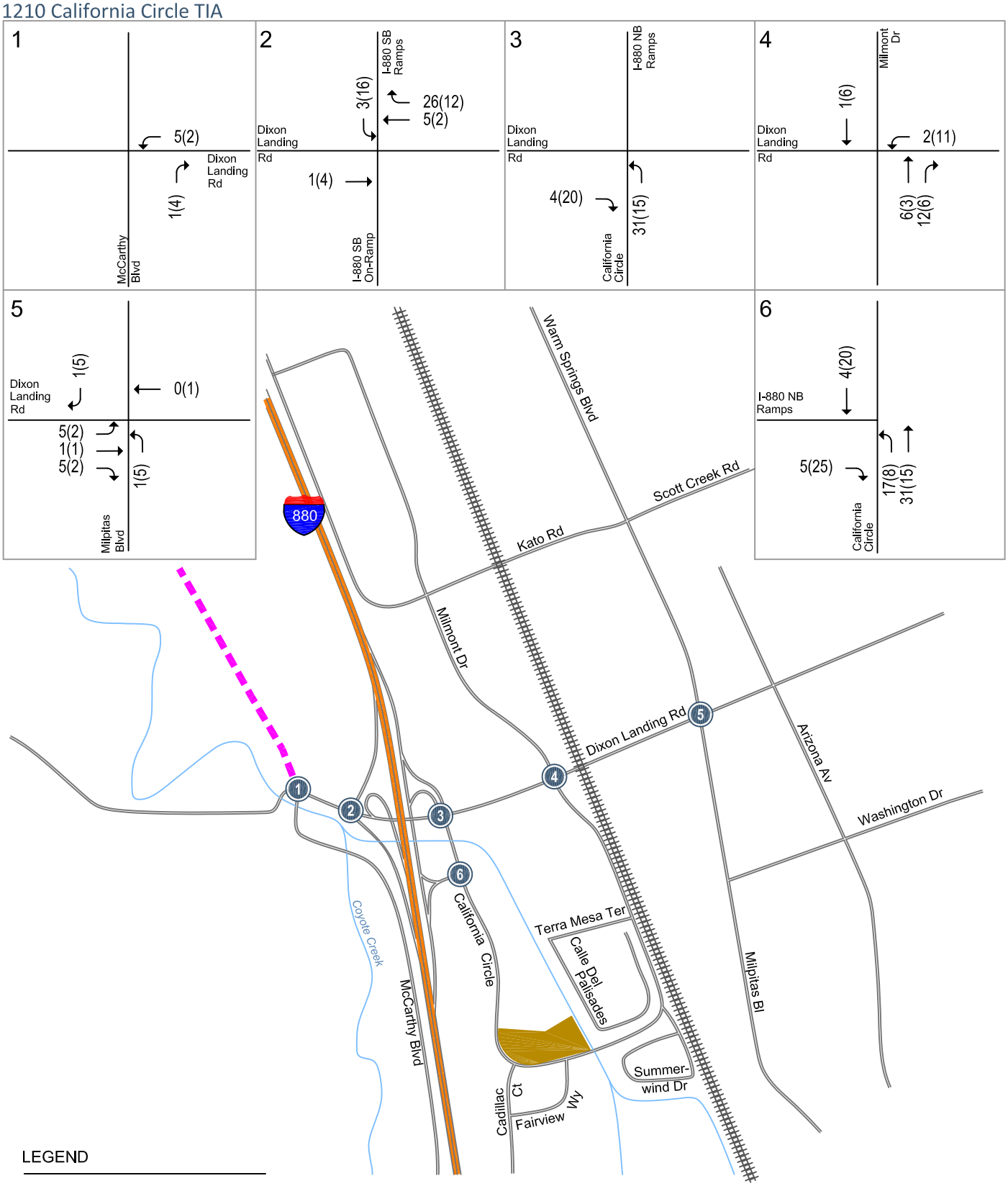


Figure 9
Project Trip Assignment

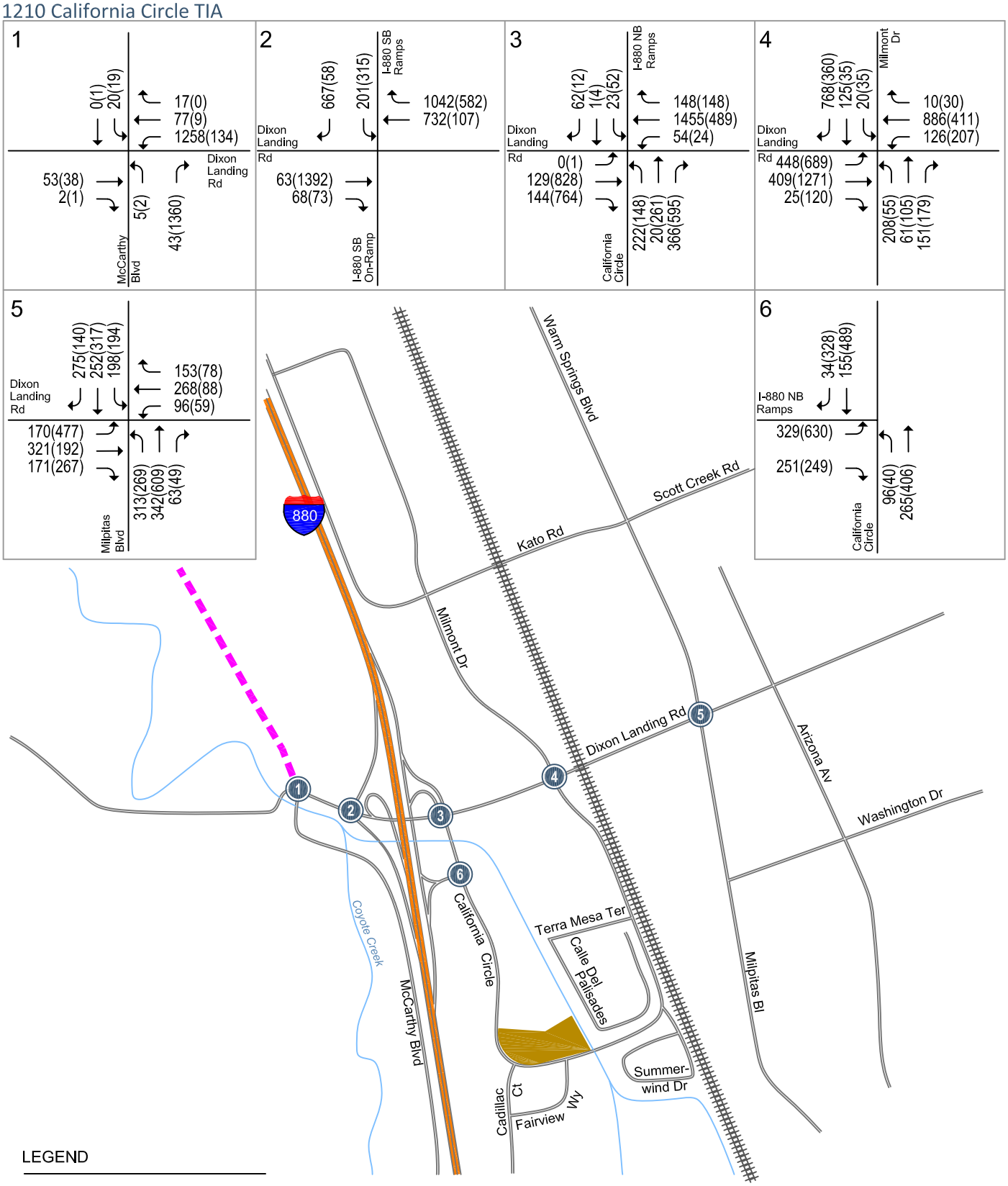


Figure 10
Existing Plus Project Traffic Volumes

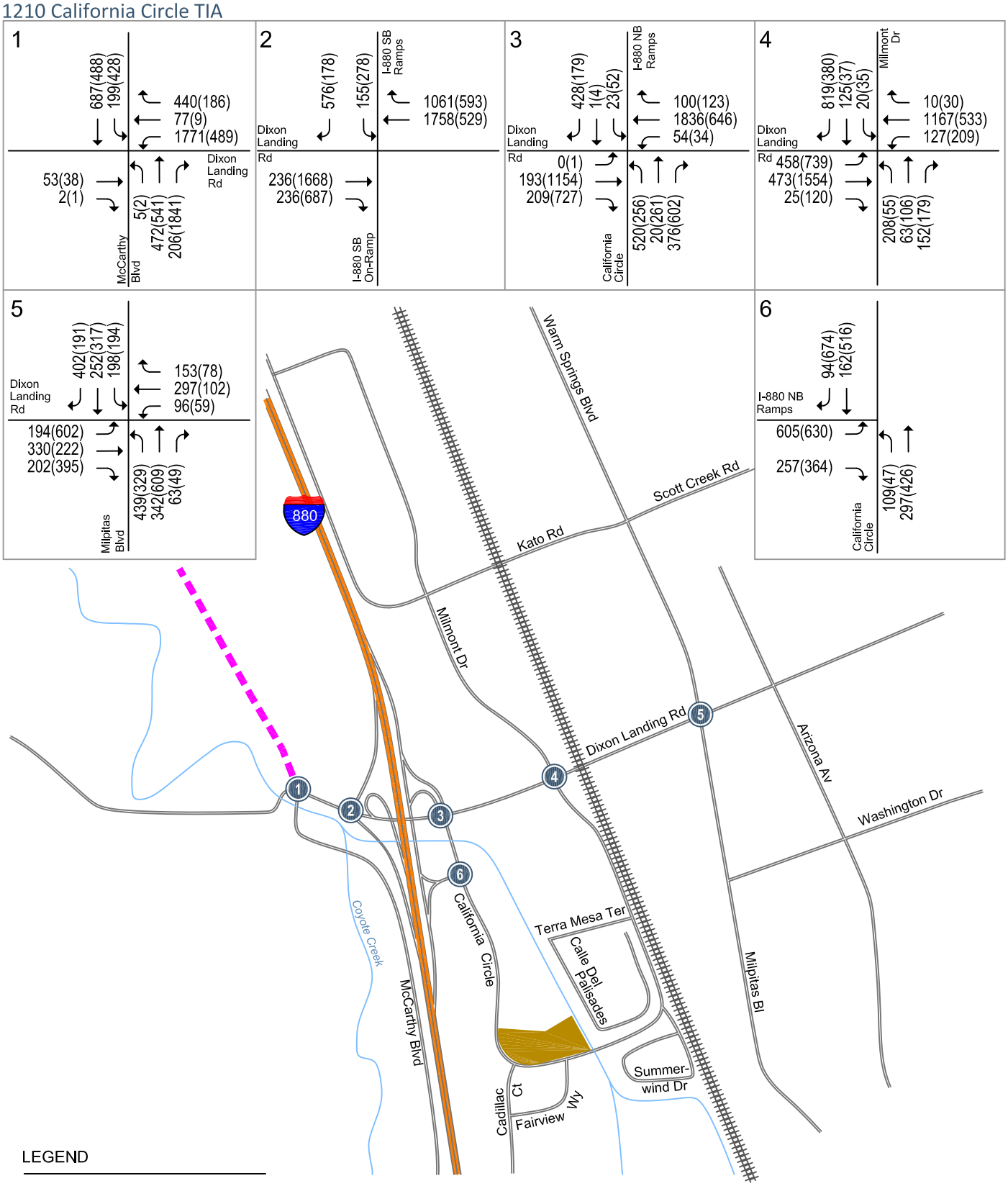


Figure 11
Background Plus Project Traffic Volumes

Under background plus project conditions, the results of the level of service analysis show that the study intersections would continue to operate at an acceptable LOS D or better during both the AM and PM peak hours, with one exception. The intersection of McCarthy Boulevard and Dixon Landing Road would continue to operate at an unacceptable LOS E during the AM peak hour. However, according to the definitions provided in Chapter 1, the proposed project would not create a significant impact at this location because it would not increase the critical delay by more than four seconds.

Table 9
Background Plus Project Intersection Levels of Service

Study Number	Signalized Intersections	Peak Hour	Background		Background + Project			
			Avg. Delay	LOS	Avg. Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	McCarthy Blvd and Dixon Landing Rd	AM	64.4	E	64.8	E	0.5	0.002
		PM	40.5	D	40.5	D	0.0	0.001
2	I-880 SB Ramps and Dixon Landing Rd	AM	12.5	B	12.6	B	0.0	0.001
		PM	7.2	A	7.4	A	0.3	0.001
3	I-880 NB Ramps and Dixon Landing Rd	AM	25.4	C	25.8	C	0.5	0.010
		PM	28.0	C	28.5	C	1.7	0.023
4	Milmont Dr and Dixon Landing Rd	AM	47.6	D	47.6	D	0.0	0.000
		PM	27.9	C	28.4	C	1.0	0.013
5	Milpitas Blvd and Dixon Landing Rd	AM	41.4	D	43.7	D	1.4	0.001
		PM	39.9	D	40.0	D	0.0	0.001
6	California Circle and I-880 NB Ramps	AM	11.7	B	12.0	B	0.6	0.013
		PM	15.6	B	15.9	B	0.3	0.006

5.
Other Transportation Issues

This chapter presents an analysis of other transportation issues associated with the project site, including:

- Vehicular site access and on-site circulation
- Potential impacts to bike, pedestrian and transit facilities

Unlike the level of service impact methodology, which is adopted by the City Council, the analyses in this chapter are based on professional judgment in accordance with the standards and methods employed by the traffic engineering community.

Site Access & Circulation

This section describes the site access and circulation of the proposed residential project. This review is based on a project site plan dated June 19, 2014 by KTGY Group, Inc. for iStar Financial (see Figure 2 above). Because this site plan is conceptual, prior to final design, the site plan should be reviewed by the City traffic engineering staff. All dimensions discussed in this section are approximate.

Site Access

The proposed site plan shows one full-access driveway on California Circle, located at the intersection of Fairview Way. In addition, there is an emergency vehicle access (EVA) proposed on California Circle on the western portion of the project site. The intersection of California Circle and Fairview Way is currently a three-legged intersection with one-way stop control on Fairview Way. After the construction of the proposed driveway, this would become a 4-legged intersection with two-way stop control. The driveway would be approximately 36 feet wide at its throat and accommodate one inbound lane and one outbound lane, in addition to parking lanes with parallel parking on both sides of the street. Opposite the proposed driveway, Fairview Way is approximately 46 feet wide, and includes one inbound lane, two outbound lanes (one left-turn and one right-turn onto California Circle) and two bike lanes.

Based on the trip generation estimates presented above in Table 7, there would be approximately 13 inbound trips and 66 outbound trips from the project during the AM peak hour. This equates to slightly more than an average of one vehicle per minute for the outbound traffic during the AM peak hour. During the PM peak hour, there would be approximately 62 inbound trips and 31 outbound trips, corresponding to an average of roughly one inbound vehicle per minute.

The site plan shows that an additional driveway leading to the property to the north of the project site is also proposed. Per City staff, the property to the north will be conditioned to connect up to the northern project site driveway, which will provide an additional access point to the project site. However, given that it is not yet known when access to enter and drive through the adjacent property would be obtained, this analysis assumes that all traffic would use the California Circle driveway. When additional access to the project site is provided in the future via the adjacent property to the north and that property's California Circle driveways,

then such access would further benefit the access and circulation of the project site. However, based on the projected project trips, the California Circle driveway is adequate to serve the project site on its own.

The queuing storage space at the driveway would be approximately 100 feet (or approximately 4 vehicles), beyond which vehicles would queue up in the cross aisle on-site. Because traffic volumes on California Circle are fairly low, vehicles exiting and entering the site would typically not need to wait long for a gap in traffic on California Circle, and the driveway would operate with little delay. Inbound left turn queues and outbound driveway queues during the AM and PM peak hours would rarely exceed one or two vehicles.

There is currently a two-way center turn lane on California Circle that ends its intersection with Fairview Way. The existing lane striping on the west leg includes both a receiving lane for vehicles turning left onto California Circle from northbound Fairview Way and, adjacent to that, a receiving lane for westbound through traffic on California Circle.

The intersection design would need to provide for eastbound left turns into the project driveway. The existing cross-section of California Circle immediately west of the intersection at Fairview Way and the proposed project driveway is approximately 65 feet wide with a westbound bike lane, two westbound through lanes, a two-way center turn lane, one eastbound through lane, one eastbound right-turn lane, and an eastbound bike lane. The width of California Circle is therefore sufficient to permit restriping of the existing two-way center turn lane to accommodate a left-turn pocket on eastbound California Circle into the project driveway. There is a distance of a little more than 200 feet on California Circle between Fairview Way and a driveway into a property on the southwest quadrant of the intersection. From the existing two-way center turn lane, vehicles are able to turn into that driveway. The distance of 200 feet should be sufficient to accommodate back-to-back eastbound and westbound left-turn pockets of 100 feet each (including taper) for the left-turn movements into the site driveway and into the aforementioned property's driveway, respectively.

> **Recommendation**: Install an eastbound left-turn pocket into the proposed site driveway at the intersection of California Circle and Fairview Way. This can be accomplished within the existing right-of-way, and would entail restriping and implementing minor modifications to the existing two-way center turn lane on the west leg of the intersection.
>
> **Recommendation**: Prior to final design, the overall design and layout of the proposed California Circle and Project Driveway/Fairview Way intersection should be reviewed by City staff.

The site plan currently shows three parallel parking spaces on both sides of the 100-foot section of the main site driveway between California Circle and the first cross aisle on site. Drivers turning right into the main site driveway, whether turning from westbound California Circle or from the cross aisle on site, will not be able to see until the last minute any vehicles that are in the process of parallel parking on the driveway. The very short sight distance may lead to vehicle conflicts and cause obstructions to traffic flow at the main driveway. The obstructions on the main site driveway may create backups of vehicles on site and onto California Circle, thereby obstructing traffic flow on westbound California Circle, as well.

In addition, this driveway will also serve as a primary ingress and egress for all bicycle traffic. A 36-foot cross section on the main site driveway cannot accommodate two travel lanes, two on-street (parallel) parking lanes, and room for two-way bicycle traffic. Eliminating parallel parking along the driveway throat would reduce the potential for conflicts between inbound vehicles, outbound vehicles, inbound bicycles, outbound bicycles, and cars attempting to pull in and out of parking spaces on this short stretch of roadway. The elimination of conflicts and obstructions on this driveway is particularly important, as this driveway is the site's only interface with the off-site street system.

> **Recommendation**: It is recommended that there be no parallel parking on the main site driveway approach to the intersection with California Circle.
>
> **Recommendation**: Prior to final design, the driveway width and turning radii should be measured to confirm that they comply with City of Milpitas standards and are adequate to handle truck traffic. Although there are no sight distance conflicts apparent on the current plan, the project driveways should be reviewed by City staff prior to final design to insure the sight lines are free and clear of obstructions. Any landscaping and signage should be located in such a way as to insure an unobstructed view for drivers entering and exiting the site.

On-Site Circulation

The onsite circulation was reviewed in accordance with generally accepted traffic engineering standards. Generally, the proposed plan would provide adequate connectivity through the site for vehicles, bicycles, and pedestrians. The project would provide three main drive aisles, as follows:

- One main drive aisle (Drive Aisle #1, for reference purposes herein) would be oriented roughly north-south and would connect to California Circle on the south, at the project's driveway, as discussed above. This roadway is shown to be 36 feet wide on the site plan and is shown to include parallel parking for guests on both sides. Allowing 8 feet for each parking lane, the travel lanes would therefore be 10 feet wide. Three dead-end secondary drive aisles would lead off of Drive Aisle #1. Sidewalks are provided on both sides, except for one stretch on the west side of the street near the northern boundary of the project site.

- A second main drive aisle would be perpendicular to Drive Aisle #1 and intersect it approximately 100 feet from the California Circle access point (Drive Aisle #2, for reference purposes herein). This cross aisle would be 24 feet wide for the first 200 feet, and would then widen to allow parallel parking on one side of the street. On the segment where this cross aisle curves to the north, three guest parking stalls oriented at 90 degrees to the roadway are provided. Three dead-end secondary drive aisles would lead off of Drive Aisle #2. No sidewalks are shown on either side of this roadway.

- A third main drive aisle (Drive Aisle #3) runs primarily east-west and intersects Drive Aisle #1 approximately 250 feet north of California Circle. Like the Drive Aisle #1, this roadway would be 36 feet wide with parallel parking on both sides, 10-foot wide travel lanes, and sidewalks provided on both sides. Four dead-end secondary drive aisles would lead off of Drive Aisle #3. Drive aisles #2 and #3 connect on the western portion of the site so that a loop is formed to provide connectivity and improve circulation patterns.

The site plan indicates there would be a total of ten dead-end drive aisles, ranging in length from approximately 120 feet to 150 feet. The dead-end aisles would provide direct access to residential units, all of which would have attached garages. These dead-end aisles will be 20 feet wide and will not provide on-street parking or sidewalks, except for one. The dead-end aisle located at the northeast end of Drive Aisle #1 will provide 90-degree guest parking.

Dead-end roads are generally undesirable because drivers can enter the road, and upon discovering that there is no available parking, must back out or conduct three-point turns in order to drive forward out of the roadway. However, in residential areas where parking is designated for specific residences, issues with dead end roads are primarily confined to large trucks (e.g., garbage collection, delivery vehicles, moving vans, and fire trucks).

It is important, though, to provide enough space for the vehicles backing out of the garage of the last townhouse on each side of each aisle to have enough space to complete a three-point turn. It is unclear from the conceptual site plan if there will be enough room at the end of each dead-end roadway for the cars from the last units to back out of their individual driveway, make a turn while still in reverse, and then drive forward out of the drive aisle.

On the dead-end drive aisle that intersects Main Drive Aisle #1 closest to the northern edge of the parcel, there are 8 guest parking stalls oriented at 90 degrees to the roadway. The site plan indicates that, on this aisle, the pavement will be extended a few feet to ensure that the vehicle using the last parking space will be able to back out of the parking space and then drive forward out of the drive aisle.

Recommendation: Prior to final design, the project should consult with City staff to confirm that the design is acceptable for garbage collection and emergency vehicle access.

Recommendation: Prior to final design, City staff should review the onsite circulation for parking and drive aisle widths, sight distance conflicts, and truck accessibility.

Recommendation: Prior to final design, the project should ensure that adequate space is provided for the residents of the last townhouse on each drive aisle to back out of their garage and complete a three-point turn so that they can drive forward out of the drive aisle.

The speeds of vehicles on site would be relatively low and suitable for shared use of the project's roadways between bikes and motor vehicles.

Pedestrian, Bicycle & Transit Facilities

According to the U.S. Census, pedestrian trips comprise approximately 1.3% of the total commute mode share in the City of Milpitas. For the proposed project, this would equate to approximately 1 or 2 new pedestrian commute trips during the AM and PM peak hours. In addition, the project would generate some pedestrian trips to/from transit stops (see further discussion below), schools, shopping centers, and recreational areas. There are existing sidewalks on California Circle, Milmont Drive, and Dixon Landing Road in the project vicinity. Because the proposed project would not create pedestrian demand beyond the current capacity of the existing sidewalks, the proposed project would not result in any significant impacts to pedestrian facilities.

The current sidewalk adjacent to the project site on California Circle does not run parallel to the roadway, it winds along the planting strip sometimes right next to the roadway and sometimes as much as 15 feet away from the roadway, providing space for street trees between the sidewalk and the street. Because the existing building on the site has three driveways on California Circle that will not be used by the residential project, there are existing curb cuts and discontinuities in the sidewalk that will need to be addressed. According to the project applicant, a new sidewalk will be constructed along California Circle.

In addition, there are crosswalks with ADA-compliant ramps at all of the nearby signalized intersections and also at the unsignalized intersection of California Circle and Fairview Way, where the project's driveway will be located.

> **Recommendation:** The project should provide a crosswalk and ADA-compliant ramps across its driveway, so that there are crosswalks across all four approaches of the California Circle and Fairview Way intersection.

Bike lanes are provided on California Circle and Milmont Drive in the vicinity of the project site. There are also bike lanes on Fairview Way and Cadillac Court, both of which intersect California Circle directly across from the project site. A multi-use trail also runs along Lower Penitencia Creek with paths on both sides of the creek from Dixon Landing Road to North Abbott Avenue along the eastern border of the project site.

According to the U.S. Census, bicycle trips comprise less than 1% of the total commute mode share in the City of Milpitas. For the proposed project, this would equate to approximately 1 or 2 new bike trips during the AM and PM peak hours. The low volume of bicycle trips generated by the project would not exceed the bicycle-carrying capacity of streets surrounding the site, and the increase in bicycle trips would not, by itself, require new off-site bicycle facilities. In compliance with VTA bike parking guidelines, each of the residential units would have a garage, which would meet the requirement for Class I parking (lockers or guarded parking). VTA also recommends that the project provide one Class II space (bike racks) for each 15 townhouse units.

> **Recommendatio**n: The project should provide bike racks in accordance with VTA requirements. Bike parking spaces are not shown on the current plans. These should be placed in accessible, secure, and well-lit locations.

The current transit service in the project vicinity consists of VTA and AC Transit operated bus routes. The closest bus stops are located on Dixon Landing Road and Milpitas Boulevard. These stops are approximately 1.1 miles away from the project site. According to the U.S. Census, transit trips comprise approximately 3% of the total commute mode share in the City of Milpitas. For the proposed project, this would equate to approximately 2 and 3 new transit trips during the AM and PM peak hours, respectively. This volume of riders would not create sufficient demand to justify the extension of bus service to the area. However, there are other developments along California Circle and Milmont Drive that would also benefit from improved transit access.

When BART service becomes operational, it would make sense for VTA to provide additional feeder service to the Milpitas BART station from some of the neighborhoods that are currently poorly served by transit. Without expanded bus service, all potential BART patrons from the neighborhoods along California Circle and

Milmont Drive would need to drive to the nearest BART station. This area is a logical new market for VTA to serve, in order to provide local bus service and improved access to both VTA's light rail service and BART service.

Recommendation: It is recommended that the City of Milpitas coordinate with VTA to explore the possibility of installing bus stops closer to the project site.

6. Cumulative Conditions

This chapter presents a summary of the traffic conditions that would occur under cumulative conditions. The analysis of cumulative conditions was conducted based on projected roadway segment link volumes using year 2030 land use data. AM and PM peak hour volumes were developed using the City of Milpitas Travel Demand Forecast (TDF) model, which is a sub-area model of the VTA Congestion Management Program TDF model.

2030 Network Assumptions

The year 2030 roadway network includes planned transportation improvements. The improvements included in the City of Milpitas TDF model have a high probability of receiving funding in the future. Within the study area, the following improvements were included:

- **Calaveras Boulevard.** Calaveras Boulevard will be widened to six lanes between Milpitas Boulevard and Abel Street. Operational improvements are also planned for intersections on Calaveras Boulevard between I-680 and I-880.
- **Montague Expressway.** Montague Expressway will be widened to provide eight lanes between Great Mall Parkway and I-880.
- **McCarthy Boulevard.** McCarthy Boulevard will be extended north of Dixon Landing Road to connect to Fremont Boulevard. The planned extension would include two northbound and two southbound travel lanes.

Planned improvements outside the study area are described in the VTA Valley Transportation Plan (VTP) 2030, which is on file with the City of Milpitas. It should be noted that some VTP 2030 projects in the City of Milpitas have been identified for VTP 2030 funding. However, the City is still responsible for the 20 percent local match. Therefore, additional monetary contributions for these projects are necessary.

Year 2030 Traffic Volumes

The existing land use on the project site is a single building with approximately 120,576 square feet of space designed for manufacturing, office use, and/or R&D. Because the building could be reoccupied without the need for discretionary review by the City of Milpitas, the cumulative scenario needs to account for the trips generated by full occupancy of the building. For trip generation purposes, we have used the ITE land use code for Industrial Parks (130) as the most appropriate.

The proposed project would replace the existing land use with up to 170 townhomes. For the purposes of estimating the effect of the proposed land use change, the traffic impacts of the proposed project were evaluated relative to the existing land use. The net project traffic volumes for the year 2030 analysis were calculated using a three-step process as follows:

- **Traffic Generation.** A comparison of the trip generation between the proposed residential project and existing industrial land uses is shown in Table 10. The proposed change in land use would decrease the trip generation from the site by 20 trips during the AM peak hour and 10 trips during the PM peak hour. Total daily traffic from the site would increase by 197 trips.
- **Traffic Distribution & Assignment.** The directions of approach and departure of the proposed and existing land uses were estimated along major travel corridors. Because traffic from the existing industrial and proposed residential land uses have different origins and destinations, separate trip distributions were developed for each use. The peak hour trips generated by the proposed and existing land uses were assigned to specific street segments in accordance with their respective trip distributions.
- **Traffic Volume Tabulation.** For each roadway segment link, the projected peak hour traffic volumes with the proposed project were estimated by subtracting the trips generated by the existing land use from year 2030 traffic volumes, and adding the estimated traffic generated by the proposed project.

Table 10
Year 2030 Project Trip Generation

						AM Peak Hour				PM Peak Hour			
Land Use	**Size**	**Unit**	**Land Use Code**	**Daily Rate**	**Daily Trips**	**Rate**	**In**	**Out**	**Total**	**Rate**	**In**	**Out**	**Total**
Existing Use:													
Industrial Park Building	120.6	KSF	130	6.83	824	0.82	81	18	99	0.85	22	81	103
Proposed Use:													
Townhouses	170	d.u.	230	6.00	1,021	0.46	13	66	79	0.55	62	31	93
Net Project Trips: *(Proposed less Existing Trips)*					**197**		**-68**	**48**	**-20**		**41**	**-51**	**-10**

Note: Rates are from ITE *Trip Generation Manual, 9th Edition* , 2012. For existing use, Industrial Park (130) was used. For proposed use, Condominium/Townhouses (230) with fitted curve equation was used.

Year 2030 Traffic Impacts

Year 2030 conditions with the proposed project were evaluated relative to year 2030 conditions with the existing industrial park land use in order to determine potential impacts. The impacts of the proposed land use change are summarized in Tables 11 and 12 for the AM and PM peak hours, respectively. Although many of the study segments are projected to operate at LOS E or F during the AM and PM peak hours, according to the City of Milpitas roadway segment impact criteria described in Chapter 1, the proposed land use change would not result in any significant impacts to roadway segments. The net addition of project traffic would be less than one percent for each roadway segment that would operate below its LOS standard.

Table 11
Year 2030 AM Peak Hour LOS

				LOS	Volumes		Project Trips		Capacity		V/C		LOS		Adverse
Segment	From	To	Direction	Standard	No Project	Project	abs	% (a)	No Project	Project	No Project	Project	No Project	Project	Impact ?
Dixon Landing Road															
	McCarthy Boulevard	I-880	EB	D	1,103	1,084	-19	-0.7%	2,700	2,700	0.41	0.40	A	A	no
	I-880	Milmont Drive	EB	D	1,327	1,327	0	0.0%	1,800	1,800	0.74	0.74	C	C	no
	Milmont Drive	N. Milpitas Boulevard	EB	D	1,325	1,334	9	0.5%	1,800	1,800	0.74	0.74	C	C	no
	McCarthy Boulevard	I-880	WB	D	2,371	2,393	22	0.8%	2,700	2,700	0.88	0.89	D	D	no
	I-880	Milmont Drive	WB	D	2,147	2,147	0	0.0%	1,800	1,800	1.19	1.19	F	F	no
	Milmont Drive	N. Milpitas Boulevard	WB	D	2,180	2,167	-13	-0.7%	1,800	1,800	1.21	1.20	F	F	no
McCarthy Boulevard															
	Dixon Landing Road	McCarthy Ranch	NB	D	504	503	-1	-0.1%	1,800	1,800	0.28	0.28	A	A	no
	McCarthy Ranch	Ranch Drive (North)	NB	D	952	951	-1	-0.1%	1,800	1,800	0.53	0.53	A	A	no
	Dixon Landing Road	McCarthy Ranch	SB	D	2,028	2,033	5	0.3%	1,800	1,800	1.13	1.13	F	F	no
	McCarthy Ranch	Ranch Drive (North)	SB	D	1,806	1,811	5	0.3%	1,800	1,800	1.00	1.01	F	F	no
Milpitas Boulevard															
	Scott Creek Road	Dixon Landing Road	NB	D	1,573	1,577	4	0.2%	1,800	1,800	0.87	0.88	D	D	no
	Dixon Landing Road	Jacklin Road	NB	D	1,892	1,885	-7	-0.4%	1,800	1,800	1.05	1.05	F	F	no
	Scott Creek Road	Dixon Landing Road	SB	D	1,998	1,995	-3	-0.2%	1,800	1,800	1.11	1.11	F	F	no
	Dixon Landing Road	Jacklin Road	SB	D	1,692	1,695	3	0.2%	1,800	1,800	0.94	0.94	E	E	no

(a) Project trips as a percent of roadway capacity

Table 12
Year 2030 PM Peak Hour LOS

Segment	From	To	Direction	LOS Standard	Volumes		Project Trips		Capacity		V/C		LOS		Adverse Impact ?
					No Project	Project	abs	% (a)	No Project	Project	No Project	Project	No Project	Project	
Dixon Landing Road															
	McCarthy Boulevard	I-880	EB	D	1,380	1,394	14	0.5%	2,700	2,700	0.51	0.52	A	A	no
	I-880	Milmont Drive	EB	D	2,293	2,293	0	0.0%	1,800	1,800	1.27	1.27	F	F	no
	Milmont Drive	N. Milpitas Boulevard	EB	D	2,304	2,295	-9	-0.5%	1,800	1,800	1.28	1.28	F	F	no
	McCarthy Boulevard	I-880	WB	D	727	687	-40	-1.5%	2,700	2,700	0.27	0.25	A	A	no
	I-880	Milmont Drive	WB	D	1,663	1,663	0	0.0%	1,800	1,800	0.92	0.92	E	E	no
	Milmont Drive	N. Milpitas Boulevard	WB	D	1,571	1,578	7	0.4%	1,800	1,800	0.87	0.88	D	D	no
McCarthy Boulevard															
	Dixon Landing Road	McCarthy Ranch	NB	D	2,081	2,085	4	0.2%	1,800	1,800	1.16	1.16	F	F	no
	McCarthy Ranch	Ranch Drive (North)	NB	D	1,936	1,940	4	0.2%	1,800	1,800	1.08	1.08	F	F	no
	Dixon Landing Road	McCarthy Ranch	SB	D	787	787	0	0.0%	1,800	1,800	0.44	0.44	A	A	no
	McCarthy Ranch	Ranch Drive (North)	SB	D	1,254	1,254	0	0.0%	1,800	1,800	0.70	0.70	B	B	no
Milpitas Boulevard															
	Scott Creek Road	Dixon Landing Road	NB	D	2,058	2,056	-2	-0.1%	1,800	1,800	1.14	1.14	F	F	no
	Dixon Landing Road	Jacklin Road	NB	D	1,911	1,914	3	0.2%	1,800	1,800	1.06	1.06	F	F	no
	Scott Creek Road	Dixon Landing Road	SB	D	1,795	1,799	4	0.2%	1,800	1,800	1.00	1.00	E	E	no
	Dixon Landing Road	Jacklin Road	SB	D	2,069	2,063	-6	-0.3%	1,800	1,800	1.15	1.15	F	F	no

(a) Project trips as a percent of roadway capacity