

B. TRANSPORTATION AND CIRCULATION (TR)

This section of the EIR documents the transportation-related impacts associated with the proposed Four Creeks Rezoning project and subsequent development of the Tumbling Waters, Creekstön, and Broad Street Parcels project components.

Access to the Tumbling Waters development would be provided via the extension of Sacramento Drive from its current terminus, near Via Esteban, to Orcutt Road (refer to Figure III-5). Access to the Creekstön development would be provided via two new driveways, one on Orcutt Road located across from McMillan Avenue, and one on Broad Street located approximately 860 feet south of Orcutt Road (refer to Figure III-9). A site plan is not available for the Broad Street Parcels. However, vehicular access from the north is assumed to be provided via the existing southbound left-turn pocket at the Broad Street/Rockview Place intersection.

The impacts of the proposed project (Tumbling Waters, Creekstön, and the Broad Street Parcels) to the transportation system were evaluated during the evening (PM) peak hour for the following locations:

Intersections

1. Broad Street (SR 227)/South Street
2. Broad Street (SR 227)/Orcutt Road
3. Broad Street (SR 227)/Capitolio Way
4. Broad Street (SR 227)/Prado Road Extension (Future Intersection)
5. Broad Street (SR 227)/Industrial Way
6. Duncan Road/Sacramento Drive Extension/Orcutt Road
7. Laurel Lane/Orcutt Road
8. Laurel Lane/Johnson Avenue

Roadway Segments

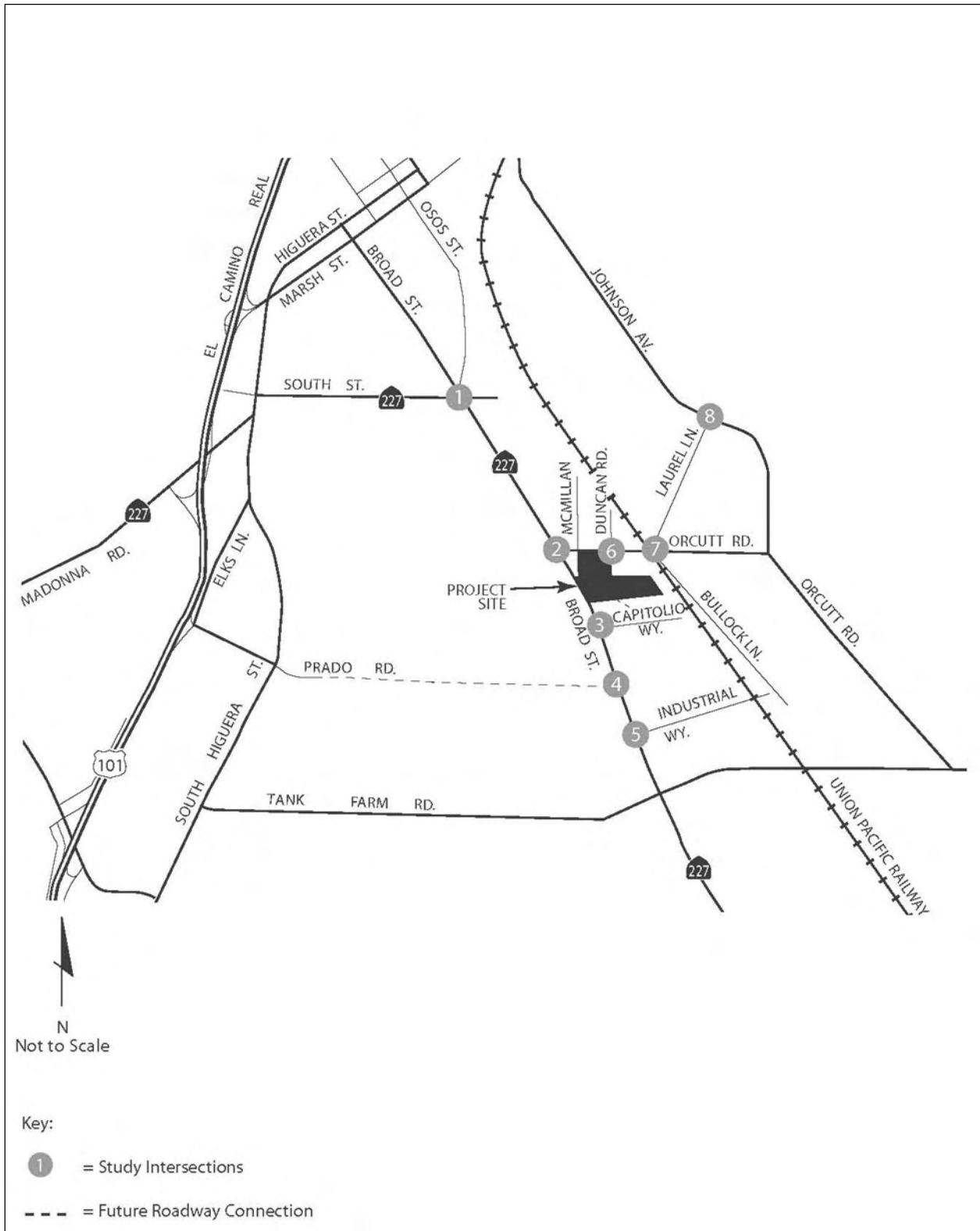
1. Broad Street (SR 227) – South of Orcutt Road
2. Orcutt Road – Broad Street to Laurel Lane
3. Laurel Lane – Orcutt Road to Johnson Avenue

1. Existing Conditions

a. Road Network

The project is located at the southeast corner of the Broad Street (SR 227) and Orcutt Road intersection. Regional access to the site is provided via various interchanges on US 101 at Broad Street, Marsh Street, and Madonna Road. Local access to the site is provided via Broad Street, Orcutt Road, Laurel Lane, and Johnson Avenue. Figure TR-1 shows the streets within the study area and the study intersections.

U.S. Highway 101 (U.S. 101) is a north-south, four-lane freeway that travels through the City of San Luis Obispo. Existing access from U.S. 101 to the project site is provided via interchanges at Broad Street, Marsh Street, and Madonna Road.



Source: Fehr & Peers, January 2005

STUDY AREA ROAD NETWORK
FIGURE TR-1

Broad Street is a north-south roadway that travels through the city. South of its intersection with South Street, Broad Street is designated State Route 227 (SR 227). Broad Street is four lanes wide in the vicinity of the project site. One project driveway is proposed on Broad Street.

Orcutt Road is a two-lane east-west roadway between Broad Street and Johnson Avenue. Two project driveways are proposed on Orcutt Road.

Laurel Lane is a four-lane north south road that provides a connection between Orcutt Road and Johnson Avenue.

Johnson Avenue is a north-south roadway that parallels Broad Street and provides a direct connection to downtown San Luis Obispo. Johnson Avenue is four lanes wide west of Laurel Lane and two lanes wide east of Laurel Lane.

b. Pedestrian and Bicycle Facilities

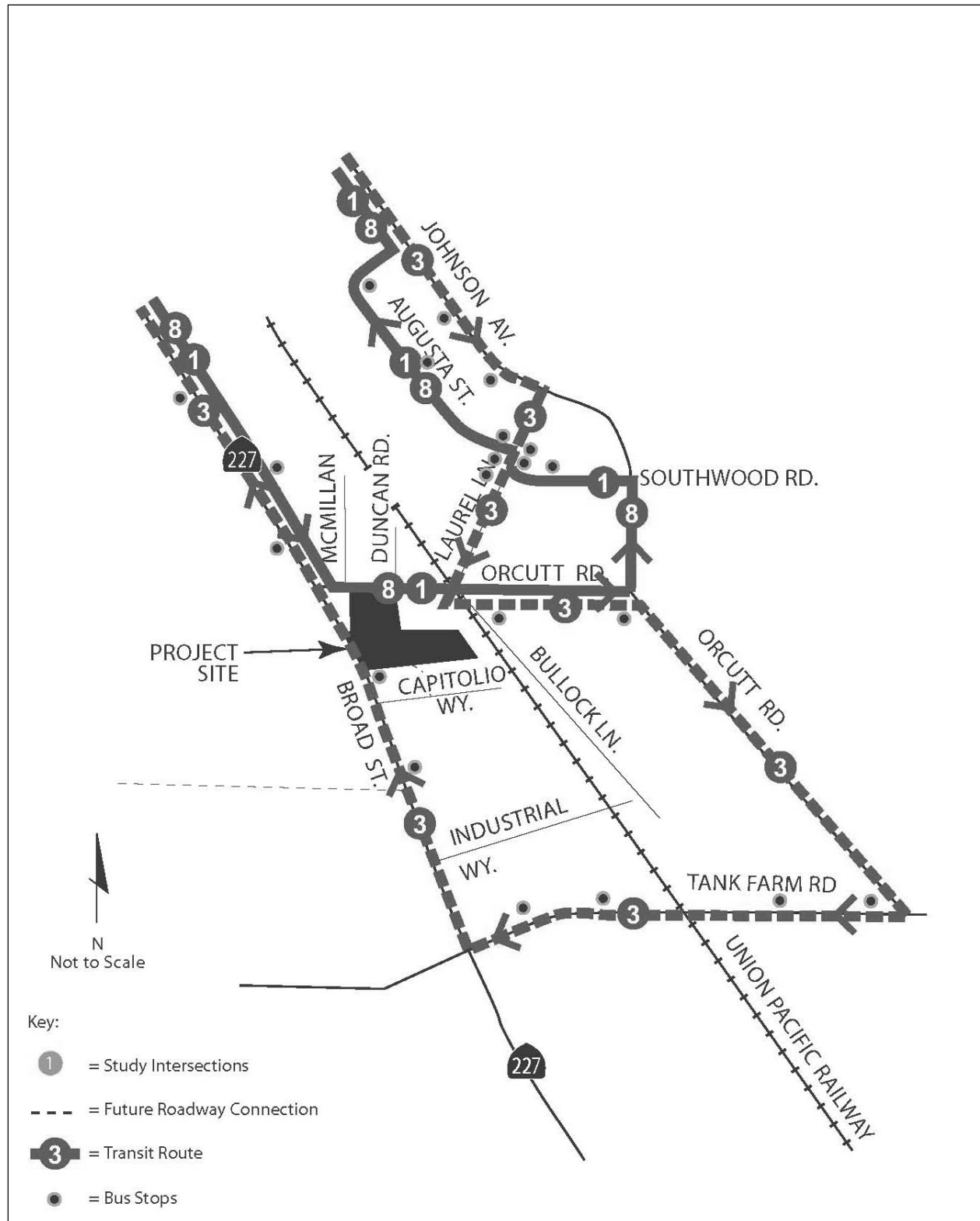
Existing pedestrian facilities are comprised of sidewalks, curb ramps, crosswalks, and pedestrian signals at signalized intersections. Sidewalks are provided on both sides of Broad Street north of Orcutt Road in the immediate vicinity of the project site. Sidewalks are provided on the east side of Broad Street between Orcutt Road and Capitolio Way. The sidewalk on the west side of Broad Street continues halfway to Capitolio Way. A sidewalk is provided on the north side of Orcutt Road (except across the at-grade rail crossing). The sidewalk on the south side of Orcutt Road extends from Broad Street to its terminus at McMillan Avenue and continues east of Laurel Lane.

Crosswalks and/or pedestrian push buttons are provided at the signalized study intersections. A pedestrian refuge island with crosswalks is provided at the Laurel Lane/Orcutt Road intersection for pedestrians to cross Orcutt Road.

Bicycle facilities include the network of bike paths, bike lanes, and bike routes surrounding the project site. Bike paths (Class I) are paved pathways separated from roadways. Bike lanes (Class II) are lanes for bicyclists adjacent to the outside vehicle travel lanes. These lanes have special lane markings, pavement legends, and signage. Bike routes are generally located on low traffic volume streets that provide alternative routes for recreational, and in some cases, commuter and school children cyclists. These facilities are designated Class III and are signed for bike use, but have no separated bike right-of-way or lane striping. The Railroad Recreational Trail, a Class I bike path, is located on the east side of the Union Pacific Rail Road tracks. This bike path extends northwards from the north side of Orcutt towards downtown San Luis Obispo. Bike lanes (Class II) are striped in both directions on Broad Street, Laurel Lane, Johnson Avenue, South Street (east of Broad Street), and the westbound lane of Orcutt Road. A discontinuous Class III bicycle route runs along the narrow shoulder of the eastbound lane of Orcutt Road.

c. Transit Facilities

San Luis Obispo Transit operates bus service and Amtrak operates passenger rail service in the vicinity of the proposed project. Three of the eight fixed bus routes directly serve the project site: Routes 1, 3, and 8. Figure TR-2 shows the transit routes within the study area. The following is a brief description of the key transit routes.



Source: Fehr & Peers, May 2005

EXISTING TRANSIT FACILITIES
FIGURE TR-2

Route 1 provides service to the downtown transit center and to University Square. Route 1 travels in a southbound direction on Broad Street, turns onto Orcutt Road, and travels northward on Johnson Avenue. Bus stops are provided on Broad Street at Sweeny Lane and on Orcutt Road at McMillan Avenue near the project site. Service is provided at 60-minute headways between 6:47 AM and 6:09 PM on weekdays only.

Route 3 provides service between downtown and the Marigold Center. Near the site, Route 3 operates in a southbound direction by traveling on Johnson Avenue, Laurel Lane, and Orcutt Road east of Laurel Lane. Route 3 continues southward to Tank Farm Road and heads northbound on Broad Street. Bus stops are provided on Broad Street north of Hopkins Lane and at Rockview Place. Service is provided from 6:31 AM to 6:31 PM at 30-minute headways on weekdays. On weekends, service is provided at 30-minute headways between 7:45 AM and 5:31 PM.

Route 8 provides weekday only bus service to downtown and to Orcutt Road and Johnson Avenue. Route 8 operates an identical route as Route 1. Weekday service is provided at 30-minute intervals between 6:15 PM to 8:28 PM.

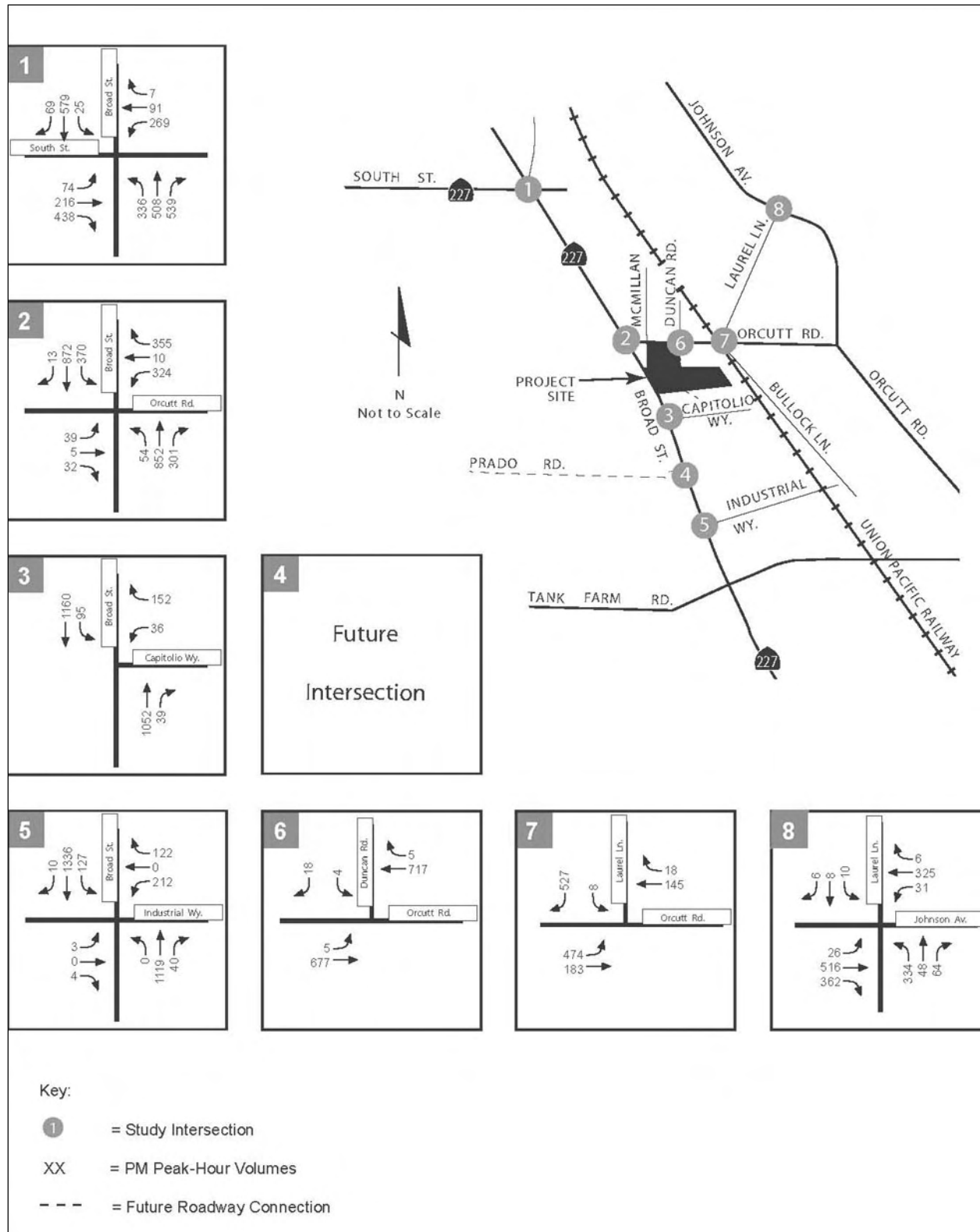
Amtrak provides interstate passenger rail service. Amtrak operates on the Union Pacific Railway located adjacent to the project site. The San Luis Obispo station is located at 1011 Railroad Avenue, north of the project site. The San Luis Obispo station serves the Coast Starlight route (service between Seattle and Los Angeles) and the Pacific Surfliner route (service between Paso Robles and San Diego).

d. Existing Traffic Volumes and Intersection Configurations

Existing evening (PM) peak hour traffic volumes at four intersections were obtained from the Orcutt Area Specific Plan Study currently being prepared by Associated Transportation Engineers. Traffic counts were conducted at three additional intersections and the three roadway segments to supplement this information (refer to Appendix E). All traffic counts were conducted in March, June, and September 2004. The existing turning movement volumes at each of the study intersections are presented on Figure TR-3 and the corresponding lane configurations and traffic control devices are presented on Figure TR-4.

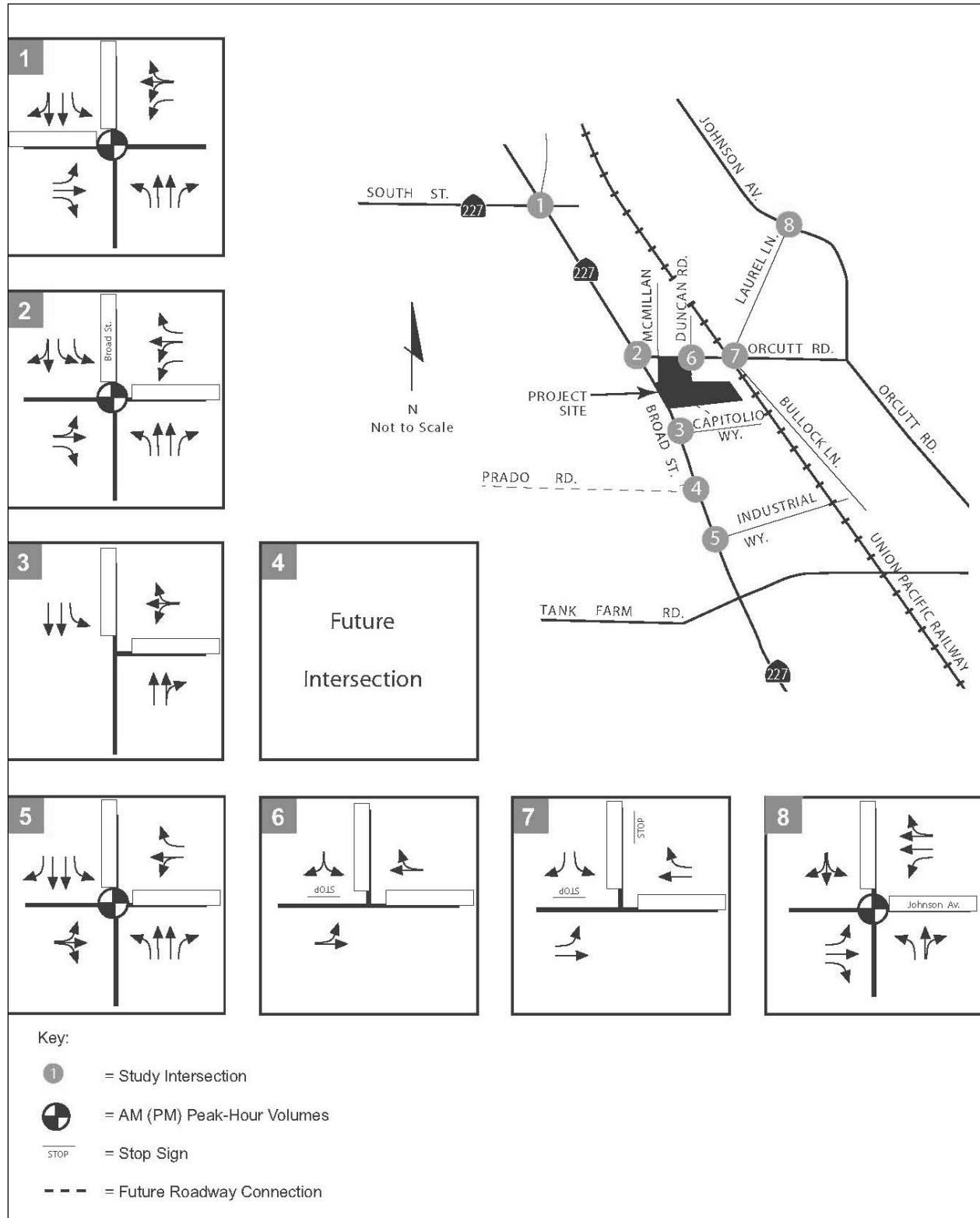
e. Existing Levels of Service

The operation of intersections and roadway segments is measured in terms of Level of Service (LOS). LOS is a qualitative measure of traffic conditions ranging from LOS A (representing free flowing conditions with little or no delay) to LOS F (representing congested conditions with long delays and lengthy vehicle queues). The City maintains LOS D as the minimum acceptable level of service for intersections (i.e., LOS E and F are considered unacceptable operations). Although Caltrans strives to maintain LOS C operations on state-operated facilities, LOS D is considered acceptable in developed areas such as San Luis Obispo. Operational analysis of the study intersections is based on the methods and procedures described in the 2000 *Highway Capacity Manual (HCM)* published by the Transportation Research Board.



Source: Fehr & Peers, January 2005

EXISTING PM PEAK-HOUR VOLUMES
FIGURE TR-3



**EXISTING LANE CONFIGURATIONS
FIGURE TR-4**

1) Existing Intersection Operations

Signalized intersection operations were analyzed using the SYNCRHO software program to illustrate the effect of adjacent signalized intersections. This program is a comprehensive analysis tool that produces a variety of output data for intersection and arterial operating performance including the effectiveness of signal interconnection. Table TR-1 presents the service level criteria used for signalized intersections based on average control delay per vehicle as described in Chapter 16 of the 2000 HCM, where control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration.

TABLE TR-1
Signalized Intersection Service Level Criteria

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 10
B	Operations with low delay occurring with good progression and/or short cycle lengths.	>10 and ≤ 20
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	>20 and ≤ 35
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	>35 and ≤ 55
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	>55 and ≤ 80
F	Operations with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	>80

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, 2000

Unsignalized intersections were analyzed using the methodology described in Chapter 17 of the 2000 HCM. This methodology calculates the overall intersection control delay for intersections controlled by stop signs. At two-way or side street-controlled intersections, the control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. Table TR-2 presents the ranges of control delay and corresponding levels of service for unsignalized intersections.

**TABLE TR-2
Unsignalized Intersection Service Level Criteria**

Level of Service	Description	Average Total Delay Per Vehicle (Seconds)
A	Little or no delay	≤ 10
B	Short delays	>10 and ≤ 15
C	Average delays	>15 and ≤ 25
D	Moderate delays	>25 and ≤ 35
E	Lengthy delays.	>35 and ≤ 50
F	Intolerable delays.	>50

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, 2000.

The existing peak hour volumes, lane configurations, and signal timings were input to the SYNCHRO program to calculate the level of service at each of the signalized and unsignalized study locations. Table TR-3 summarizes the existing intersection PM peak hour Levels of Service. The level of service calculations are contained in Appendix E.

The signalized intersections are operating at acceptable levels of service, LOS C, or better. The unsignalized intersections are operating at an overall LOS A during the PM peak hour. A detailed review of the LOS calculation worksheet shows that the southbound left-turn from Laurel Lane onto Orcutt Road, is operating at LOS E. The City recently installed a stop sign for westbound Orcutt Road to address safety concerns and to better designate right-of-way.

**TABLE TR-3
Existing Intersection Levels of Service**

Intersection	Traffic Control	PM Peak Hour	
		Average Delay (sec/veh) ¹	LOS ²
1. Broad St./South St.	Signal	31.7	C
2. Broad St./Orcutt Rd.	Signal	20.7	C
3. Broad St./Capitolio Wy.	Two-Way Stop Controlled ¹	2.7 (30.8)	A (D)
4. Broad St./Prado Rd. Extension	N/A	N/A	N/A
5. Broad St./Industrial Wy.	Signal	18.6	B
6. Duncan Rd./Orcutt Rd./ Sacramento Dr.	Two-Way Stop Controlled ¹	0.4 (18.9)	A (C)
7. Laurel Ln./Orcutt Rd.	Two-Way Stop Controlled ^{1, 3}	10.1 (48.8)	A (E)
8. Laurel Ln./Johnson Ave.	Signal	14.7	B

¹ Overall intersection delay is presented followed by delay for the most severely impacted turning movement in parentheses.
² LOS = Level of Service
³ Stop sign was recently installed for westbound Orcutt Road.

2) Existing Roadway Segment Operations

The operations of roadway segments are generally evaluated by comparing the measured (counted) volume to the threshold volumes. Table TR-4 presents threshold volumes from Florida’s Department of Transportation, based on the roadway facility type and number of lanes, for various types of roadways. These threshold volumes include adjustments for divided or undivided facilities and for roadways with left-turn lanes. These threshold volumes are approximate in nature and serve primarily as a general guide as to whether the roadway is over or under capacity. In urban environments, where intersections become the constraint points along roadway segments, the intersection’s level of service can be used to determine the roadway’s level of service.

**TABLE TR-4
Level of Service Threshold Volumes For Various Roadway Types**

Roadway Type	Maximum Daily Volume (both directions)				
	LOS A	LOS B	LOS C	LOS D	LOS E
4-Lane State Two-Way Class I Arterial (>0 to 1.99 signals per mile) ¹	4,800	29,300	34,700	35,700	N/A ¹
2-Lane Undivided Major City/County Roadway ²	N/A	N/A	7,000	13,600	14,600
4-Lane Divided Major City/County Roadway (with left-turns) ^{2,3}	N/A	N/A	15,600	27,800	29,400
4-Lane Divided Major City/County Roadway (no left-turns) ^{2,3}	N/A	N/A	12,300	22,000	23,200

Source:
¹ Table 4-1, Generalized Annual Average Daily Volumes for Florida’s Urbanized Areas (2002 Quality/Level of Service Handbook, Florida Department of Transportation). When daily volumes exceed LOS D thresholds, operations of the signalized intersections govern overall roadway segment operations.
² Table 4-2, Generalized Annual Average Daily Volumes for Florida’s Areas Transitioning Into Urbanized Areas or Areas over 5,000 Not in Urbanized Areas (2002 Quality/Level of Service Handbook, Florida Department of Transportation).
³ Includes adjustments for undivided roadways and roadways with left-turn lanes.

Table TR-5 presents the existing roadway segment levels of service for the study segments. Based on the volume thresholds from Florida Department of Transportation, two roadway segments are operating at LOS C. The roadway segment of Orcutt Road is operating at LOS E.

**TABLE TR-5
Existing Street Roadway Segment Daily Traffic Conditions**

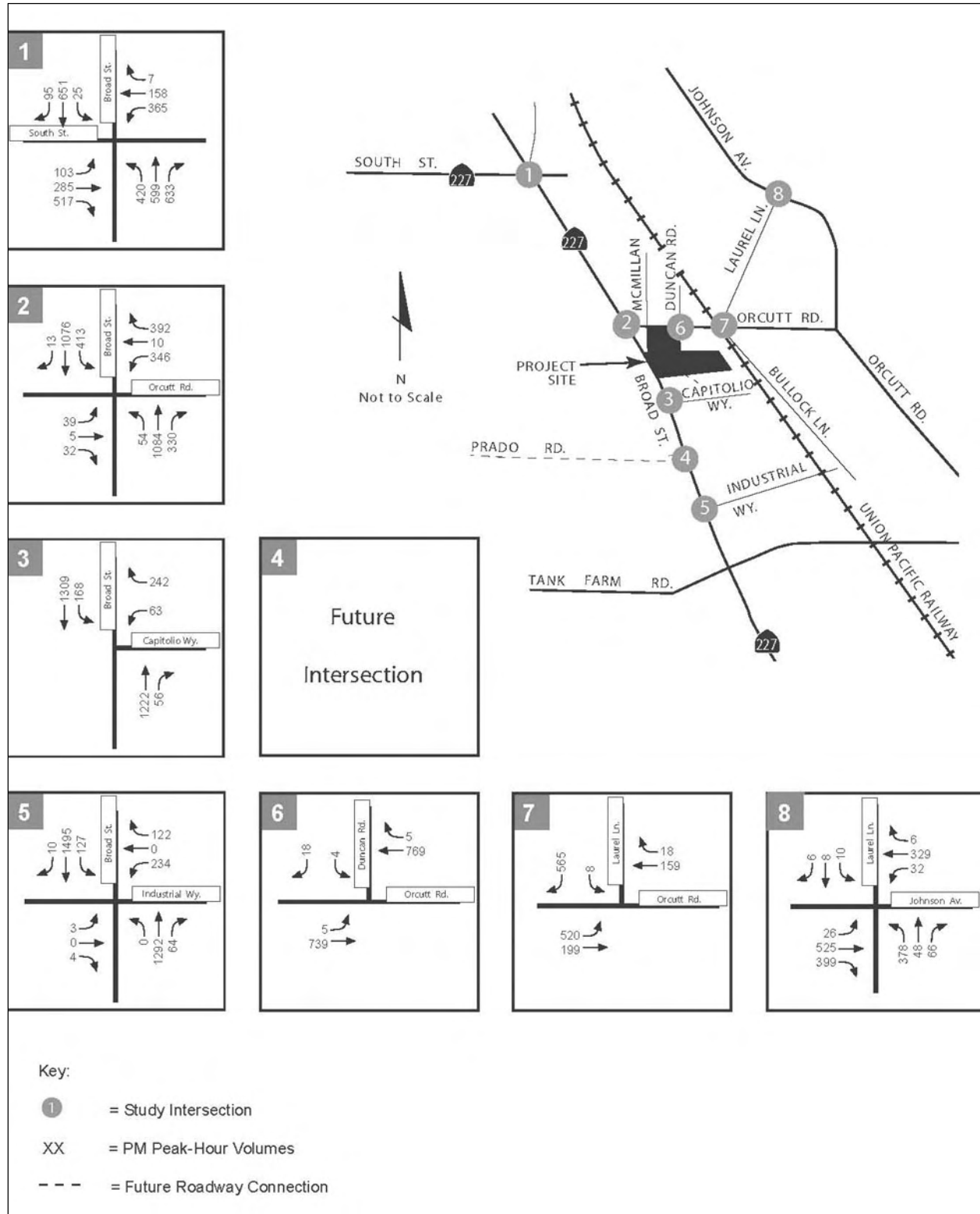
Roadway Segment	Location	Type ¹	Daily Volume	LOS ²
Broad Street (SR 227)	South of Orcutt Road	4-Lane State Class I Arterial Roadway	29,900	C
Orcutt Road	Broad Street to Laurel Lane	2-Lane Undivided Major Roadway	13,910	E
Laurel Lane	Orcutt Road to Johnson Avenue	4-Lane Divided Major Roadway (no left turns)	10,100	C
¹ Street classification obtained from 2002 Quality/Level of Service Handbook (Florida Department of Transportation). ² LOS = Level of Service				

2. Baseline Conditions

The Baseline Conditions are a sum of the existing volumes, as identified in the Existing Conditions, plus traffic from approved but not yet constructed developments in the vicinity of the proposed project. Baseline Conditions serve as a starting point from which to evaluate impacts of the proposed project.

a. Baseline Traffic Volumes

Traffic from approved (but not yet constructed) developments, was added to existing volumes to identify existing baseline conditions against which project impacts were identified. Major projects that could add traffic to one or more study intersections include: Dalidio, Copeland's, Cannon Office Park, Broad Street Mixed Use Project, and Smith Volvo Auto Sales. Traffic projections from these projects were obtained from their traffic studies or estimated using standard traffic engineering practice. A detailed list of approved projects and their trip generation and assignment estimates is included in Appendix E. Figure TR-5 presents the baseline intersection turning movement volumes at the study intersections.



Source: Fehr & Peers, January 2005

**BASELINE PM PEAK-HOUR VOLUMES
FIGURE TR-5**

b. Baseline Intersection Operations

Operations of the study intersections were analyzed using existing volumes plus the addition of approved development traffic as described above. The results of the intersection analysis under Baseline Conditions are shown in Table TR-6.

The addition of traffic from approved projects is estimated to degrade the level of service at the Broad Street/South Street intersection from LOS C to LOS D. Similarly, the most severely impacted movement/approach at the Broad Street/Capitolio Way and Laurel Lane/Orcutt Road intersections are projected to degrade to LOS F. The remaining four intersections are operating at LOS C or better, an acceptable level of service.

**TABLE TR-6
Baseline Intersection Levels of Service**

Intersection	Traffic Control	PM Peak Hour	
		Average Delay (sec/veh) ¹	LOS ²
1. Broad St./South St.	Signal	51.2	D
2. Broad St./Orcutt Rd.	Signal	26.0	C
3. Broad St./Capitolio Wy.	Two-Way Stop Controlled ¹	22.0 (>100)	D (F)
4. Broad St./Prado Rd. Extension	N/A	N/A	N/A
5. Broad St./Industrial Wy.	Signal	21.2	C
6. Duncan Rd./Orcutt Rd./ Sacramento Dr.	Two-Way Stop Controlled ¹	0.4 (21.1)	A (C)
7. Laurel Ln./Orcutt Rd.	Two-Way Stop Controlled ¹	11.3 (64.0)	A (F)
8. Laurel Ln./Johnson Ave.	Signal	16.3	B

¹ Overall intersection delay is presented followed by delay for the most severely impacted turning movement in parentheses.
² LOS = Level of Service

c. Baseline Roadway Segment Operations

Table TR-7 presents the roadway segment levels of service for the study segments with the addition of traffic from approved projects. The addition of traffic associated with approved projects is estimated to cause the roadway segment of Broad Street to operate at an unacceptable level, LOS F.

**TABLE TR-7
Baseline Roadway Segment Daily Traffic Conditions**

Roadway Segment	Location	Type ¹	Daily Volume	LOS ²
Broad Street (SR 227)	South of Orcutt Road	4-Lane State Class I Arterial Roadway	34,750	D
Orcutt Road	Broad Street to Laurel Lane	2-Lane Undivided Major Roadway	15,200	F
Laurel Lane	Orcutt Road to Johnson Avenue	4-Lane Divided Major Roadway (no left turns)	10,960	C
¹ Street classification obtained from 2002 Quality/Level of Service Handbook (Florida Department of Transportation). ² LOS = Level of Service				

3. Regulatory Setting

Transportation system requirements for the incorporated areas of the City are subject to the policies and plans of the City of San Luis Obispo. The City outlines policies and standards regarding use of public roads in the City General Plan Circulation and Land Use Elements. The policies and standards provide guidance in defining whether proposed projects are consistent with established roadway capacity levels and intersection levels of service. The proposed project would be required to meet the required number of parking spaces and access improvements specified by the City of San Luis Obispo.

a. Consistency with Plans and Policies

The proposed project has been evaluated for consistency with plans and policies that pertain to transportation and circulation. If potential inconsistencies were identified, impacts are discussed in Section V.B.6 below, and mitigation measures have been recommended that reduce or eliminate these inconsistencies.

4. Thresholds of Significance

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by CEQA and the City of San Luis Obispo.

a. CEQA Guidelines

The significance of potential transportation and circulation impacts are based on thresholds identified within Appendix G of the CEQA Guidelines. According to the Guidelines, transportation impacts would be considered significant if the proposed project would:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in wither the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);

- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity; or,
- Conflict with adopted polities, plans, or programs supporting alternative transportation (e.g. bus turnouts or bicycle racks).

b. City of San Luis Obispo Guidelines

In addition to the CEQA Guideline considerations, any adverse transportation and circulation impacts were considered to be significant if they would result in an inconsistency with the thresholds identified in the *Traffic Impact Study Preparation Guidelines* (City of San Luis Obispo 2000).

1) Intersection and Roadway Segment Impacts

According to City guidelines, “Level of Service D will be the peak hour design objective for all movements outside of the Downtown area as defined in the City’s Circulation Element of the General Plan.”

Transportation impacts at signalized intersections are considered significant when:

- The addition of project traffic causes the intersection’s level of service to degrade from LOS D or better to LOS E or F.
- Project traffic is added to an intersection operating at LOS E or F.

Transportation impacts at unsignalized intersections are considered significant when:

- The addition of project traffic to an unsignalized intersection increases the level of service to an unacceptable level and satisfies the peak-hour signal warrant from the Manual on Uniform Traffic Control Devices (MUTCD).
- The project’s access to a major street causes a potentially unsafe situation or requires a new traffic signal.

Caltrans seeks to maintain operations at the cusp of the LOS C/D range on State highway facilities. However, Caltrans recognizes that it may not always be feasible to maintain LOS C/D operations, particularly in urban areas. LOS D is considered acceptable in developed areas such as San Luis Obispo on state-operated facilities.

The City’s General Plan Circulation Element identifies LOS D as the minimum acceptable service level on arterial roadway segments (i.e. not intersections) outside of the City’s downtown. For a roadway segment already operating at LOS E or F without the project, the addition of any project traffic to that location is considered a significant impact.

Evaluation of arterial roadway segments reflects planning-level conditions along a street, whereas analysis of the intersections reflects detailed conditions of the arterial. Typically, poor operating conditions on an arterial are due to constraints at the intersections, and can be mitigated at the intersection. Therefore, if an arterial roadway segment analysis shows poor operating conditions, but individual intersections operate within acceptable standards, the mitigation measures defer to the intersection.

2) Pedestrian and Bicycle Impacts

An impact to pedestrians and bicyclists would be considered significant if the proposed project conflicted with existing or planned bicycle facilities or created pedestrian and bicycle demand without providing adequate and appropriate facilities for safe non-motorized mobility.

3) Transit Impacts

Impacts to transit would be considered significant if the proposed project conflicted with existing or planned transit facilities or generated potential transit trips and did not provide adequate facilities for pedestrians and bicyclists to access transit routes and stops.

4) Neighborhood Impacts

Impacts to residential neighborhoods would be considered significant if the addition of traffic from the proposed project would cause the maximum desired LOS for local residential and residential collector streets to be exceeded, or if the project were designed in such a way as to potentially add substantial cut-through traffic to an existing neighborhood. Additionally, the project would significantly impact a neighborhood if it creates substantial delay elsewhere causing diversion of traffic through a neighborhood.

5. **Impact Assessment and Methodology**

Traffic impacts were assessed by conducting traffic counts at certain project intersections and utilizing traffic count estimates from other traffic studies conducted in the project study area. Level of service calculations were performed by Fehr & Peers Transportation Consultants based on technical procedures documented in the 2000 Highway Capacity Manual. The SYNCHRO software program and the Highway Capacity Software Program were utilized to calculate levels of service estimates for the signalized and unsignalized intersections.

The EIR impact analysis evaluates the impacts of the proposed project to traffic operations on the local road network. Project traffic volumes are added to Baseline Condition traffic volumes to determine project-specific impacts. Approved projects, although not currently impacting traffic volumes, are included under the Baseline Conditions in this analysis to give an accurate assessment of the project's impact on the local road network.

In addition to project-specific impacts, the EIR analysis identifies cumulative impacts under two cumulative scenarios, including: 1) Ten-year Conditions with some near-term development and transportation improvements, and 2) General Plan Buildout Conditions representing full buildout of the City's General Plan.

6. Project-Specific Impacts and Mitigation Measures

a. Proposed Intersection and Roadway Improvements

As part of the proposed project, Sacramento Drive would be extended northward to create the southern leg of the Orcutt Road/Duncan Road intersection in conjunction with development of the proposed Tumbling Waters development. Sacramento Drive would provide two travel lanes (one in each direction). The northbound lane configuration at the Orcutt Road/Duncan Road/Sacramento Drive intersection is assumed to be one shared left-turn/through/right-turn lane. In addition, the proposed Tumbling Waters development would preserve right-of-way to accommodate future widening of Orcutt Road to a five-lane roadway (two lanes in each direction plus a center two-way left-turn lane) between Broad Street and the Union Pacific rail crossing. The future widening of Orcutt Road is not proposed as part of the Four Creeks project and is not anticipated to occur prior to occupancy of the proposed project. The following impact analysis assumes the existing roadway configuration (one lane in each direction) would be maintained.

As part of the proposed Creekstön development, the raised median island on Broad Street would be modified to allow southbound left-turns into the Creekstön driveway.

b. Intersection and Roadway Impacts

1) Project Trip Generation, Distribution, and Assignment

Traffic generated by the proposed project was estimated using “Single-Family Detached Housing”, “Condominium/Townhouse”, “Shopping Center”, and “Daycare” trip rates from *Trip Generation* (7th Edition) published by the Institute of Transportation Engineers (ITE).

The retail component’s trip generation also accounts for pass-by trips. Pass-by trips are trips to the site made by vehicles already traveling by the site on the adjacent street (i.e., these vehicles make an interim stop between their primary origin and destination). Pass-by trips are included in the analysis of traffic that enters and exits the project site, but are not considered “new” trips added to the street system by the project. For this analysis, a 20-percent pass-by trip reduction was applied to the PM peak-hour retail trip estimates in accordance with City of San Luis Obispo Public Works guidelines. A pass-by reduction of ten percent was assumed for the daily retail trip estimates.

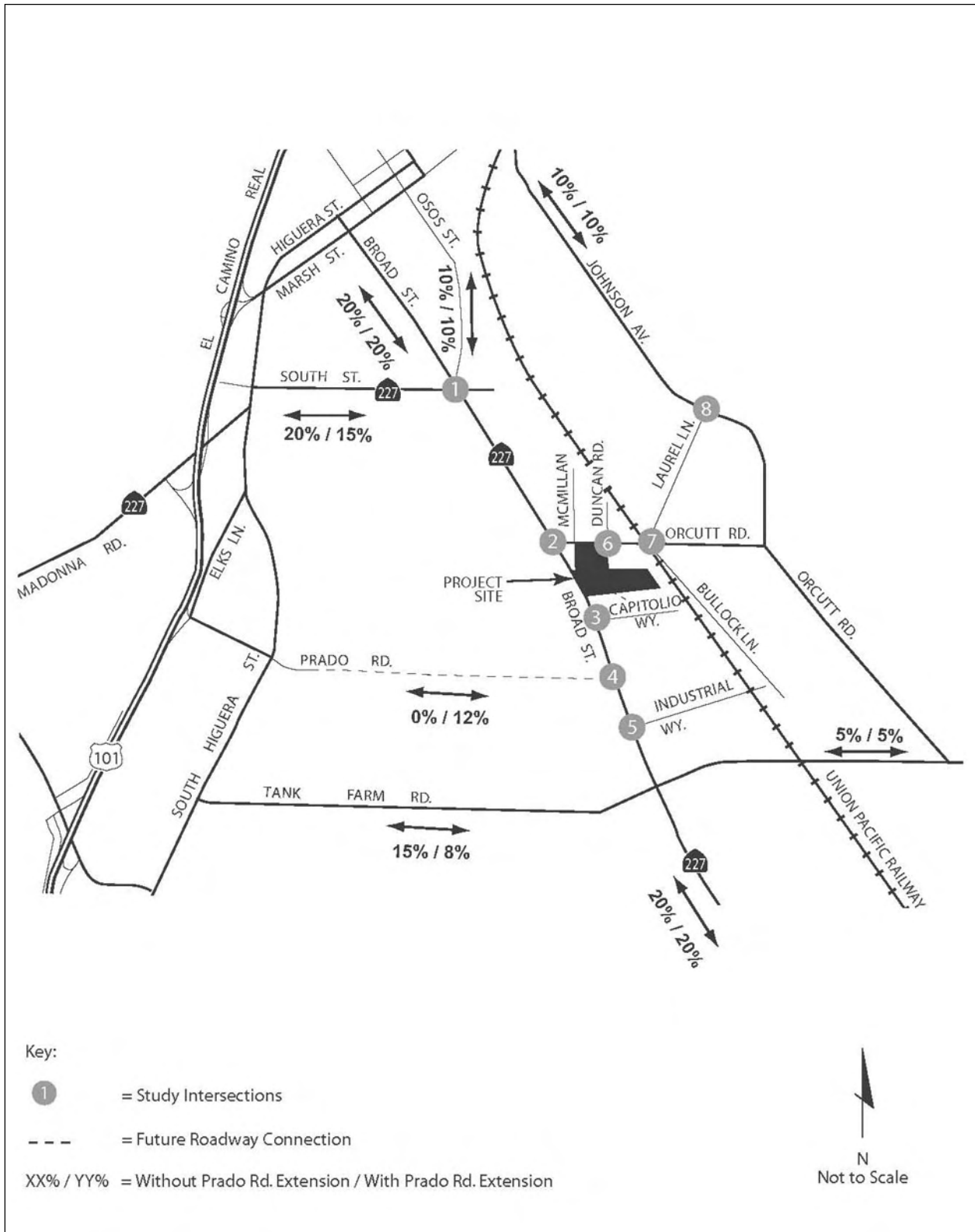
Table TR-8 summarizes the estimated trip generation of the proposed project. The proposed project would generate a total of 3,335 daily trips and 316 PM peak hour trips.

**TABLE TR-8
Trip Generation Rates and Estimates**

Parcel / Land Use	Size	Trip Rates ¹				Trip Estimates			
		Daily	PM Peak Hour			Daily	PM Peak Hour		
			In	Out	Total		In	Out	Total
<i>Tumbling Waters</i>									
Condominium/Townhouse	175 units	5.90	0.37	0.18	0.54	1,033	64	31	95
<i>Creekstön</i>									
Homes	33 units	11.36	0.76	0.45	1.21	375	25	15	40
Condominium/Townhouse	53 units	7.06	0.45	0.23	0.68	374	24	12	36
Daycare	2,500 s.f.	79.26	6.19	6.99	13.18	198	15	18	33
Retail	7,200 s.f.	170.56	7.36	7.92	15.28	1,228	53	57	110
Less passby (10% Daily, 20% PM)						-123	-11	-11	-22
<i>Broad Street Parcels</i>									
Condominium/Townhouse	36 units	7.47	0.47	0.25	0.72	269	17	9	26
Existing Homes (to be removed)	2 units	-9.57	-0.50	-0.51	-1.01	-19	-1	-1	-2
Total Project Trips						3,335	186	130	316
¹ Trip rates obtained from Trip Generation (Institute of Transportation Engineers, 7 th Edition).									

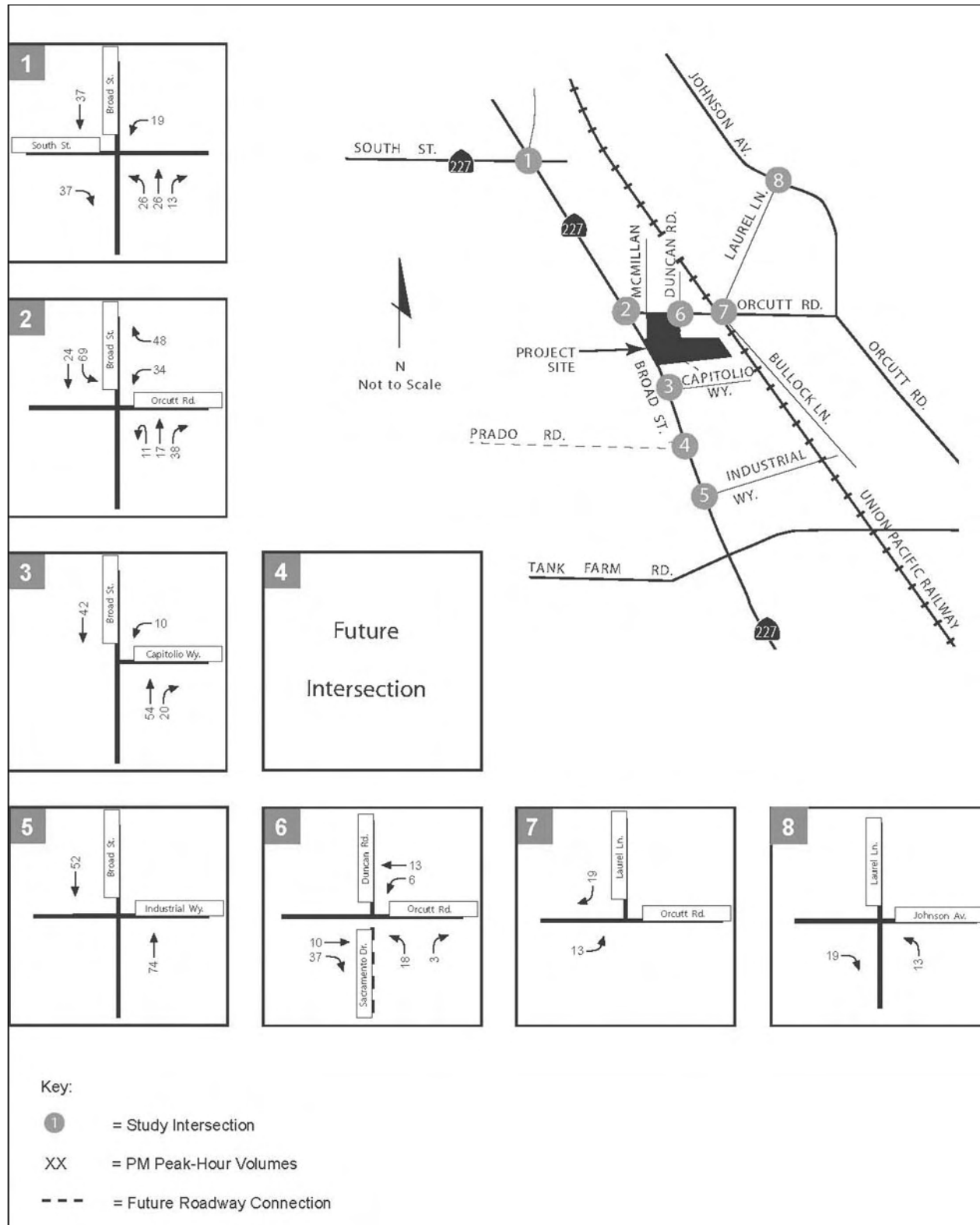
The estimated directions of approach and departure for the proposed project based on the existing roadway network are illustrated on Figure TR-6. The distribution pattern is based on existing travel patterns in the area and complementary land uses (i.e. retail uses).

The project-generated trips were assigned to the roadway system based on the distribution pattern discussed above. Figure TR-7 presents the trip assignment at the study intersections. These trips were added to the volumes under Baseline Conditions to represent Project Conditions. Figure TR-8 illustrates the PM peak hour volumes under Project Conditions.



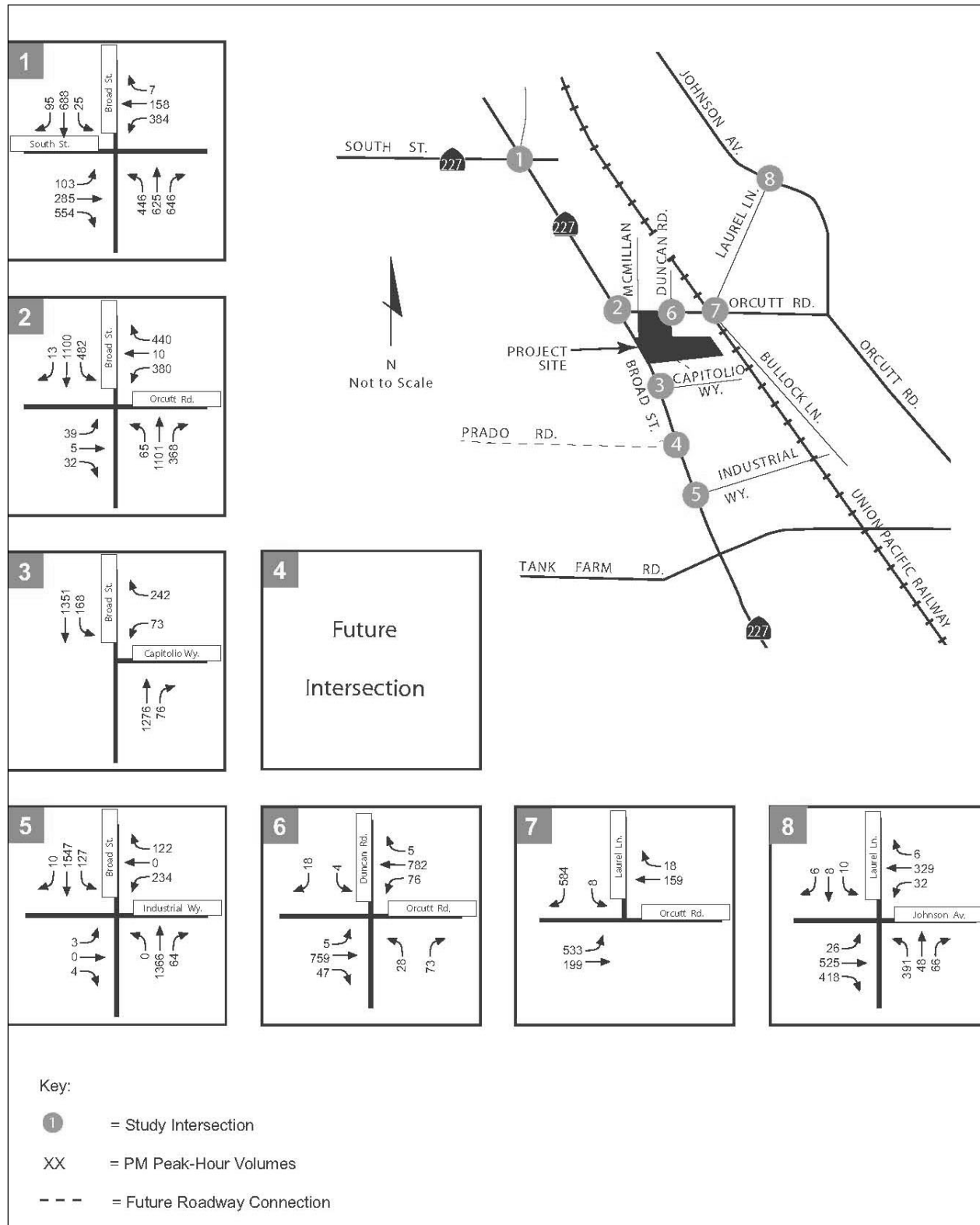
Source: Fehr & Peers, January 2005

**PROJECT TRIP DISTRIBUTION
FIGURE TR-6**



Source: Fehr & Peers, January 2005

PROJECT TRIP ASSIGNMENT
WITHOUT PRADO ROAD EXTENSION
FIGURE TR-7



Source: Fehr & Peers, May 2005

PROJECT PM PEAK-HOUR VOLUMES
FIGURE TR-8

2) Project Intersection Levels of Service

Table TR-9 presents the levels of service under Baseline and Project Conditions.

**TABLE TR-9
Baseline and Baseline Plus Project Intersection Levels of Service**

Intersection	Traffic Control	Baseline		Baseline Plus Project	
		Average Delay (sec/veh) ¹	LOS ²	Average Delay (sec/veh) ³	LOS
1. Broad St./South St.	Signal	51.2	D	57.6	E
2. Broad St./Orcutt Rd.	Signal	26.0	C	28.5	C
3. Broad St./Capitolio Wy.	Two-Way Stop Controlled ¹	22.0 (>100)	D (F)	31.1 (>100)	D (F)
4. Broad St./Prado Rd. Extension	N/A	N/A	N/A	N/A	N/A
5. Broad St./Industrial Wy.	Signal	21.2	C	22.8	C
6. Duncan Rd./Orcutt Rd./ Sacramento Dr.	Two-Way Stop Controlled ¹	0.4 (21.1)	A (C)	9.5 (>100)	A (F)
7. Laurel Ln./Orcutt Rd.	Two-Way Stop Controlled ^{1,3}	11.3 (64.0)	A (F)	12.0 (68.2)	A (F)
8. Laurel Ln./Johnson Ave.	Signal	16.3	B	16.8	B

¹ Overall intersection delay is presented followed by delay for the most severely impacted turning movement in parentheses.
² LOS = Level of Service
³ Stop sign was recently installed for westbound Orcutt Road.
 Significant impacts are highlighted in **bold**.

(a) Broad Street/South Street Intersection

The addition of project traffic is estimated to cause operations at the Broad Street/South Street intersection to degrade from LOS D under Baseline Conditions to LOS E under Project Conditions. The conversion of one northbound through lane into a second left-turn lane would provide LOS D operations (42.9 seconds of delay) as shown in Appendix E. The left-turn phasing for the northbound and southbound approaches would need to be modified to accommodate lead-lag left-turn phasing (northbound and southbound vehicles do not turn left at the same time). Another mitigation option would be to widen the westbound approach of the intersection to provide two left-turn lanes and one shared through/right-turn lane would provide LOS D operations (38.5 seconds of delay). This improvement would require right-of-way acquisition, relocation of existing sidewalk, trees, and traffic signal poles.

TR Impact 1 The proposed project would cause the intersection of Broad Street and South Street to degrade from LOS D under Baseline Conditions to LOS E under Baseline Plus Project Conditions.

~~TR/mm 1 The project applicants shall be responsible for the following intersection improvement:~~

~~a. Convert one northbound through lane into a second left turn lane at the intersection of Broad Street and South Street. The left turn phasing for the northbound and southbound approaches shall be modified to accommodate lead-lag left turn phasing. To implement the mitigation measure, the applicant shall perform the following actions:~~

~~Prior to development plan approval, the applicants shall:~~

- ~~—Prepare construction drawings for the improvements and submit to the City of San Luis Obispo;~~
- ~~—Apply for obtain all necessary permits, approvals, and authorizations from the City of San Luis Obispo Public Works Department; and,~~
- ~~—Submit approved plans along with an encroachment application and payment of any encroachment fees to Caltrans.~~

~~Prior to issuance of occupancy permit the applicants shall:~~

- ~~—Obtain all necessary permits, approvals, and authorizations from the City of San Luis Obispo Public Works Department;~~
- ~~—Submit Caltrans issued encroachment permit to the City of San Luis Obispo; and,~~
- ~~—Fund and construct the intersection improvements based on plans approved by the City of San Luis Obispo.~~

~~Or,~~

~~b. Widen the westbound approach (Santa Barbara Street) of the Broad Street/South Street intersection to provide two left turn lanes and one shared through/right turn lane. To implement the mitigation measure, the applicant shall perform the following actions:~~

~~Prior to development plan approval, the applicants shall:~~

- ~~—Prepare construction drawings for the improvements and submit to the City of San Luis Obispo;~~
- ~~—Apply for obtain all necessary permits, approvals, and authorizations from the City of San Luis Obispo Public Works Department; and,~~
- ~~—Submit approved plans along with an encroachment application and payment of any encroachment fees to Caltrans.~~

~~Prior to issuance of occupancy permit the applicants shall:~~

- ~~—Obtain all necessary permits, approvals, and authorizations from the City of San Luis Obispo Public Works Department;~~
- ~~—Submit Caltrans issued encroachment permit to the City of San Luis Obispo; and,~~
- ~~—Fund and construct the intersection improvements based on plans approved by the City of San Luis Obispo.~~

TR/mm-1 Prior to issuance of building permits, the applicants shall design, subject to approval of the Public Works Director, the following improvement:

- a. Convert one northbound through lane into a second left-turn lane at the intersection of Broad Street and South Street. The left-turn phasing for the northbound and southbound approaches shall be modified to accommodate lead-lag left-turn phasing.

Prior to issuance of occupancy permits, the applicants shall either; 1) complete the improvements identified within this mitigation measure subject to review, inspection and permit issuance by the City and Caltrans, or 2) subject to approval of the Director of Public Works, deposit a mitigation fee in an amount equal to the estimated construction costs of the improvements identified within this mitigation measure and request that the City become the lead entity in processing a Caltrans Encroachment Permit for the required work.

The applicants may request that the City enter into a reimbursement agreement for costs associated with improvements that are beyond the scope of the development project. The reimbursement agreement will be at the sole discretion of the City and final cost estimates and reimbursement amounts will be subject to prior approval of the Director of Public Works. The amount of reimbursement shall be as determined by the Public Works Director, taking into consideration the project's percentile contribution to traffic volumes caused by other known development projects at this intersection, or the percentile increase in average vehicle delay attributable to project traffic.

Residual Impact Intersection operation impacts at Broad Street and South Street would be *less than significant with mitigation, Class II.*

(b) Broad Street/Capitolio Way and Orcutt Road/Laurel Lane Intersections

The most severely impacted movement/approach at the unsignalized intersections of Broad Street/Capitolio Way and Laurel Lane/Orcutt Road are projected to continue operating at LOS F under project conditions.

The peak-hour signal warrant from the *Manual on Uniform Traffic Control Devices* (MUTCD) was evaluated for the unsignalized intersections at Broad Street/Capitolio Way and Laurel Lane/Orcutt Road to determine if a traffic signal would be warranted. The result of the peak-hour warrant analysis indicated that both intersections exceed the minimum volume thresholds.

Based on the peak-hour signal warrant analysis and consultation with the City of San Luis Obispo Public Work Department, installation of a traffic signal is recommended in order to provide acceptable operations at the Broad Street/Capitolio Way intersection. Improvements are planned for the Capitolio Road/Broad Street intersection as part of the development of the approved Cinderella Carpets project, located at 3510 Broad Street. Full build-out of the adjacent right-of-way (which includes widening the westbound approach of Capitolio to provide a

~~dedicated right-turn lane onto Broad Street) is required by ordinance prior to project occupancy. With the installation of these improvements, the delay for westbound right-turns onto Broad Street, which constitutes the majority of vehicle traffic at this intersection, will improve to acceptable levels. As a result, these right-turns can be excluded from the peak-hour signal warrant analysis. The minimum volume thresholds for the peak-hour warrant are no longer satisfied with the exclusion of the westbound right-turn volumes and signalization is would not be warranted under Baseline and Baseline Plus Project conditions.~~

Although the peak-hour signal warrant is satisfied at the Laurel Lane/Orcutt Road intersection, only a negligible number of vehicles (ten southbound left-turn vehicles) are projected to experience substantial delay. The majority of the vehicles on the minor approach are southbound right-turns from Laurel Lane to westbound Orcutt Road and these right-turning vehicles do not experience substantial delay. According to the *2003 Annual Traffic Safety Report* (Traffic Engineering Division Department of Public Works, July 2004), the Orcutt Road/Laurel Lane intersection is ranked as the worst intersection for collision rates for intersections involving two arterial streets and ranked as the fourth worst intersection overall based on total collisions in 2003. As indicated previously, the City recently installed a stop sign for westbound Orcutt Road to address safety concerns and to better designate right-of-way. The proposed project would add traffic to this location, resulting in potentially significant traffic safety impacts.

TR Impact 2 The proposed project would exacerbate unacceptable operations at the unsignalized intersection of Broad Street and Capitolio Way. The westbound approach is projected to operate at LOS F under both Baseline and Baseline Plus Project Conditions and the volumes exceed the minimum thresholds for the peak-hour signal warrant.

~~TR/mm 2 The project applicants shall be responsible for the following intersection improvement:~~

~~The installation of a signal, with a 90-second cycle length, would improve the level of service from LOS F to LOS B (16.0 seconds of delay). Traffic signal interconnect and coordination for the proposed signal at Capitolio Way and the existing Broad Street signals between Orcutt Road and Industrial Way are also required to improve roadway segment operations. To implement the mitigation measure, the applicants shall perform the following actions:~~

~~Prior to development plan approval, the applicants shall:~~

- ~~—Prepare construction drawings for the improvements and submit to the City of San Luis Obispo;~~
- ~~—Apply for obtain all necessary permits, approvals, and authorizations from the City of San Luis Obispo Public Works Department; and,~~
- ~~—Submit approved plans along with an encroachment application and payment of any encroachment fees to Caltrans.~~

~~Prior to issuance of occupancy permit the applicants shall:~~

- ~~—Obtain all necessary permits, approvals, and authorizations from the City of San Luis Obispo Public Works Department;~~
- ~~—Submit Caltrans issued encroachment permit to the City of San Luis Obispo; and,~~
- ~~Fund and construct the intersection improvements based on plans approved by the City of San Luis Obispo.~~

TR/mm-2 If, prior to issuance of occupancy permits, improvements at the intersection of Capitolio/Broad Street have not been completed by adjacent development, the project applicants shall design and install improvements to the Capitolio Road/Broad Street intersection. These improvements shall include the widening of westbound Capitolio, including curb and gutter installation and street paving and the striping of a dedicated left turn lane and separate right-turn lane for access onto Broad Street. The applicants may request that a reimbursement agreement be created for a portion of the improvement costs at the time that the improvements are actually installed. The amount of reimbursement shall be as determined by the Public Works Director, taking into consideration the project's percentile contribution to forecasted traffic volume at the Capitolio-Broad intersection, or the percentile increase in average vehicle delay attributable to project traffic.

Residual Impact Intersection operation impacts at Broad Street and Capitolio Way would be *less than significant with mitigation, Class II.*

TR Impact 3 **The proposed project would exacerbate unacceptable operations at the unsignalized intersection of Laurel Lane and Orcutt Road. The southbound left-turn movement/approach is projected to operate at LOS F under both Baseline and Baseline Plus Project Conditions. The peak-hour volume warrant is satisfied under Baseline Plus Project Conditions. The proposed project would increase traffic at this intersection, which has a high collision rate and is ranked as the most dangerous intersection for collisions out of those intersections consisting of two arterial streets.**

TR/mm-3 The Creekstön and Tumbling Waters applicants shall be responsible for the following intersection improvements:

- Install a traffic signal ~~with a 70-second cycle length and including~~ a southbound right-turn overlap phase (southbound vehicles turn right when eastbound vehicles turn left) to provide acceptable (LOS A) operations; ~~and~~
- ~~—Widen the east leg of the intersection to accommodate the widening of Orcutt Road (widening of Orcutt Road adjacent to the project site is required to mitigate roadway segment impacts-see discussion below).~~

To implement the mitigation measure, the applicant shall perform the following actions.

Prior to ~~development plan approval~~ [issuance of building permits](#), the applicant shall:

- Prepare construction drawings for the improvements and submit to the City of San Luis Obispo Public Works Department;
- Apply for obtain all necessary permits, approvals, and authorizations from the City of San Luis Obispo Public Works Department.

Prior to issuance of occupancy permit the applicant shall:

- Obtain all necessary permits, approvals, and authorizations from the City of San Luis Obispo Public Works Department;
- Fund and construct the intersection improvements based on plans approved by the City of San Luis Obispo.

Residual Impact Intersection operation impacts at Orcutt Road and Laurel Lane would be *less than significant with mitigation, Class II*.

(c) Duncan Road/Orcutt Road/Sacramento Drive Intersection

The proposed project would exacerbate unacceptable operations at the unsignalized intersection of Duncan Road, Sacramento Drive, and Orcutt Road. However, volumes at this intersection (which includes estimates for diverted traffic from existing Sacramento Drive) fall below the threshold of the MUTCD peak-hour signal warrant under Baseline Plus Project Conditions.

TR Impact 4 The proposed project would exacerbate unacceptable operations at the Duncan Road/Sacramento Drive/Orcutt Road intersection. The MUTCD peak-hour signal warrant is not satisfied.

[As part of development, Orcutt Road will be widened on the south side of the street, which will improve eastbound and westbound flow.](#) No mitigation measures are necessary.

Residual Impact Intersection operation impacts at the Duncan Road, Sacramento Drive, and Orcutt Road intersection would be *less than significant, Class III*.

3) Project Roadway Segment Levels of Service

Table TR-10 presents the roadway segment levels of service for the study segments under Baseline and Baseline Plus Project Conditions.

Broad Street, south of Orcutt Road, is projected to exceed LOS D thresholds under Baseline Plus Project Conditions. According to Table 4-1 of the 2002 *Quality/Level of Service Handbook*, when daily volumes exceed LOS D thresholds for a four-lane State Class I Arterial Roadway, operations of the closely spaced signalized intersections would govern roadway segment operations. Thus, intersection operations at the Broad Street/Orcutt Road, Broad Street/Capitolio Way, and Broad Street/Industrial Way intersections would control roadway segment operations since they are the constraint points on this roadway. The Broad Street/Orcutt Road and the Broad Street/Industrial Way intersections would operate at acceptable levels under Baseline Plus Project Conditions. An impact has been identified at the Broad Street/Capitolio Way

intersection; however, this impact would be less than significant with the implementation of TR/mm-32, which requires ~~the installation of a traffic signal~~ intersection improvements.

The addition of project traffic would exacerbate conditions along Orcutt Road, between Broad Street and Laurel Lane, and this road segment would continue operating at LOS F. Widening of Orcutt Road to four lanes is identified in the *1994 Circulation Element*. Orcutt Road would operate at LOS D as a four-lane divided arterial (with left-turn pockets).

Laurel Lane, between Orcutt Road and Johnson Avenue, is projected to continue operating at LOS C with the addition of project traffic.

**TABLE TR-10
Baseline and Baseline Plus Project Roadway Segment Daily Traffic Conditions**

Roadway Segment	Location	Type ¹	Baseline		Baseline Plus Project		
			Daily Volume	LOS ²	Project Daily Trips	Total Daily Volume	LOS
Broad Street (SR 227)	South of Orcutt Road	4-Lane State Class I Arterial Roadway	34,570	C	1,510	36,080	N/A ³
Orcutt Rd.	Broad Street to Laurel Lane	2-Lane Divided Major Roadway	15,290	F	2,040	17,330	F
Laurel Ln.	Orcutt Road to Johnson Avenue	4-Lane Divided Major Roadway (no left turns)	11,210	C	350	11,560	C

¹ Street classification obtained from *2002 Quality/Level of Service Handbook* (Florida Department of Transportation).
² LOS = Level of Service
³ According to Table 4-1 of the *2002 Quality/Level of Service Handbook*, operations of the signalized intersections govern roadway segment operations when daily volumes exceed LOS D thresholds.
 Significant impacts are highlighted in **bold**.

TR Impact 5 The proposed project would exacerbate unacceptable operations for the roadway segment of Orcutt Road, between Broad Street and Laurel Lane.

~~TR/mm 4 The project applicants shall be responsible for the following intersection improvements:~~

~~Provide an additional through lane in each direction along Orcutt Road, between Broad Street and Laurel Lane. The alignment of Orcutt Road, with the widening, would shift southwards near Duncan Road/Sacramento Drive and transition northwards before Laurel Lane. This alignment was set by City Council in 1994 (see Ordinance No. 1269). The widening of Orcutt Road shall incorporate state and city design standards.~~

~~Provide bicycle lanes in both directions and left turn pockets in both directions at McMillian Avenue and Duncan Road/Sacramento Drive with the widening of Orcutt Road.~~

~~To implement the mitigation measure, the applicants shall perform the following actions:~~

~~Prior to development plan approval, the applicants shall:~~

- ~~— Prepare construction drawings for the improvements according to applicable state and city standards and submit to the City of San Luis Obispo;~~
- ~~— Apply for obtain all necessary permits, approvals, and authorizations from the City of San Luis Obispo Public Works Department; and,~~
- ~~— Submit approved plans along with an encroachment application and payment of any encroachment fees to Caltrans.~~

~~Prior to issuance of occupancy permit the applicants shall:~~

- ~~— Obtain all necessary permits, approvals, and authorizations from the City of San Luis Obispo Public Works Department;~~
- ~~— Submit Caltrans issued encroachment permit to the City of San Luis Obispo; and,~~
- ~~— Fund and construct the roadway improvements based on plans approved by the City of San Luis Obispo.~~

TR/mm-4 Prior to issuance of occupancy permits, the project applicants shall install, subject to approval of the Public Works Director, the following improvements:

- Provide an additional through lane in each direction along Orcutt Road, between Broad Street and the Union Pacific Railroad right-of-way. The alignment of Orcutt Road, with the widening, would shift southwards near Duncan Road/Sacramento Drive and transition northwards before the railroad tracks. This alignment was set by City Council in 1994 (see Ordinance No. 1269). The widening of Orcutt Road shall incorporate state and city design standards.
- Provide bicycle lanes and sidewalks in both directions and left-turn pockets in both directions at McMillian Avenue and Duncan Road/Sacramento Drive with the widening of Orcutt Road.

In addition, prior to issuance of occupancy permits, the applicants shall either: 1) complete the following improvements subject to review, inspection and permit issuance by the City, the California Public Utilities Commission (CPUC), and Union Pacific Railroad, or 2) subject to approval of the Director of Public Works, deposit a mitigation fee in an amount equal to the estimated construction costs of said project and request that the City become the lead entity in processing a CPUC Encroachment Permit for said work.

- Provide an additional through lane in each direction along Orcutt Road, between Union Pacific Railroad right-of-way and Laurel Lane.
- Provide bicycle lanes and sidewalks in both directions and left-turn pockets in both directions at Laurel Lane with the widening of Orcutt Road.

The applicants may request that the City enter into a reimbursement agreement for costs associated with improvements that are beyond the scope of the development project. The reimbursement agreement will be at the sole discretion of the City and final cost estimates and reimbursements amount will be subject to prior approval of the Director of Public Works. The amount of reimbursement shall be as determined by the Public Works Director, taking into consideration the project's percentile contribution to traffic volumes caused by other known development projects at this intersection, or the percentile increase in average vehicle delay attributable to project traffic.

Residual Impact Roadway segment impacts along Orcutt Road, between Broad Street and Laurel Lane, would be less *than significant with mitigation, Class II*.

c. Pedestrian Impacts

As proposed, the Tumbling Waters component would construct walking paths that would provide pedestrian circulation around the entire village adjacent to the creek setback areas and open space. The paths would lead to a community park and a proposed footbridge across Sydney Creek which would allow residents to walk to the proposed commercial uses. Pedestrian paths would also connect to a proposed Class I bike path on the west side of Sacramento Drive.

Pedestrian paths are provided through most of the Creekstön portion of the site plan except through the parking lot located to the north. No conceptual site plans are available for the Broad Street parcels.

The proposed project is expected to generate pedestrian trips between the proposed residential and commercial use. The existing adjacent commercial uses would attract pedestrian trips from the proposed residential uses. Sidewalks are provided on both sides of Broad Street and on the north side of Orcutt Road. A sidewalk is provided on the south side of Orcutt Road from Broad Street to its terminus near McMillan Avenue. As proposed, the Tumbling Waters component would construct a sidewalk on the south side of Orcutt Road from its terminus near McMillan Avenue to just west of the rail crossing. The next section of sidewalk on the south side of Orcutt Road starts east of the rail crossing at Laurel Lane.

TR Impact 6 The proposed project would generate new pedestrian trips where sidewalks or pathways are not currently provided or proposed.

TR/mm-5 Prior to development plan approval issuance of building permits, the applicants for the Tumbling Waters project component shall submit revised site plans showing an at-grade sidewalk or pedestrian path on the south side of

Orcutt Road from its proposed terminus at the rail crossing to Laurel Lane to provide a continuous pedestrian facility. Implementation of this mitigation measure shall be coordinated with Union Pacific Railway and the California Public Utilities Commission.

Prior to issuance of occupancy permits, the applicants shall either; 1) complete the improvements subject to review, inspection and permit issuance by the City, the California Public Utilities Commission (CPUC) and Union Pacific Railroad, or 2) subject to approval of the Director of Public Works, deposit a mitigation fee in an amount equal to the estimated construction costs of said project and request that the City become the lead entity in processing a CPUC Encroachment Permit for said work.

Prior to ~~development plan approval~~ issuance of building permits, the applicants for the Creekstön project component shall submit revised site plans showing a sidewalk or pedestrian path through the northern parking lot on the Creekstön parcel to direct pedestrians to Orcutt Road. The sidewalk or path shall be located adjacent to and outside of the 20-foot setbacks from Bishop Creek, as identified in the Biological Resources section of the EIR.

Residual Impact Pedestrian impacts would be *less than significant with mitigation, Class II*.

d. Bicycle Impacts

The project would generate new bicycle trips to and from the project site. Bicycle lanes are provided on Broad Street, Laurel Lane, Johnson Avenue, South Street (east of Broad Street), and portions of Orcutt Road in the vicinity of the project site. As proposed, the Tumbling Water component would include a Class I bike path within the Sacramento Drive extension easement. The proposed Creekstön development would provide 30 bicycle spaces. No bicycle parking spaces are proposed for the Tumbling Waters or Broad Street parcels developments.

The proposed Class I (bike path) facility on the Sacramento Drive extension is inconsistent with recommendations in the City Bicycle Transportation Plan (San Luis Obispo Public Works Department, March 2004), which identify Class II (bike lane) facilities. Although a Class I bicycle path separates bicyclists from vehicular traffic on the street, bicycles would conflict with vehicles across project driveways on Sacramento Drive. Vehicles turning in and out of the driveways may not see the bicyclists on the path, especially those traveling in the opposite direction of vehicle traffic.

TR Impact 7 Development of the proposed project, including the proposed Class I bike path within the Sacramento Drive extension easement, would increase bicycle lane usage on Orcutt Road.

TR/mm-6 Prior to ~~development plan approval~~ issuance of building permits, the applicants shall revise site plans shall to include striped, Class II bicycle lanes along eastbound and westbound Orcutt Road. These Class II bicycle lanes shall provide a connection to the Railroad Recreational Trail.

Residual Impact Impacts associated with increased bicycle lane usage on Orcutt Road would be considered *less than significant with mitigation, Class II*.

TR Impact 8 The proposed Class I (bike path) facility on the Sacramento Drive is inconsistent with the City Bicycle Transportation Plan, and would result in bicycle safety impacts.

TR/mm-7 Prior to ~~development plan approval~~ issuance of building permits, the applicants shall revise site plans to include increasing the proposed width (24 feet) of the Sacramento Drive extension to provide five-foot Class II bike lanes on both sides.

Residual Impact Impacts associated with the planned bicycle facility on Sacramento Drive would be considered *less than significant with mitigation, Class II*.

e. Transit Impacts

The proposed project would generate new transit trips at bus stops in the immediate vicinity of the project site. Existing bus stops are provided on Broad Street and Orcutt Road within one-quarter mile of the project site. As proposed, the project would not accommodate for additional transit stops along the project frontage, which is inconsistent with future planned transit improvements identified in the San Luis Obispo Short-Range Transit Plan (Urbitran Associates, Inc., May 2004).

TR Impact 9 The proposed project would not accommodate for increased transit trips at bus stops in the immediate vicinity of the project site.

TR/mm-8 Prior to ~~development plan approval~~ issuance of building permits, the project applicants shall revise site plans to show the provision a bus stop along the project's frontage on Orcutt Road at McMillian Avenue. Prior to issuance of building permits, the applicant shall coordinate with San Luis Obispo Transit and provide all funding for the installation of transit signs, schedule, and a bench at the new bus stop location. All transit improvements shall be installed prior to occupancy clearance.

Residual Impact With implementation of the mitigation measures, transit impacts would *less than significant with mitigation, Class II*.

f. Neighborhood Impacts

The nearby residential area northwest of Johnson Avenue/Laurel Lane is a designated neighborhood traffic management area in the *General Plan Circulation Element*. Johnson Avenue is a designated residential arterial with a desired LOS D according to the Circulation Element. The proposed project is estimated to add 350 daily trips to Johnson Avenue. Johnson Avenue has a daily traffic volume of 14,510 vehicles according to City of San Luis Obispo traffic volume maps. This translates to LOS D according to the volume thresholds in Table TR-3 for a four-lane divided roadway. With the additional project trips, Johnson Avenue would

continue to operate at LOS D. No impacts are anticipated and no mitigation measures are warranted.

g. Project Access Impacts

1) Site Access

As proposed, the Tumbling Waters component includes the extension of Sacramento Drive northward to create the southern leg of the Orcutt Road/Duncan Road intersection. Sacramento Drive would be constructed as a two-lane roadway with a Class I bicycle path on the west side.

Access to Creekstön component would be provided via two new driveways, one on Orcutt Road located across from McMillan Avenue, and one on Broad Street located approximately 860 feet south of Orcutt Road. As proposed, the median on Broad Street would be modified to allow southbound left-turns from Broad Street into the Creekstön development. The proposed southbound left-turn access on Broad Street to the Creekstön driveway would create a new conflict point on Broad Street in the close proximity to two southbound left-turn movements. An existing southbound left-turn pocket serves the retail development located adjacent to the Creekstön development and a southbound left-turn pocket is also provided at Broad Street/Rockview Place. Vehicles destined for the Creekstön development would be able to make a southbound U-turn at the existing Broad Street/Rockview Place intersection or they would be able to enter the site via the Creekstön driveway on Orcutt Road.

The proposed site access at the Creekstön driveway on Orcutt Road would result in lengthy side street delays resulting in vehicles queuing on-site. The northbound left-turn movement from the project site to westbound Orcutt Road is estimated to operate at LOS F. However, volumes at this intersection do not meet the MUTCD peak-hour signal warrant and the intersection is located too close to the existing signal at Broad Street/Orcutt Road to allow installation of a new signal. Onsite queuing would not result in traffic safety concerns and is not considered a significant impact.

A southbound left-turn lane is provided at the Broad Street/Rockview Place intersection. Although a proposed site plan is not available for the Broad Street parcels, this southbound left-turn lane would to provide access to any proposed future Broad Street parcel development.

Three driveways on Sacramento Drive are proposed for access to the Tumbling Waters development, one on the west side and two on the east side. The west side driveway and the northerly driveway on the east side form an intersection on Sacramento Drive approximately 180 south of Orcutt Road. The third Tumbling Waters driveway is located near the southern boundary of the site, on a curved section of Sacramento Drive. Limited sight distance is provided at the southern driveway for outbound vehicles. Sacramento Drive vehicles may not anticipate inbound or outbound vehicles at the southern driveway.

A queue analysis was conducted to determine if northbound Sacramento Drive vehicles would queue back and block access to the northernmost Tumbling Waters driveway. The Orcutt Road/Duncan Drive/Sacramento Drive intersection level of service calculation indicates that the last northbound vehicle would queue close to the driveway opening (the estimated queue is six vehicles or 150 feet assuming an average spacing of 25 feet per vehicle), and would potentially

block access to the Tumbling Waters development, resulting in potentially significant traffic safety impacts.

The number and spacing of the proposed driveways for the Creekstön and Tumbling Waters development is sufficient to accommodate the vehicular demand.

TR Impact 10 **The proposed southbound left-turn access on Broad Street to the Creekstön driveway would create a new conflict point on Broad Street in the close proximity to two existing southbound left-turn movements, resulting in potentially significant impacts.**

TR/mm-9 Prior to ~~development plan approval~~ issuance of building permits, the Creekstön applicant shall modify site plans to show removal of the proposed median modification that would allow southbound left-turn access on Broad Street to the Creekstön driveway

Residual Impact With implementation of the mitigation measures, Creekstön site access impacts off of Broad Street would be *less than significant with mitigation, Class II*.

TR Impact 11 **Site access at the Broad Street parcels may result in delays on Broad Street. The Broad Street parcels are located opposite and north of Rockview Place. Any future driveways that are not aligned with Rockview Place would result in offset intersections and may cause additional congestion.**

TR/mm-10 Prior to issuance of building permits for any proposed future development on the Broad Street Parcels, project plans shall show a driveway at the southern boundary of the project site aligning directly with Rockview Place. The site access for the Broad Street parcels shall be reviewed and approved by the City Public Works Department.

Residual Impact Site access impacts from the Broad Street component driveway off of Broad Street would be *less than significant with mitigation, Class II*.

TR Impact 12 **The proposed project would cause delays on Orcutt Road at the project driveways without the addition of left-turn pockets. Westbound vehicles on Orcutt Road may queue back from the Sacramento Drive extension towards the railroad crossing.**

Implement TR/mm-4.

Residual Impact Implementation of TR/mm-4, which includes the widening of Orcutt Road to provide an additional through lane in each direction and provide left-turn pockets at McMillian Avenue and at Duncan Road/Sacramento Drive, would

reduce site access impacts along westbound Orcutt Road to *less than significant with mitigation, Class II*.

TR Impact 13 Northbound Sacramento Drive vehicles may queue back and potentially block access to the Tumbling Waters development, resulting in potentially significant traffic safety impacts.

TR/mm-11 Prior to occupancy clearance, the Tumbling Waters applicant shall stripe a “Keep Clear” legend within Sacramento Drive at the northernmost Tumbling Waters driveway.

Residual Impact Site access impacts associated with the Tumbling Waters project component would be *less than significant with mitigation, Class II*.

TR Impact 14 The southernmost Tumbling Waters driveway on Sacramento Drive is located in between two curves. Vehicles traveling around the curved alignment on Sacramento Drive may not anticipate inbound or outbound Tumbling Waters vehicles.

TR/mm-12 Prior to [development plan approval issuance of building permits](#), the Tumbling Waters applicant shall revise all site plans to show either of the following requirements:

- a. The southernmost driveway shall be restricted to emergency vehicle and pedestrian/bicycle access to minimize vehicular conflicts on the curved alignment of Sacramento Drive. Should this driveway be restricted to emergency vehicles only, the east-west aisle located immediately north can be extended to Sacramento Drive and a new driveway could be installed. This driveway would be located at the northern end of Sacramento Drive where the roadway includes a straighter alignment, which would provide improved sight distance for drivers of exiting vehicles; or,
- b. The southernmost driveway shall be restricted to right-turns in and out to minimize vehicular conflicts on the curved alignment of Sacramento Drive.

Residual Impact Site access impacts associated with the Tumbling Waters project component would be *less than significant with mitigation, Class II*.

2) Internal Circulation

The proposed internal circulation system for Tumbling Waters development shows a network with several dead-end aisles. The dead-end aisles would serve a limited number of units. All streets would provide two-way traffic and include perpendicular and parallel parking spaces for guests. Enhanced paving is proposed for the main north-south aisle in the eastern portion of the Tumbling Waters development. This aisle is located in between the Village Water Garden and

the Village Plaza & Hall. The project is proposing to include a school bus drop-off/pick-up and to potentially close this aisle for community events.

As proposed, the main circulation aisle for the Creekstön development is oriented in a north-south direction. Sidewalk paths and proposed landscaping material (turf block) are proposed on the main circulation aisle in the Creekstön development. The main circulation aisle would contain two dead-end aisles near the courtyard homes. As proposed, these dead-end aisles would be separated only by turf block, which would not necessarily preclude passenger vehicles from entering the area. Dead-end aisles are also proposed for other internal circulation aisles within the Creekstön development. All circulation aisles would serve two-way traffic. In addition, five perpendicular parking spaces are located on the south side of the driveway immediately east of Broad Street.

TR Impact 15 Vehicle circulation for the eastern portion of the Tumbling Waters development would be temporarily restricted due to the proposed uses of the main north-south circulation aisle (school bus pick-up/drop-off and closure for community events).

TR/mm-13 Prior to [development plan approval issuance of building permits](#), the Tumbling Waters applicant shall modify site plans to show the west side of the main north-south aisle adjacent to the Village Plaza & Hall designated as a passenger loading zone. The designated passenger loading zone would be available for school bus drop-off/pick-up and for closure for community events. The east-west aisle shall remain open at all times.

Residual Impact Circulation impacts associated with the proposed use of the main north-south circulation aisle in the eastern portion of the Tumbling Waters development would be *less than significant with mitigation, Class II*.

TR Impact 16 The Creekstön component of the proposed project would include two dead-end aisles separated only by turf block, which could result in internal circulation impacts.

TR/mm-14 Prior to [development plan approval issuance of building permits](#), the main circulation aisle in the Creekstön development shall be reconfigured to allow through access between the residential and commercial uses. Implementation of this mitigation would remove the proposed dead-end aisles on the main circulation aisle and improve overall vehicular access to and through the site.

Residual Impact Internal circulation impacts associated with the Creekstön project component would be *less than significant with mitigation, Class II*.

TR Impact 17 Emergency and passenger vehicle access would be restricted with the proposed dead-end aisles in the Tumbling Waters and Creekstön development.

- TR/mm-15 Prior to ~~development plan approval~~ issuance of building permits, the Tumbling Waters and Creekstön applicants shall coordinate with the San Luis Obispo City Fire Department to determine the acceptable parameters for all dead-end aisles to ensure that emergency vehicle access is available. Design features, such as a “hammerhead,” would be required to reduce the number of three-point turns vehicles have to make to enter/exit the affected areas. Plans shall be revised to reflect necessary changes to dead-end aisles.
- Residual Impact Circulation impacts associated with the dead-end aisles in the Tumbling Waters and Creekstön development would be *less than significant with mitigation, Class II*.
- TR Impact 18 Location of grouped mailboxes adjacent to public streets may cause additional delay for vehicles on public roadways, resulting in potentially significant impacts.**
- TR/mm-16 Prior to ~~development plan approval~~ issuance of building permits, the Tumbling Waters and Creekstön applicants shall revise all site plans to show locations of all grouped mail boxes located adjacent to private streets rather than public streets. The location of the grouped mailboxes shall be approved by City staff.
- Residual Impact Circulation impacts associated with the location of grouped mailboxes would be *less than significant with mitigation, Class II*.
- TR Impact 19 The five perpendicular parking spaces located at the Broad Street driveway for the Creekstön development would cause delays to vehicles entering the site. These delays could result in potential safety problems for vehicles on Broad Street.**
- TR/mm-17 Prior to ~~development plan approval~~ issuance of building permits, the Creekstön applicant shall submit revised site plans that show no parking spaces located along the entry roadway within 50 feet of ~~any driveway intersection~~ the project entrance located on Broad Street.
- Residual Impact Internal circulation impacts associated with the Creekstön project component would be *less than significant with mitigation, Class II*.

3) Parking

~~As proposed, the Tumbling Waters component would include 387 vehicle parking spaces (312 garage spaces and 75 parking lot and street spaces), and the Creekstön project component would include 189 vehicle parking spaces, 30 bicycle spaces, and 10 motorcycle spaces.~~

According to section 17.16.060 of the City’s Municipal Code, two parking spaces per dwelling unit and one space per 200 square feet of retail sales are required. In addition, 15 percent of the required auto spaces for retail uses and 5 percent of the required auto spaces for multi-family

residential uses must be bicycle parking spaces. A 20 percent reduction is allowed for mixed-use developments.

Based on the code requirements, 350 spaces are required for the Tumbling Waters development, 169 spaces are required for the Creekstön development (daycare is assumed to require the same parking rate as retail use), and 68 spaces are required for the Broad Street parcels (assuming credit for two existing homes). Applying the requirement for bicycle parking (five percent of required auto spaces for multi-family use), 18 bicycle spaces are required for Tumbling Waters, 7 bicycle spaces are required for Creekstön (based on 172 required auto spaces for residential spaces), and 4 bicycle spaces are required for the Broad Street parcels.

As proposed, the Tumbling Waters component would include 387 vehicle parking spaces (312 garage spaces and 75 parking lot and street spaces), and the Creekstön project component would include 189 vehicle parking spaces, 30 bicycle spaces, and ten motorcycle spaces. There is no development plan proposed as part of the Broad Street Parcels component, and no parking spaces have been identified; however, any future development would be required to provide an adequate number of parking and bicycle spaces, as required by City Municipal Code.

~~**TR Impact 20** — **The proposed project would not provide adequate vehicle parking spaces according to the City's Municipal Code requirements.**~~

~~TR/mm 18 — Prior to issuance of building permits for the proposed project, site plans shall be submitted that include the provision for an adequate number of parking spaces, as required by Municipal Code section 17.16.060.~~

~~Residual Impact — Parking impacts on the Broad Street Parcels would be *less than significant with mitigation, Class II.*~~

~~**TR Impact 21** — **The proposed project would not provide adequate bicycle parking spaces according to the City's Municipal Code requirements.**~~

~~TR/mm 19 — Prior to issuance of building permits for the proposed project, site plans shall be submitted that include the provision for an adequate number of bicycle spaces, as required by City Municipal Code.~~

~~Residual Impact — Bicycle parking impacts on the Broad Street Parcels would be *less than significant with mitigation, Class II.*~~

7. Cumulative Impacts

a. Ten-Year Cumulative Impacts

The impacts of the proposed project were evaluated for Ten-Year Cumulative Conditions with and without the proposed project. Ten-Year Cumulative Conditions represent traffic volumes anticipated over the next ten years.

1) Ten-Year Cumulative Planned Roadway Improvements

Under the ten-year cumulative condition, Prado Road would be extended to Broad Street, north of Industrial Way, as a two-lane roadway. The future extension of Prado Road would provide a direct connection to US 101. Substantial changes to existing traffic patterns would result. Existing east-west traffic on adjacent corridors (South Street and Tank Farm Road) would shift to the Prado Road extension.

The future Broad Street/Prado Road intersection would be signalized and the lane configuration is assumed to be:

- Northbound and southbound – one left-turn lane, two through lanes, one right-turn lane
- Eastbound – one left-turn lane, one shared left-turn/through lane, one right-turn lane
- Westbound – one left-turn lane, one shared through/right-turn lane

Widening of Orcutt Road between Broad Street and Johnson Avenue is assumed to be completed under the Ten-Year Cumulative Conditions scenario. The section of Orcutt Road adjacent to the project site is assumed to include two travel lanes in each direction with left-turn pockets at key intersections.

As part of future development in the greater Orcutt Area, Bullock Lane would be realigned to form the south leg of the Orcutt Road/Laurel Lane intersection. The future lane configuration at this intersection with the realignment and widening of Orcutt Road is assumed to be:

- Northbound – one left-turn lane and one shared through/right-turn lane
- Southbound – one shared left-turn/through lane and one right-turn lane
- Eastbound – one left-turn lane, one through lane, and one shared through/right-turn lane
- Westbound – one shared left-turn/through lane and one shared through/right-turn lane

In addition, the cycle lengths at selected intersections were adjusted by 5 to 20 seconds under Ten-Year Conditions to account for changes that the City would typically implement as Baseline traffic volumes increased over a ten-year period. In all cases, the resulting new cycle lengths for all intersections ranged between 100 and 120 seconds. However, the cycle lengths were not adjusted with the addition of project traffic unless specifically identified as part of a mitigation measure.

2) Ten-Year Cumulative Intersection and Roadway Impacts

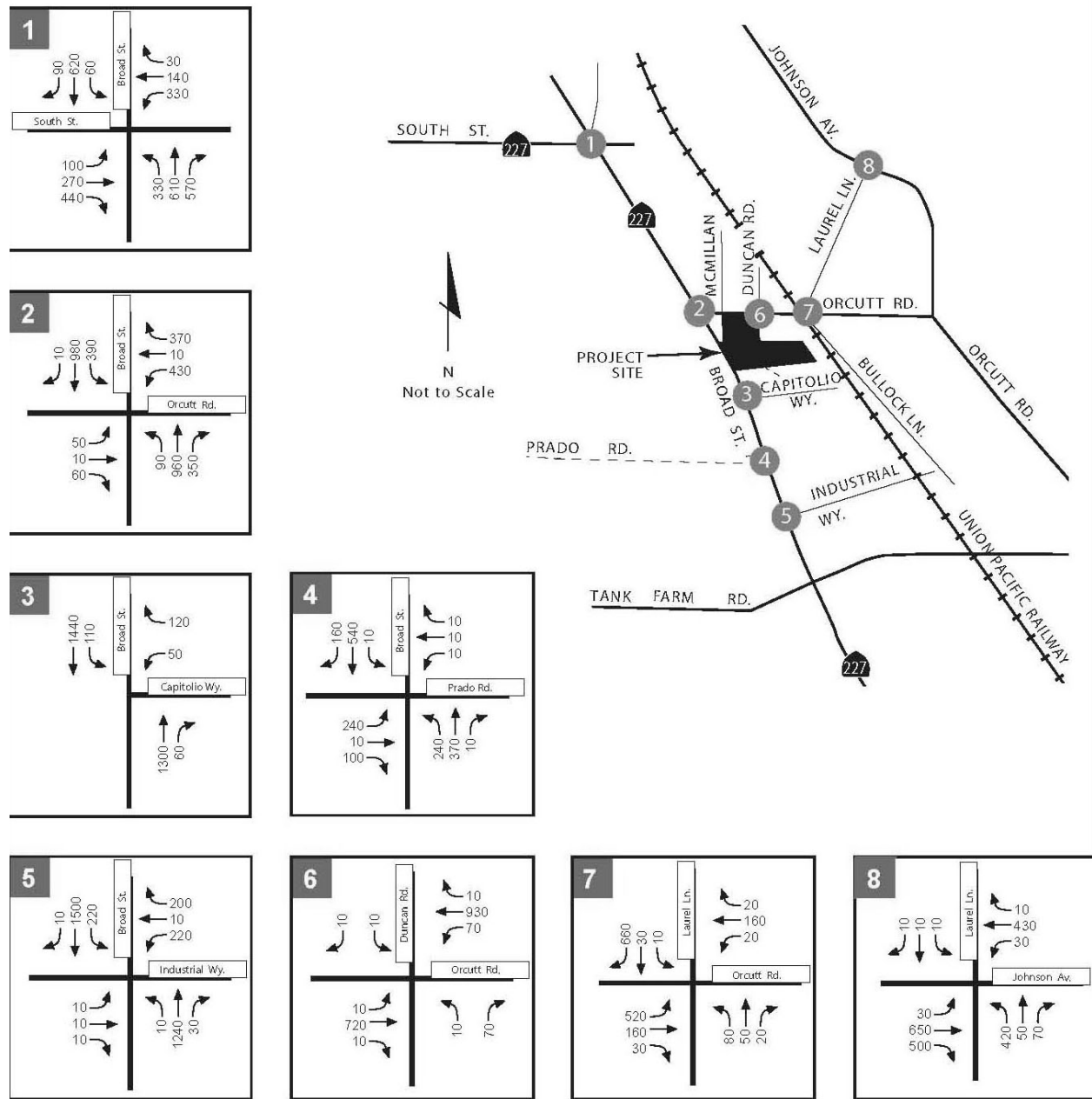
(a) Ten-year Cumulative Traffic Volumes

The San Luis Obispo Citywide Traffic Model (SLOCTM) was used to develop traffic projections at the study intersections and roadway segments under General Plan Buildout Conditions. General Plan Buildout Conditions reflect traffic conditions approximately 30 years in the future according to City Public Works staff. Traffic growth in the Margarita and Airport Area Specific Plan Areas, as well as from major projects such as Froom Ranch and Dalidio, is included under General Plan Buildout Conditions.

Since the model does not include a ten-year timeframe, the difference between existing volumes and the General Plan Buildout projections were proportioned by approximately one-third and added to existing volumes to reflect Ten-Year No Project Cumulative Conditions. Figure TR-9 illustrates the traffic volumes at the study intersections under the Ten-Year No Project Cumulative Conditions.

(b) Ten-Year Cumulative Trip Distribution and Assignment

The project trip distribution was adjusted to reflect planned roadway improvements for the Ten-Year scenario. Prado Road would be extended from its eastern terminus (east of S. Higuera Street) to Broad Street as a two-lane road. With this extension, traffic destined to the east can travel on Prado Road instead of Tank Farm Road or South Street. Figure TR-6 shows the trip distribution with the Prado Road extension and Figure TR-10 presents the trip assignment. The trip assignment was added to the Ten-Year No Project Cumulative projections (Figure TR-9) to represent Ten-Year Plus Project Cumulative Conditions (refer to Figure TR-11).

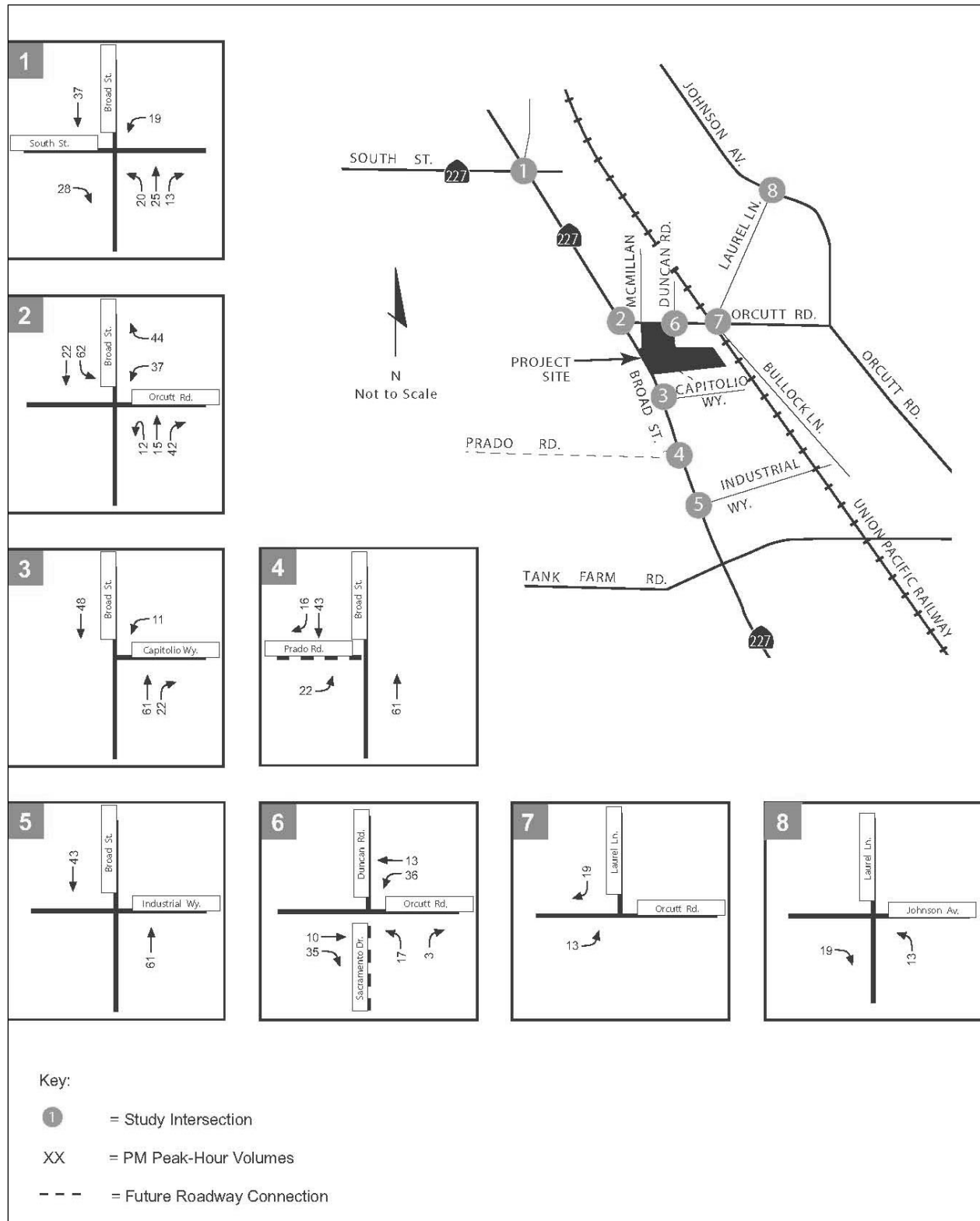


Key:

- 1** = Study Intersection
- XX = PM Peak-Hour Volumes
- = Future Roadway Connection

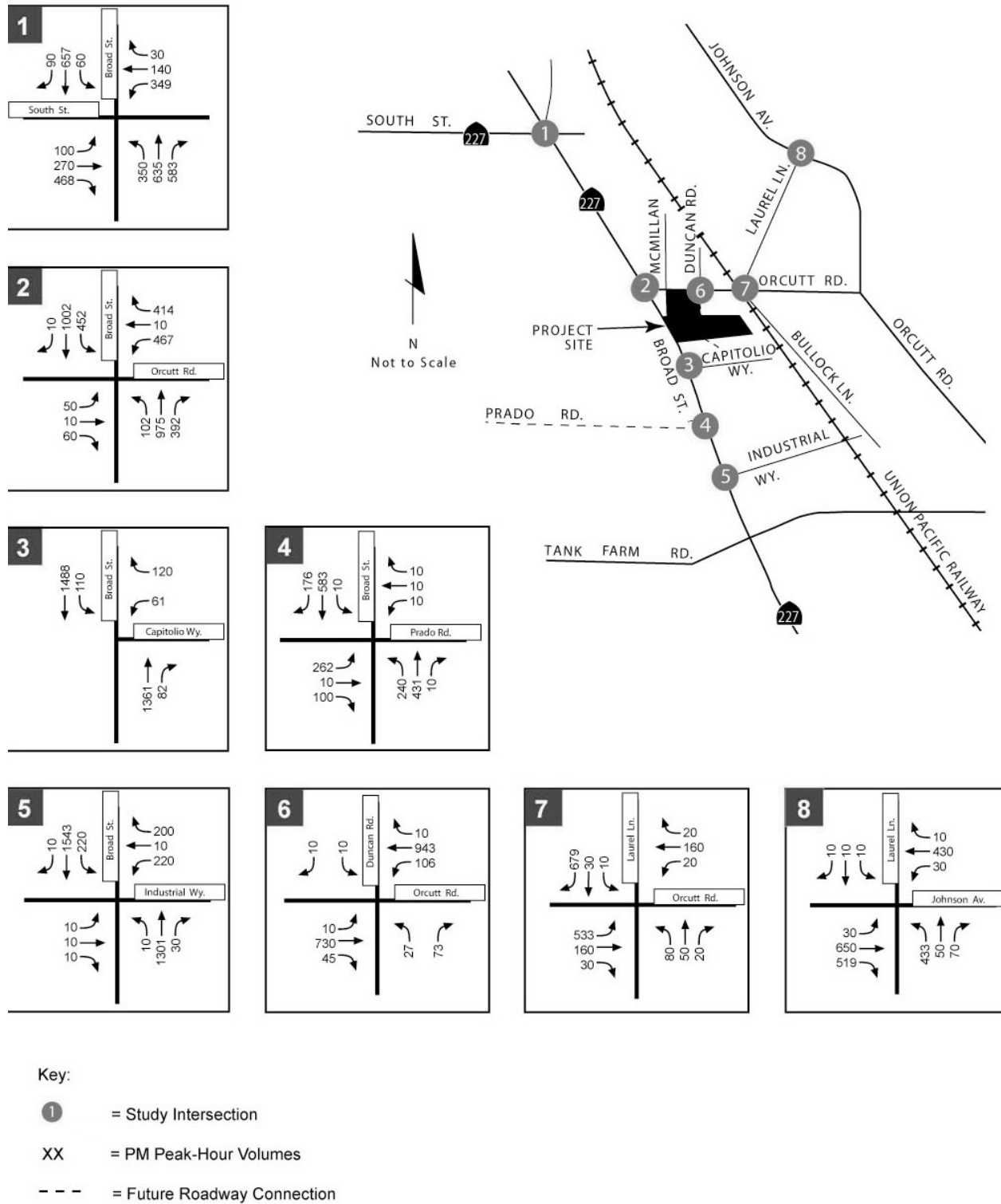
Source: Fehr & Peers, May 2005

TEN-YEAR NO PROJECT PM PEAK-HOUR VOLUMES
FIGURE TR-9



Source: Fehr & Peers, May 2005

**PROJECT TRIP ASSIGNMENT
WITH PRADO ROAD EXTENSION
FIGURE TR-10**



TEN-YEAR PLUS PROJECT PM PEAK-HOUR VOLUMES
FIGURE TR-11

(c) Ten-Year Cumulative Intersection Levels of Service

Table TR-11 presents the intersection levels of service under Ten-Year No Project and Ten-Year Plus Project Cumulative Conditions. Operations improve at most locations with the additional access/circulation provided by the Prado Road extension when comparing the results to Baseline Conditions.

The signalized study intersections are projected to operate at acceptable levels of service, LOS D or better, under Ten-Year Conditions. The addition of project traffic is estimated to exacerbate unacceptable operations at two unsignalized intersections and cause one to degrade to LOS E.

**TABLE TR-11
Ten-Year Cumulative Intersection Levels of Service**

Intersection	Traffic Control	Without Project		With Project	
		Average Delay (sec/veh) ¹	LOS ²	Average Delay (sec/veh)	LOS
1. Broad St./South St. ⁴	Signal	33.3 38.9	C D	36.4 42.7	D
2. Broad St./Orcutt Rd.	Signal	26.6	C	29.3	C
3. Broad St./Capitolio Wy.	Stop Sign ¹	4.4 (70.4)	D (F)	7.3 (>100)	D (F)
4. Broad St./Prado Rd. Extension	Signal	28.0	C	27.3	C
5. Broad St./Industrial Wy.	Signal	27.5	C	28.0	C
6. Duncan Rd./Orcutt Rd./ Sacramento Dr.	Stop Sign ¹	1.8 (48.8)	A (E)	3.5 (61.8)	A (F)
7. Laurel Ln./Orcutt Rd.	Stop Sign ^{1,3}	>100 (>100)	F (F)	>100 (>100)	F (F)
8. Laurel Ln./Johnson Ave.	Signal	19.0	B	19.6	B

¹ Overall intersection delay is presented followed by delay for the most severely impacted turning movement in parentheses.
² LOS = Level of Service
³ Stop sign was recently installed for westbound Orcutt Road.
⁴ [Intersection LOS calculations have been modified based on revisions to the City's traffic model made available after the DEIR was published; refer to Appendix E for revised calculation sheets.](#)
 Significant impacts are highlighted in bold.

TR Impact 22 The westbound approach at the intersection of Broad Street and Capitolio Way is projected to operate at LOS F under Ten-Year Conditions. Traffic volumes at this intersection exceed the minimum thresholds for the MUTCD peak-hour signal warrant.

Implement TR/mm-2.

Residual Impact Implementation of TR/mm-2, which [requires the applicant to provide evidence that improvements have been completed at the Capitolio Road/Broad Street intersection or to bond for the full cost of design and installation of the improvements to the Capitolio Road/Broad Street intersection.](#) ~~includes the signalization of the Broad Street/Capitolio Way intersection and signal~~

~~interconnect and coordination for Broad Street signals between Orcutt Road and Industrial Way~~, would reduce ten-year cumulative intersection operations impacts at the intersection of Broad Street and Capitolio Way to *less than significant with mitigation, Class II*.

TR Impact 23 **The proposed project would exacerbate unacceptable operations at the unsignalized intersection of Duncan Road/Sacramento Drive Extension, and Orcutt Road. The traffic volumes at this intersection slightly exceed the minimum volume thresholds for the MUTCD peak-hour signal warrant.**

TR/mm-20 Prior to issuance of occupancy permits, project applicants shall make “fair share” contributions to the City’s Transportation Impact Fee (TIF) program for the installation of a signal at the Duncan Road/Orcutt Road/Sacramento Drive intersection. If at the time of issuance of permits, the TIF program has not been modified to reflect the costs of the necessary signalization, the applicant shall be responsible for paying current TIF fees plus a mitigation fee associated with the estimated cost differential.

Residual Impact Ten-year cumulative intersection operations impacts at the intersection of Duncan Road, Sacramento Drive, and Orcutt Road would be *less than significant with mitigation, Class II*.

TR Impact 24 **The proposed project would exacerbate unacceptable operations at the unsignalized intersection of Laurel Lane and Orcutt Road. The northbound and southbound movements/approaches are projected to operate at LOS F. Traffic volumes at this intersection meet the MUTCD peak-hour signal warrant.**

Implement TR/mm-3.

Residual Impact Implementation of TR/mm-3, which includes the signalization of Laurel Lane and Orcutt Road, would reduce ten-year cumulative intersection operations impacts at the intersection of Orcutt Road and Laurel Lane to *less than significant with mitigation, Class II*.

3) Ten-Year Cumulative Roadway Segment Levels of Service

Table TR-12 presents the roadway segment levels of service for the study segments under Ten-Year Conditions. Broad Street, south of Orcutt Road, is estimated to exceed LOS D thresholds. As indicated previously, operations of this roadway segment will be governed by operations of the closely spaced signalized intersections on Broad Street. The other two roadway segments are projected to operate at acceptable levels of service.

**TABLE TR-12
Ten-Year Roadway Segment Daily Traffic Conditions**

Roadway Segment	Location	Type ¹	Ten-Year No Project		Ten-Year + Project	
			Daily Volume	LOS ²	Daily Volume	LOS
Broad Street (SR 227)	South of Orcutt Road	4-Lane State Class I Arterial Roadway	34,930	D	36,510	N/A ³
Orcutt Road	Broad Street to Laurel Lane	4-Lane Divided Major Roadway (with left turns)	15,430	C	17,430	D
Laurel Lane	Orcutt Road to Johnson Avenue	4-Lane Divided Major Roadway (no left turns)	11,540	C	11,890	C

¹ Street classification obtained from *2002 Quality/Level of Service Handbook* (Florida Department of Transportation).
² LOS = Level of Service
³ According to Table 4-1 of the *2002 Quality/Level of Service Handbook*, operations of the signalized intersections govern roadway segment operations when daily volumes exceed LOS D thresholds.

Significant impacts are highlighted in bold.

TR Impact 25 The proposed project would cause the roadway segment of Broad Street, south of Orcutt Road, to exceed LOS D volume thresholds under Ten-Year Cumulative Conditions.

Implement TR/mm-2.

Residual Impact Implementation of TR/mm-2, which requires the applicant to provide evidence that improvements have been completed at the Capitolio Road/Broad Street intersection or to bond for the full cost of design and installation of the improvements to the Capitolio Road/Broad Street intersection, includes the signalization of the Broad Street/Capitolio Way intersection and signal interconnect and coordination for Broad Street signals between Orcutt Road and Industrial Way, would reduce ten-year cumulative roadway segment impacts along Broad Street, south of Orcutt Road to *less than significant with mitigation, Class II*.

b. General Plan Buildout Impacts

General Plan Buildout Conditions represent operations with Buildout of the City’s General Plan, which is estimated to occur over the next 30 years. The impacts of the proposed project were evaluated under this scenario.

1) General Plan Buildout Intersection and Roadway Improvements

(a) General Plan Buildout Planned Roadway Improvements

Prado Road would be widened to a four-lane arterial from its eastern terminus near Higuera Street to Broad Street. The lane configuration at the Broad Street/Prado Road intersection is assumed to be the same as presented in the Ten-Year Cumulative scenario. Widening of Orcutt Road to four lanes between Broad Street and Johnson Avenue is also assumed for this scenario.

(b) General Plan Buildout Traffic Volumes

Figure TR-12 presents the General Plan Buildout No Project Conditions volumes at the study intersections. Project-generated traffic were added to these volumes to represent General Plan Buildout Plus Project Conditions as shown on Figure TR-13.

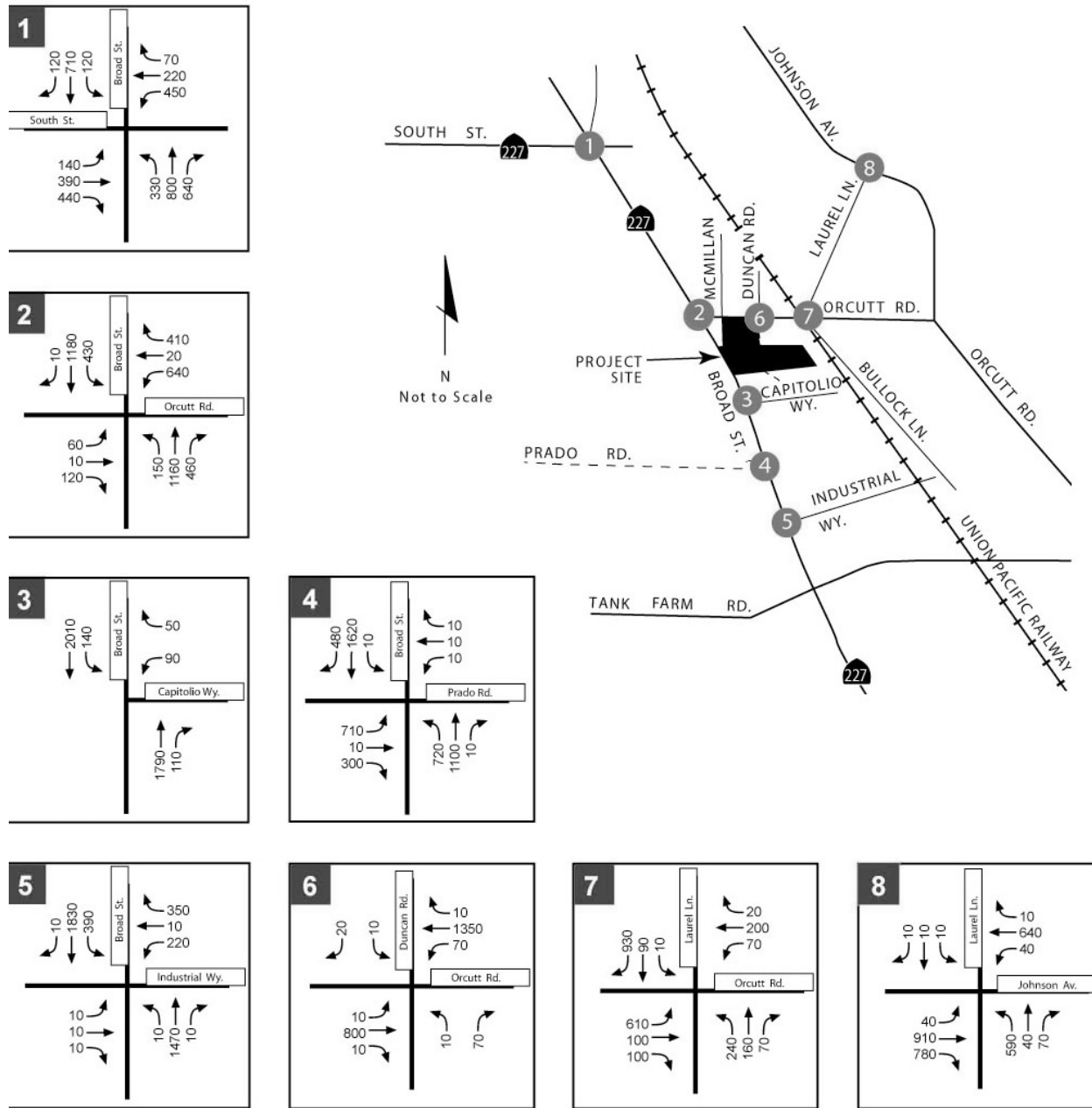
(c) General Plan Buildout Intersection Levels of Service

Table TR-13 presents the levels of service under General Plan Buildout Conditions. ~~The addition of project traffic is estimated to cause the signalized intersection of Broad Street and South Street to degrade to an unacceptable level of service.~~ The proposed project would exacerbate unacceptable operations at Broad Street/South Street, Broad Street/Prado Road and at all three unsignalized intersections.

TABLE TR-13
General Plan Buildout Intersection Levels of Service

Intersection	Traffic Control	Without Project		With Project	
		Average Delay (sec/veh) ¹	LOS ²	Average Delay (sec/veh)	LOS
1. Broad St./South St. ⁴	Signal	53.4 97.6	D F	59.3 >100	D F
2. Broad St./Orcutt Rd.	Signal	41.8	D	46.9	D
3. Broad St./Capitolio Wy.	Stop Sign ¹	34.1 (>100)	D (F)	>100 (>100)	F (F)
4. Broad St./Prado Rd. Extension	Signal	>100	F	>100	F
5. Broad St./Industrial Wy.	Signal	42.7	D	47.2	D
6. Duncan Rd./Orcutt Rd./ Sacramento Dr.	Stop Sign ¹	2.7 (>100)	A (F)	7.5 (>100)	A (F)
7. Laurel Ln./Orcutt Rd.	Stop Sign ^{1, 3}	>100 (>100)	F (F)	>100 (>100)	F (F)
8. Laurel Ln./Johnson Ave.	Signal	45.0	D	47.0	D

¹ Overall intersection delay is presented followed by delay for the most severely impacted turning movement in parentheses.
² LOS = Level of Service
³ Stop sign was recently installed for westbound Orcutt Road.
⁴ [Intersection LOS calculations have been modified based on revisions to the City's traffic model made available after the DEIR was published; refer to Appendix E for revised calculation sheets.](#)
 Significant impacts are highlighted in **bold**.

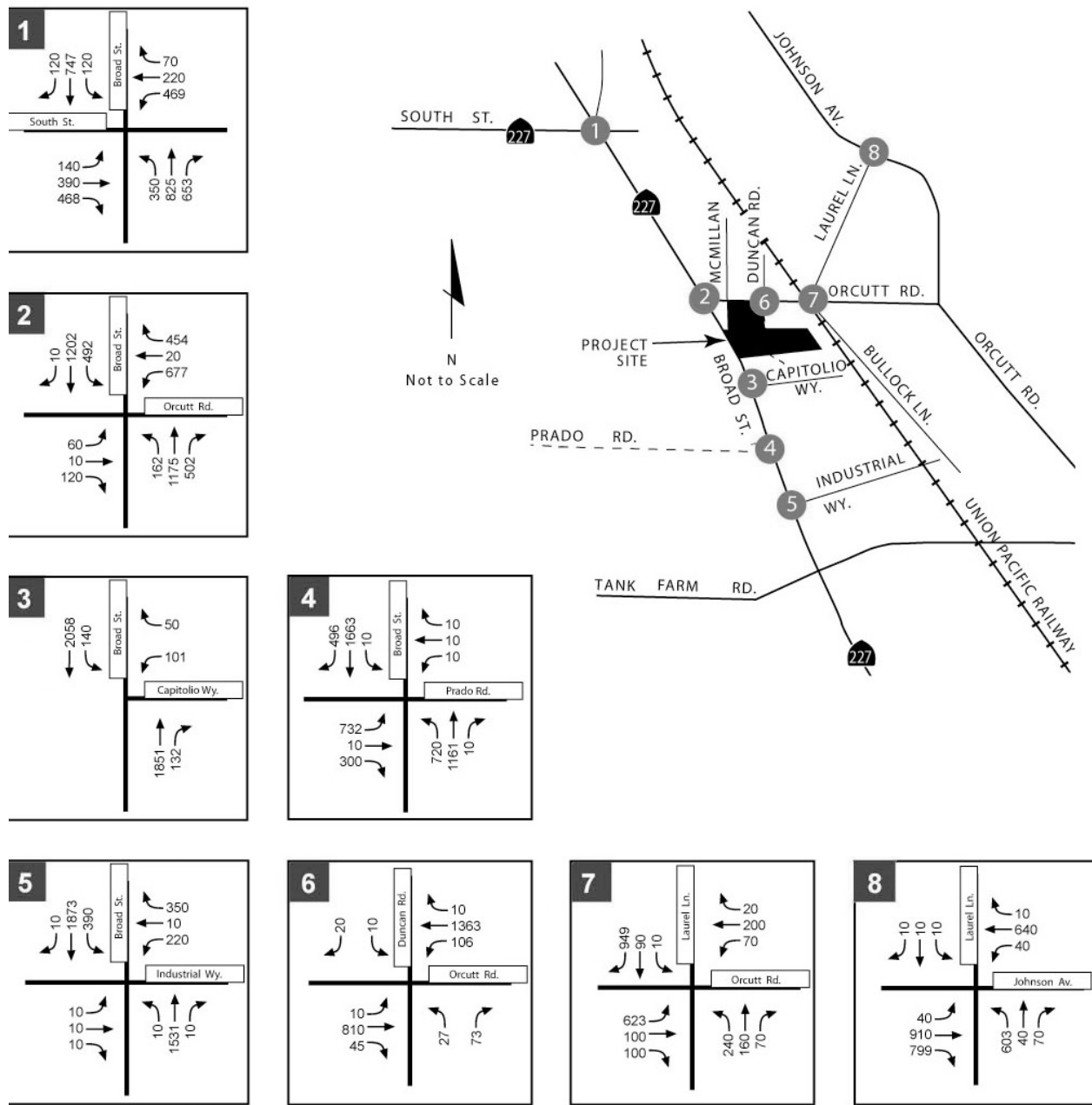


Key:

- ① = Study Intersection
- XX = PM Peak-Hour Volumes
- = Future Roadway Connection

Source: Fehr & Peers, May 2005

**GENERAL PLAN BUILDOUT
NO PROJECT PM PEAK-HOUR VOLUMES
FIGURE TR-12**



Source: Fehr & Peers, May 2005

- Key:
- ① = Study Intersection
 - XX = PM Peak-Hour Volumes
 - = Future Roadway Connection

GENERAL PLAN BUILDOUT
PLUS PROJECT PM PEAK-HOUR VOLUMES
FIGURE TR-13

TR Impact 26 The proposed project would ~~cause the~~ **exacerbate LOS F operations at the intersection of Broad Street and South Street** ~~to operate at LOS E~~ under General Plan Buildout Plus Project Conditions.

TR/mm-21 In order to mitigate buildout level traffic conditions the intersection will need to be widened so as to provide for dual left turn lanes, two through lanes and an exclusive right turn lane in the northbound direction on Broad Street. This project is currently not included in the City’s TIF program. However, the program is being updated and may be amended to include it in the future. Prior to issuance of building permits, project applicants shall make “fair share” contributions to the City’s Transportation Impact Fee (TIF) program for the widening of the south leg of the Broad Street/South Street (Broad Street) intersection for said improvements. ~~addition of a dedicated southbound right turn lane at the intersection of Broad Street and South Street.~~ If at the time of issuance of building permits, the TIF program has not been modified to reflect the costs of the necessary intersection or roadway improvement, the applicant shall be responsible for paying current TIF fees plus a “fair share” mitigation fee as determined by the Director of Public Works, associated with the estimated ~~cost differential~~ intersection improvements.

Residual Impact General Plan Buildout intersection operations impacts at the intersection of Broad Street and South Street would be *less than significant with mitigation, Class II*.

TR Impact 27 The proposed project would exacerbate LOS F operations at the unsignalized intersection of Broad Street and Capitolio Way under General Plan Buildout Conditions.

~~Implement TR/mm-2.~~

TR/mm-21a Prior to issuance of building permits, project applicants shall make “fair share” contributions to the City’s Transportation Impact Fee (TIF) program for the installation of a signal at the Broad Street/Capitolio Way intersection.

Residual Impact ~~Implementation of TR/mm 2, which includes the signalization of the Broad Street/Capitolio Way intersection and signal interconnect and coordination for Broad Street signals between Oreutt Road and Industrial Way, would reduce~~ General Plan Buildout intersection operations impacts at the intersection of Broad Street and Capitolio Way ~~to~~ would be *less than significant with mitigation, Class II*.

TR Impact 28 The proposed project would exacerbate LOS F operations at the future signalized intersection of Broad Street and Prado Road under General Plan Buildout Conditions.

TR/mm-22 Prior to issuance of occupancy permits, project applicants shall make “fair share” contributions to the City’s Transportation Impact Fee (TIF) program for the addition of a second northbound left-turn lane and southbound right-turn overlap phase at the intersection of Broad Street and Prado Road. ~~If at the time of issuance of permits, the TIF program has not been modified to reflect the costs of the necessary intersection or roadway improvement, the applicant shall be responsible for paying current TIF fees plus a mitigation fee associated with the estimated cost differential.~~

Residual Impact General Plan Buildout intersection operations impacts at the future intersection of Broad Street and Prado Road would be *less than significant with mitigation, Class II*.

TR Impact 29 The proposed project would exacerbate unacceptable operations at the unsignalized intersection of Laurel Lane and Orcutt Road under General Plan Buildout Conditions. The MUTCD peak-hour signal warrant thresholds would be exceeded at this location.

Implement TR/mm-3.

Residual Impact Implementation of TR/mm-3, which includes the signalization of the Laurel Lane/Orcutt Road intersection, would reduce General Plan Buildout intersection operations impacts at the intersection of Orcutt Road and Laurel Lane to *less than significant with mitigation, Class II*.

TR Impact 30 The proposed project would exacerbate unacceptable operations at the unsignalized intersection of Duncan Road, Sacramento Drive Extension, and Orcutt Road. The traffic volumes at this intersection slightly exceed the minimum volume thresholds for the MUTCD peak-hour signal warrant.

Implement TR/mm-20.

Residual Impact The City will ultimately determine the proper traffic control at this location. At a minimum, implementation of TR/mm-20, which requires the payment of fees into the TIF for the signalization of the Orcutt Road/Duncan Road/Sacramento Drive intersection, would reduce General Plan Buildout intersection operations impacts at the intersection of Orcutt Road, Duncan Road, and Sacramento Drive to *less than significant with mitigation, Class II*.

(d) General Plan Buildout Roadway Levels of Service

Table TR-14 presents the roadway segment levels of service for the study segments under General Plan Buildout Conditions. Under General Plan Buildout Conditions, Broad Street is projected to exceed LOS D volume thresholds. Orcutt Road and Laurel Lane would operate at acceptable levels of service according to the City’s LOS D standard.

**TABLE TR-14
General Plan Buildout Roadway Segment Daily Traffic Conditions**

Roadway Segment	Location	Type ¹	General Plan Buildout No Project		General Plan Buildout + Project	
			Daily Volume	LOS ²	Daily Volume	LOS
Broad Street (SR 227)	South of Orcutt Road	4-Lane State Class I Arterial Roadway	44,980	N/A ³	46,560	N/A ³
Orcutt Road	Broad Street to Laurel Lane	4-Lane Divided Major Roadway (with left turns)	18,480	D	20,480	D
Laurel Lane	Orcutt Road to Johnson Avenue	4-Lane Divided Major Roadway (no left turns)	14,410	D	14,760	D

¹ Street classification obtained from *2002 Quality/Level of Service Handbook* (Florida Department of Transportation).
² LOS = Level of Service
³ According to Table 4-1 of the *2002 Quality/Level of Service Handbook*, operations of the signalized intersections govern roadway segment operations when daily volumes exceed LOS D thresholds.

TR Impact 31 **The proposed project would exceed LOS D thresholds for the roadway segment of Broad Street, south of Orcutt Road, under General Plan Buildout Conditions.**

Implement TR/mm-21a and TR/mm-22.

Residual Impact The operations of the closely spaced Broad Street intersections would control roadway segment operations when volume thresholds exceed LOS D. Implementation of TR/mm-3-21a and TR/mm-22, would reduce General Plan Buildout roadway segment impacts to *less than significant with mitigation, Class II*.

8. Mitigation Monitoring Summary

Chapter VIII, Mitigation Monitoring and Reporting Plan, summarizes the mitigation measures and monitoring requirements for this resource.

C. AIR QUALITY (AQ)

The air quality analysis is based on information provided by the project applicants, the City of San Luis Obispo, the San Luis Obispo County Air Pollution Control District (SLOAPCD), Fehr & Peers (EIR transportation consultants), and modeling of vehicle and project-specific emissions using the computer program URBEMIS 2002 for Windows Version 7.4.2, provided by the California Air Resources Board (CARB). Emissions calculations from the URBEMIS modeling program are found in Appendix F.

The following section describes the existing air quality setting in San Luis Obispo County (separate air quality standards do not apply for city jurisdictions) and the potential short-term and long-term impacts associated with development of the proposed project. Short-term construction emissions would result from grading and construction operations, transport of materials, and construction-related vehicle emissions. Long-term operational emissions would result from a combination of vehicle emissions and area source emissions related to the various development components.

1. Existing Conditions

a. Regional Meteorology

San Luis Obispo County is part of the South Central Coast Air Basin, which also includes Santa Barbara and Ventura Counties. The climate of the San Luis Obispo area is strongly influenced by its proximity to the Pacific Ocean. Airflow around the County plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific high pressure system and other global weather patterns, topographical factors, and circulation patterns that result from temperature differences between the land and the sea.

In the spring and summer months, when the Pacific High attains its greatest strength, onshore winds from the northwest generally prevail during the day. At night, as the sea breeze dies, weak drainage winds flow down the coastal mountains and valleys to form a light, easterly land breeze. In the fall, onshore surface winds decline and the marine layer grows shallow, allowing an occasional reversal to a weak offshore flow. This, along with the diurnal alteration of land-sea breeze circulation, can sometimes produce a “sloshing” effect. Under these conditions, pollutants may accumulate over the ocean for a period of one or more days and are subsequently carried back onshore with the return of the sea breeze. Strong inversions can form at this time, “trapping” pollutants near the surface.

This effect is intensified when the Pacific High weakens or moves inland to the east. This may produce a “Santa Ana” condition in which air, often pollutant-laden, is transported into the County from the east and southeast. This can occur over a period of several days until the high-pressure system returns to its normal location, breaking the pattern. The breakup of this condition may result in relatively stagnant conditions and a buildup of pollutants offshore. The onset of the typical daytime sea breeze can bring these pollutants back onshore, where they combine with local emissions to cause high pollutant concentrations. Not all occurrences of the “post Santa Ana” condition lead to high ambient pollutant levels, but it does play an important role in the air pollution meteorology of the region.

b. County of San Luis Obispo

San Luis Obispo County constitutes a land area of approximately 3,316 square miles with varied vegetation, topography and climate. From a geographical and meteorological standpoint, the County can be divided into three general regions: the Coastal Plateau, the Upper Salinas River Valley, and the East County Plain. Air quality in each of these regions is characteristically different, although the physical features that divide them provide only limited barriers to the transport of pollutants between regions.

Approximately 75 percent of the County population and a corresponding portion of the commercial and industrial facilities are located within the Coastal Plateau. Due to higher population density and closer spacing of urban areas, emissions of air pollutants per unit area are generally higher in this region than in other regions of the County. The City of San Luis Obispo is located within the Coastal Plateau.

The Upper Salinas River Valley, located in the northern one-third of the County, houses 25 percent of the County's population. Historically, this region has experienced the highest ozone and particulate levels in the County. Transport of ozone precursors from the Coastal Plateau and from the San Joaquin Valley may contribute to this condition.

The East County Plain is the largest region by land area, but only one percent of the County population resides there. Dry land farming and unpaved roads in this region contribute to County totals for particulate emissions, but these emissions rarely affect other regions of the County.

c. Atmospheric Stability and Dispersion

Air pollutant concentrations are primarily determined by the amount of pollutant emissions in an area and the degree to which these pollutants are dispersed in the atmosphere. The stability of the atmosphere is one of the key factors affecting pollutant dispersion. Atmospheric stability regulates the amount of vertical and horizontal air exchange, or mixing, that can occur within a given air basin. Restricted mixing and low wind speeds are generally associated with a high degree of stability in the atmosphere. These conditions are characteristic of temperature inversions. The height of the inversion determines the size of the mixing volume trapped below.

Two types of temperature inversions are created in San Luis Obispo County: subsidence and radiation. Both types of inversions limit the dispersal of air pollutants within the regional airshed. The more stable the air (low wind speeds, uniform temperatures), the lower the amount of pollutant dispersion. The strength of these inversions makes them difficult to disrupt. Consequently, they can persist for one or more days, causing air stagnation and the buildup of pollutants. Highest or worst-case ozone levels are often associated with the presence of inversions.

d. Air Quality Monitoring

The County's air quality is measured by nine total ambient air quality monitoring stations, including four APCD operated permanent stations, two state operated permanent stations, two special stations, and one station operated by the ~~Feseo~~ [ConocoPhillips](#) Oil Refinery for monitoring Sulfur Dioxide (SO₂) emissions. Air quality monitoring is rigorously controlled by

Federal and State quality assurance and control procedures to ensure data validity. Gaseous pollutant levels are measured continuously and averaged each hour, 24 hours a day. Particulate pollutants are generally sampled by filter techniques for averaging periods of three to 24 hours. PM₁₀ (inhalable particulate matter 10 microns or less in size) and PM_{2.5} (inhalable particulate matter 2.5 microns or less in size) are sampled for 24 hours every sixth day on the same schedule nationwide.

e. Existing Air Quality

The significance of a given pollutant can be evaluated by comparing its atmospheric concentration to State and Federal air quality standards, which are presented in Table AQ-1. These standards represent allowable atmospheric contaminant concentrations at which the public health and welfare are protected, and include a factor of safety.

In San Luis Obispo County, ozone and PM₁₀ are the pollutants of main concern, since exceedances of state health-based standards for those are experienced here in most years. For this reason the County has been designated as a non-attainment area for the State PM₁₀ standard (refer to Appendix F).

The County has not had an exceedance of ozone in the last three years, and achieved ozone attainment status granted by the CARB in January 2004. SLOAPCD was one of three air districts in California in 2004 to be re-designated from non-attainment to attainment for the state ozone standard. San Luis Obispo County was the first in California to achieve ozone attainment status through the implementation of community-wide emission reduction measures, making this accomplishment particularly noteworthy. San Luis Obispo County was first designated non-attainment for the state ozone standard in 1989 after adoption of the California Clean Air Act. The law required each non-attainment area to develop a plan to attain the standards expeditiously.

Most populated areas of San Luis Obispo County have enjoyed good overall air quality in the last few years. According to the SLOAPCD 2002 Air Quality Report (July 2003), the only criteria pollutant exceedances countywide were of the state PM₁₀ standard of 50 ug/m³, which occurred on 22 out of 61 different sample days in 2002. Seventeen of those days had standard exceedances recorded only at the Ralcoa Way station in Arroyo Grande, which also recorded the only national PM₁₀ standard exceedance of the year. Morro Bay had one state PM₁₀ standard exceedance, Nipomo Regional Park had two, and the 1300 Guadalupe Road station on the Nipomo Mesa recorded five state PM₁₀ standard exceedance days.

**TABLE AQ-1
Ambient Air Quality Standards**

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARDS ¹	NATIONAL STANDARDS ²	
		CONCENTRATION ³	PRIMARY ^{3,4}	Secondary ^{3,5}
OZONE (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	0.12 ppm (235 µg/m ³) ⁶	Same as Primary Standard
	8 Hour	-----	0.08 ppm (157 µg/m ³)	
FINE PARTICULATE MATTER (PM _{2.5})	24 Hour	No California Standards	65 µg/m ³	Same as Primary Standard
	Annual arithmetic mean		15 µg/m ³	
RESPIRABLE PARTICULATE MATTER (PM ₁₀)	Annual geometric mean	30 µg/m ³	-----	
	24 Hour	50 µg/m ³	150 µg/m ³	
	Annual arithmetic mean	-----	50 µg/m ³	
CARBON MONOXIDE (CO)	8 Hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	-----
	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	
NITROGEN DIOXIDE (NO ₂)	Annual arithmetic mean	-----	0.053 ppm (100 µg/m ³)	Same as Primary Standard
	1 Hour	0.25 ppm (470 µg/m ³)	-----	
LEAD	30 day average	1.5 µg/m ³	-----	Same as Primary Standard
	Calendar quarter	-----	1.5 µg/m ³	
SULFUR DIOXIDE (SO ₂)	Annual arithmetic mean	-----	0.030 ppm (80 µg/m ³)	-----
	24 Hour	0.04 PPM (105 µg/m ³)	0.14 PPM (365 µg/m ³)	
	3 Hour	-----	-----	
	1 Hour	0.25 PPM (655 µg/m ³)	-----	
VISIBILITY REDUCING PARTICLES	8 Hour (10 am to 6 pm, PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when the relative humidity is less than 70 percent.	No National Standards	
SULFATES	24 Hour	25 µg/m ³		
HUDROGEN SULFIDE	1 Hour	0.03 PPM (42 µg/m ³)		

NOTES:

- California standards for ozone, carbon monoxide, sulfur dioxide (1- and 24-hour), nitrogen dioxide, respirable particulate matter (PM₁₀), and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.
- National standards, other than ozone, fine particulate matter (PM_{2.5}), and those based on annual averages or annual arithmetic mean, are not to be exceeded more than once a year. The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{2.5} the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national Policies.
- Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar). Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- National Secondary Standards: The levels of quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- New national 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997. The national 1-hour ozone standard continues to apply in areas that violated the standard. Contact U.S. EPA for further clarification and current national policies.

Source: California Air Resources Board

f. Existing Emissions

Industrial sources, in particular the Tosco (formerly Unocal) complex on the Nipomo Mesa, generate nearly all of the SO₂ emissions in the County. On a regional basis, ozone is the pollutant of greatest concern in San Luis Obispo County, particularly within the coastal plateau. Ozone is a secondary pollutant, formed in the atmosphere by complex photochemical reactions involving precursor pollutants and sunlight. The amount of ozone formed is dependant upon both the ambient concentration of chemical precursors and the intensity and duration of sunlight. Consequently, ambient ozone concentration tends to vary seasonally with the weather. Reactive Organic Gases (ROG), also called Reactive Hydrocarbons (RHC), and Nitrogen Oxides (NO_x) are the primary precursors to ozone formation.

NO_x emissions result primarily from the combustion of fossil fuels; ROG emissions are also generated by fossil fuel combustion and through the evaporation of petroleum products. Emissions of ROG and NO_x are fairly equally divided between mobile and stationary sources, with the Duke Morro Bay power plant being the largest, single stationary source of NO_x emissions in the County. Automobiles and electrical generation produce the majority of NO_x emissions.

Local concentrations of inert (non-reactive) pollutants (carbon monoxide, ozone, PM₁₀) are primarily influenced by nearby sources of emissions, and thus, vary considerably between monitoring stations. SO₂ emissions are mainly concentrated around areas where large quantities of fossil fuels are either burned in electrical production or where petroleum products are refined. SO₂ levels on the Nipomo Mesa and the Duke energy facility in Morro Bay are a good example of this. The most recent emission inventory for San Luis Obispo County is located in Appendix F.

2. Regulatory Setting

a. Federal Clean Air Act Amendments

Air quality protection at the national level is provided through the federal Clean Air Act Amendments (CAAA). President George Bush Sr. signed the current version into law on November 15, 1990. These amendments represent the fifth major effort by the U.S. Congress to improve air quality. The 1990 CAAA are generally less stringent than the California Clean Air Act. However, unlike the California law, the CAAA set statutory deadlines for attaining federal standards. The 1990 CAAA added several new sections to the law, including requirements for the control of toxic air contaminants; reductions in pollutants responsible for acid deposition; development of a national strategy for stratospheric ozone and global climate protection; and requirements for a national permitting system for major pollution sources

b. California Clean Air Act

The California Clean Air Act (CCAA) was signed into law in September of 1988. It requires all areas of the State to achieve and maintain the California ambient air quality standards by the earliest practicable date. These standards are generally more stringent than the Federal standards; thus, emission controls to comply with the State law are more stringent than necessary for attainment of the Federal standards. The CAAA requires that all APCDs adopt and enforce

regulations to achieve and maintain the State ambient air quality standards for the area under its jurisdiction. Pursuant to the requirements of the law, the SLOAPCD adopted a Clean Air Plan (CAP) for their jurisdiction. The Final 2001 SLO County Clean Air Plan is used by the SLOAPCD to address attainment of national and State fugitive dust (PM₁₀) and ozone standards for the entire County (SLOAPCD 2004). The CAP is a comprehensive planning document intended to provide guidance to the APCD and other local agencies, including the City of San Luis Obispo, on how to attain and maintain the State standard for ozone and PM₁₀. The CAP presents a detailed description of the sources and pollutants which impact the jurisdiction, future air quality impacts to be expected under current growth trends, and an appropriate control strategy for reducing ozone precursor emissions, thereby improving air quality.

c. **Consistency with Plans and Policies**

The proposed project has been evaluated for consistency with plans and policies that pertain to air quality. If potential inconsistencies were identified, impacts are discussed in Section V.C.5 below, and mitigation measures have been recommended that reduce or eliminate these inconsistencies.

3. Thresholds of Significance

The significance of potential air quality impacts are based on thresholds identified within Appendix G of the CEQA Guidelines and standards established within the SLOAPCD CEQA Air Quality Handbook. The specifics of these guidelines are defined below.

a. **CEQA Guidelines**

Appendix G of the CEQA Guidelines provides the following thresholds for determining significance with respect to air quality. Air quality impacts would be considered significant if the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or,
- Create objectionable odors affecting a substantial number of people.

b. **SLOAPCD CEQA Air Quality Handbook**

According to the April 2003 CEQA Air Quality Handbook, project impacts may also be considered significant if one or more of the following special conditions apply:

- If the project has the ability to emit hazardous or toxic air pollutants in the close proximity of sensitive receptors such that an increased cancer risk affects the population.

- If the project has the potential to emit diesel particulate matter in an area of human exposure, even if overall emissions are low.
- Remodeling or demolition operations where asbestos-containing materials will be encountered.
- If naturally occurring asbestos has been identified in the project area.
- If project has the ability to emit hazardous or toxic air pollutants in the close proximity of sensitive receptors such as schools, churches, hospitals, etc.
- If the project results in a nuisance odor problem to sensitive receptors.

The CEQA Air Quality Handbook defines thresholds for long-term operational emissions and short-term construction related emissions. Depending on the level of exceedance of a defined threshold, the APCD has established varying levels of mitigation.

1) Significance of Long-term Operational Emissions

The threshold criteria established by the SLOAPCD to determine the significance and appropriate mitigation level for long-term operational emissions (i.e. vehicular and area source emissions) from a project are presented in Table AQ-2. Emissions that equal or exceed the designated threshold levels are considered potentially significant and should be mitigated. As shown in the table, the level of analysis and mitigation recommended follows a tiered approach based on the overall amount of emissions generated by the project.

In general, projects not exceeding the Tier I threshold of 10 lbs per day ROG, NO_x, PM₁₀ or SO₂ or 50 lbs per day of carbon monoxide (CO) emissions do not require mitigation. For projects requiring air quality mitigation, the APCD has developed a list of both standard and discretionary mitigation strategies tailored to the type of project being proposed: residential, commercial, or industrial. The standard mitigation measures should be applied to all projects that exceed the Tier I threshold. In addition, varying levels of discretionary mitigation measures may also be necessary, depending on the amount of emissions generated by the project. Discretionary mitigation measures identified in the 2003 CEQA Handbook or other suitable alternative measures can be suggested to replace standard measures that are not feasible for the project. Table AQ-3 provides insight to the number of additional mitigation measures that should be applied based on estimated project emissions.

TABLE AQ-2
APCD Thresholds of Significance For Operational Emissions Impacts

Pollutant	Threshold	Tier I	Tier II	Tier III
ROG, NO _x , SO ₂ , PM ₁₀	<10 lbs/day	10 lbs/day	25 lbs/day	25 tons/yr
CO	<50 lbs/day	---	550 lbs/day	---
Level of Significance	Insignificant	Potentially Significant	Significant	Significant
Environmental Document	Negative Declaration	Mitigated ND	MND or EIR	EIR

Source: County of San Luis Obispo, APCD CEQA Air Quality Handbook, 2003

**TABLE AQ-3
Mitigation Threshold Guide**

Emissions	Mitigation Measures Recommended		
	Standard Discretionary	Discretionary	Off-Site
< 10 lbs/day	None	None	None
10 - 14 lbs/day	All	3	None
15 - 19 lbs/day	All	6	None
20 - 24 lbs/day	All	10	None
≥ 25 lbs/day	All	All Feasible	Maybe
≥ 25 tons/yr	All	All Feasible	Yes

Source: County of San Luis Obispo, APCD CEQA Air Quality Handbook, 2003

2) Significance of Short-term Construction Emissions

Use of heavy equipment and earth-moving operations during project construction can generate fugitive dust and combustion emissions that may have substantial temporary impacts on local air quality. Fugitive dust emissions would result from land clearing, demolition, ground excavation, cut and fill operations, and equipment traffic over temporary roads at the construction site. Combustion emissions such as NO_x, and diesel particulate matter, are most significant when using large diesel fueled scrapers, loaders, dozers, haul trucks, compressors, generators, and other types of equipment.

By using emission estimates established by the APCD for specific equipment types and gathering information pertaining to each construction activity, an evaluation can be made as to whether or not a significant impact will occur and what level of mitigation is required to lessen the impact to a level of insignificance. Examples of information required to calculate construction emissions are: type and number of equipment to be used, estimated fuel use, emission factors for each piece of equipment, volume of material to be moved, number of hours per day, and the total number of days each piece of equipment will be operated. This type of detailed construction equipment information is often not available during the EIR process, and the APCD has developed an alternative method for calculating construction emissions based on the amount of earthwork involved for a particular project. Table AQ-4 summarizes the level of emissions requiring mitigation.

**TABLE AQ-4
Level of Construction Activity Requiring Mitigation**

Pollutant	Emissions		Amount of Material Moved	
	Tons/Qtr	Lbs/day	Cu. Yds/Qtr	Cu. Yds/Day
ROG	2.5	185	247,000	9,100
	6.0	185	593,000	9,100
NO _x	2.5	185	53,500	2,000
	6.0	185	129,000	2,000
PM ₁₀	2.5		Any project with a grading area greater than 4.0 acres of continuously worked area will exceed the 2.5-ton PM ₁₀ quarterly threshold. Combustion emissions should always be calculated based upon the amount of cut and fill expected.	

Note: All calculations assume working conditions of 8 hours per day, 5 days per week, for a total of 65 days per quarter.

Source: County of San Luis Obispo APCD CEQA Air Quality Handbook, 2003

4. Impact Assessment and Methodology

The APCD has established four separate categories of evaluation for determining the significance of air quality emissions. Full disclosure of the potential air pollutant and/or toxic air emissions from a project is needed for these evaluations, as required by CEQA. The evaluation categories include:

- Comparison of calculated project emissions to APCD emission thresholds;
- Consistency with the most recent CAP for the County;
- Comparison of predicted ambient pollutant concentrations resulting from the project to State and Federal health standards, when applicable; and
- The evaluation of special conditions that apply to certain projects.

Impacts have been analyzed using a reasonable “worst-case” analysis approach for air quality resources. The specific methodologies of each “worst-case” approach are described within Section V.5 under each project component heading, as applicable. Emission estimates for the proposed project have been determined through the following:

- Consultation with the County of San Luis Obispo APCD;
- Use of the County of San Luis Obispo APCD CEQA Air Quality Handbook (April 2003);
- Use of the County of San Luis Obispo APCD Clean Air Plan (December 2001);
- Use of the 2002 URBEMIS 7.4.2 modeling software program designed to estimate operational air emissions from land development projects;
- Use of established emission factors that quantify the amount of emissions of a pollutant per unit time or energy volume;
- Mass emission estimates that quantify the amount of emissions of a pollutant in pounds per cubic yard of earthwork; and,

- Incorporation of the Traffic and Circulation Study prepared by Fehr & Peers for the proposed project.

Subsequent to the determination of emission estimates for any individual project resulting from the proposed rezoning and development, emissions were analyzed in accordance with the thresholds of significance put in place by the SLOAPCD. This analysis provides the basis for the determination of the specific level of impact significance in association to SLOAPCD tiered thresholds.

Specific information regarding construction equipment usage was unavailable at the time this EIR was written; therefore, short-term construction related emissions were assessed using mass emission estimates that quantify the amount of emissions of a pollutant in pounds per cubic yard of earthwork. Mass emission estimates are provided in the APCD CEQA Air Quality Handbook (April 2003). Where no information regarding grading or any other earthwork was known, Construction Best Available Control Technologies were listed to mitigate any potential air quality impacts.

5. Project-Specific Impacts and Mitigation Measures

a. Short-term Construction Related Emissions

1) Combustion Emissions (RHC, ROG, and NO_x)

Combustion emissions are most significant when using large, diesel-fueled scrapers, loaders, bulldozers, haul trucks, compressors, generators, and other heavy equipment. Emissions can vary substantially from day to day depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions. Table AQ-5 provides a general estimate of emission factors for construction equipment typically used during grading and construction activities.

ROG and NO_x are the critical pollutants in the evaluation of the significance of construction emissions because of the high output of these pollutants by heavy diesel equipment normally used in grading operations and their role as ozone precursors. The SLOAPCD has worked hard in the last few years to realize ozone attainment, and continuing efforts must be made to ensure San Luis Obispo County maintains its compliance status.

In addition to ROG and NO_x, diesel particulate matter is of special concern to the APCD. In July 1999, the ARB listed the particulate fraction of diesel exhaust as a toxic air contaminant, identifying both chronic and carcinogenic public health risks. There is no threshold below which there are no significant health risks. Therefore, mitigation requirements and the need for health risk assessments are evaluated by the APCD on a case-by-case basis, based on emission estimates and the potential risk for human exposure and effects. The proposed rezoning and subsequent development projects would occur in a heavily urbanized area, and the potential exposure to humans from diesel particulate matter is significant.

**TABLE AQ-5
Construction Equipment Emission Factors**

Pollutant Emissions (Pounds per Hour)		
Equipment Type	ROG	NOx
Tracked Tractor (Diesel Powered)	0.12	1.26
Wheeled Tractor (Diesel Powered)	0.19	1.27
Wheeled Dozer (Diesel Powered)	0.19	4.16
Scraper (Diesel Powered)	0.28	3.83
Motor Graded (Diesel Powered)	0.04	0.05
Wheeled Loader (Diesel Powered)	0.25	1.89
Tracked Loader (Diesel Powered)	0.10	0.83
Off-Highway Track (Diesel Powered)	0.19	4.16
Roller (Diesel Powered)	0.07	0.87
Miscellaneous (Diesel Powered)	0.15	1.69
Wheeled Tractor (Gas Powered)	0.50	0.43
Motor Grader (Gas Powered)	0.56	0.32
Wheeled Loader (Gas Powered)	0.70	0.52
Roller (Gas Powered)	0.79	0.36
Miscellaneous (Gas Powered)	0.73	0.41
Table AQ-5 was not used in evaluation of construction emission estimates for this project because specific information regarding equipment usage was not available.		

Source: EPA-AP-42, Volume II, September 1985

The air quality analysis provides construction emissions by project component based on APCD screening emission rates for construction operations (refer to Table AQ-6).

(a) Tumbling Waters Component

As proposed, grading for the Tumbling Waters component of the project would occur in a single phase, and encompass approximately 14,596 cubic yards of cut and 11,037 cubic yards of fill over an estimated six-week period. As the excavated material is unearthed, the volume would likely increase as the material becomes less compacted and the preliminary earthwork quantities are likely to change as more detailed information becomes available. Table AQ-6 provides a reasonable worst-case scenario of project related construction emissions based on average working conditions and mass emission rates per cubic yard of material moved. Note that those estimates are based on moving the material one time and do not account for material movement from stockpile areas within the project site or off-site disposal of material if necessary. Under a worst-case scenario and based on preliminary earthwork estimates, the Tumbling Waters component would result in the need to haul and dispose of approximately 3,600 cubic yards of excavated material offsite. Quantifiable emissions estimates from the activities associated with trucking excavated material offsite have not been included in the emission estimates in Table AQ-6 due to the uncertainty of project variables, including where excavated material would be disposed of and the size/capacity of the truck hauling the excavated material. Therefore, the APCD recommends the use of construction best available control technology equipment

incorporated in to the proposed project (i.e. oxidation catalysts, CARB-certified diesel, all equipment properly tuned, etc.).

**TABLE AQ-6
Four Creeks Rezone Construction Equipment Emission Calculations**

Screening Emission Rates for Construction Operations					
Mass Emission Rates					
Reactive Organic Gases (ROG)	0.0203 lbs/yd ³				
Oxides of Nitrogen (NOx)	0.0935 lbs/yd ³				
Combustion Particulate (PM ₁₀)	0.0049 lbs/yd ³				
Carbon Monoxide (CO)	0.3040 lbs/yd ³				
Sulfur Oxides (SOx)	0.0100 lbs/yd ³				
Construction Activities	Tumbling Waters	Creekstön	Broad Street Parcels		
Estimated Volume of Cut & Fill (yd ³)	25,633	7,150	No Current Development Plan		
Maximum Rate of Earth Moved Per Day (yd ³)	855	120			
Total Working Days of Earth Movement (days)	30	60			
Construction Hours Per Day (hours)	8	8			
Total Construction Emissions (lbs)	ROG	NOx	PM₁₀	CO	SOx
Tumbling Waters	520.35	2396.69	125.60	7792.43	256.33
Creekstön	145.14	668.52	35.04	2173.60	71.50
Broad Street Parcels	No Current Development Plan				
Total	665.49	3065.21	160.64	9966.03	327.83
Total Construction Emissions (tons/qtr)					
Tumbling Waters	0.13	0.60	0.03	1.95	0.06
Creekstön	0.07	0.33	0.01	0.54	0.02
Broad Street Parcels	No Current Development Plan				
Total	0.20	0.93	0.04	2.49	0.08
Total Construction Emissions Per Day (lbs)					
Tumbling Waters	17.34	79.89	4.19	259.75	8.54
Creekstön	2.42	11.14	0.58	36.23	1.19
Broad Street Parcels	No Current Development Plan				
Total	19.76	91.03	4.77	295.98	9.73

Source: Based on mass emission estimates, CEQA Air Quality Handbook, 2003

(b) Creekstön Component

Earthwork for the Creekstön component of the project is estimated to be approximately 2,350 cubic yards of cut with approximately 4,800 cubic yards of fill. Grading is estimated to be completed in one single phase during an approximate 3-month period. Under a worst-case scenario and based on preliminary earthwork estimates, the Creekstön component would result in the need to import approximately 2,450 cubic yards of clean fill material. No information has been given as to where the balance of the import material would come from. Quantifiable emissions estimates from the activities associated with trucking excavated material offsite have not been included in the emission estimates in Table AQ-6 due to the uncertainty of project variables, including where imported fill material would be obtained and the size/capacity of the

truck importing the fill material. Therefore, the APCD recommends the use of construction best available control technology equipment incorporated in to the proposed project (i.e. oxidation catalysts, CARB-certified diesel, all equipment properly tuned, etc.).

(c) Broad Street Parcels Component

Broad Street Parcels component comprises the remaining land along Broad Street proposed for rezoning, which includes 1.5 acres on four separately owned properties. The four properties are currently developed with a mixture of residential and commercial uses. Under the proposed rezoning, a total of 36 two-bedroom units could be developed. For the purposes of this air quality analysis, the maximum development potential of 36 units will be assumed.

Due to uncertainties associated project specifics (e.g. equipment usage, earthwork duration, timing, material disposal, etc.) and recognizing the fact that the SLOAPCD has just realized ozone attainment after continual efforts over the last decade, the APCD has recommended the use of construction best available control technology (CBACT) equipment incorporated into all of the proposed project components. The following impacts and mitigation measures apply equally to the Tumbling Waters, Creekstön, and Broad Street Parcels project components.

AQ Impact 1 The proposed project would cause direct short-term construction related air pollutant emissions from earthwork equipment and material disposal operations, resulting in significant combustion related air quality impacts.

AQ/mm-1 Prior to issuance of grading permits, the applicant shall submit a Construction Activities Management Plan for the review and approval of the SLOAPCD. This plan shall include but not be limited to the following Best Available Control Technology for diesel-fueled construction equipment:

- a. Minimize the number of large pieces of construction equipment operating during any given period.
- b. Schedule construction related truck/equipment trips during non-peak hours to reduce peak-hour emissions.
- c. Properly maintain and tune all construction equipment according to manufacturer's specifications.
- d. Fuel all off-road and portable diesel powered equipment including but not limited to: bulldozers, graders, cranes, loaders, scrapers, backhoes, generators, compressors, auxiliary power units, with CARB motor vehicle diesel fuel.
- e. Use 1996 or newer heavy duty off road vehicles to the extent feasible.
- f. ~~Use Caterpillar pre-chamber diesel engines (or equivalent) together with proper maintenance and operation to reduce emissions of oxides of nitrogen (NO_x).~~
- g. Electrify equipment where possible.
- h. Use Compressed Natural Gas (CNG), liquefied natural gas (LNG), bio-diesel, or propane for on-site mobile equipment instead of diesel-powered equipment.

Residual Impact Implementation of the above mitigation measures would result in air quality impacts considered *less than significant with mitigation, Class II*.

AQ Impact 2 Construction of the proposed project would result in direct short-term air quality impacts associated with ROG and NO_x emissions.

AQ/mm-2 Prior to issuance of grading permits, the applicants shall:

- a. Submit a Suitability Report identifying and explaining the particular constraints to using the preferred catalytic soot filter for APCD review and approval. Suitability shall be determined by an authorized representative of the filter manufacturer, or an independent California Licensed Mechanical Engineer.
- b. Identify equipment to be operated during construction as early as possible in order to place the order for the appropriate filter and avoid any project delays.
- c. Include the following specifications on all project plans: Catalyzed diesel particulate filters (CDPF) shall be used on the pieces of equipment estimated to generate the greatest emissions. Emissions from the entire project, including potential hauling activities, shall be evaluated by the APCD as the final grading quantities are known, and the number of filters required based on this estimate. The number of filters required for onsite construction equipment shall be determined after total impacts from the project are known.
 - ~~i. One catalyzed diesel particulate filter (CDPF) shall be used on the piece of equipment estimated to generate the greatest emissions. This is necessary so that contractors bidding on the project can include the purchase, proper installation, and maintenance costs in their bids. If a CDPF is unsuitable for the potential equipment to be controlled, five diesel oxidation catalysts (DOC) shall be used.~~
 - ~~ii. The trucks used to haul export/import material to and from the project site shall be primarily assigned to this task and be controlled with on-road style CDPFs. After the disposal plan has been defined, the project applicants shall complete an addendum to the Construction Activity Management Plan (as defined in AQ/mm-1) to define the appropriate number of trucks that will use these emission control devices.~~
- d. Contact the APCD Planning Department (805-781-5912) to initiate implementation of this mitigation measure at least two months prior to start of construction. The APCD encourages that catalysts be retained and maintained by contractors for future emission reductions and potential benefits for future project bidding.

AQ/mm-3 Prior to issuance of grading permits, if it is determined that portable engines and portable equipment will be utilized, the contractor shall contact the SLOAPCD and obtain a permit to operate portable engines or portable

equipment, and shall be registered in the statewide portable equipment registration program. Contact APCD Engineering Department at 781-5912.

Residual Impact Implementation of the above mitigation measures will result in air quality impacts considered *less than significant with mitigation, Class II*.

2) Fugitive Dust Emissions (PM₁₀)

Use of heavy equipment and earth-moving operations during project construction would generate fugitive dust that would have substantial temporary impacts on local air quality. Fugitive dust emissions would result from land clearing, demolition, ground excavation, cut and fill operations, and equipment traffic over temporary dirt roads at construction sites. Fugitive dust emissions in the form of PM₁₀ would occur at a rate of approximately 55 lbs/acre/day of disturbed land (U.S. Environmental Protection Agency, 1996). Impacts from fugitive dust emissions would be significant because they potentially could cause a public nuisance or would exacerbate the existing PM₁₀ non-attainment status of the SLOAPCD.

The SLOAPCD has defined air quality thresholds for short-term construction related activities (refer to Table AQ-4). Project specific information regarding the type and number of earth moving equipment that would be used, amount of material disturbed per day, duration of earth disturbing activities (phasing), amount of material hauled off-site, and clean fill hauled on-site are not available at this time. Due to various unknown site disturbance activities associated with construction of the proposed project, (i.e. total volume of earth moved, volume of material disturbed per day, duration of earth moving operations, type and number of equipment used, etc.) there would potentially be a quantifiable exceedance of construction related PM₁₀ emissions as a result of this project.

Since the County is considered to be in non-attainment for PM₁₀, the SLOAPCD requires Best Management Practices (BMPs) for all projects involving earthmoving activities regardless of the project size or duration. All standard APCD dust control mitigation measures shall be incorporated into the construction phases of each of the proposed project components to reduce the potential to generate nuisance dust problems and maintain PM₁₀ emissions below the APCD's mitigation threshold.

AQ Impact 3 **PM₁₀ emissions resulting from construction activities would result in direct short and long-term impacts on air quality, further exacerbating the County non-attainment status for PM₁₀.**

AQ/mm-4 Prior to issuance of grading permits, a Dust Control Plan shall be prepared and submitted to the APCD for approval prior to commencement of construction activities. The Dust Control Plan shall:

- a. Use APCD approved BMPs and dust mitigation measures;
- b. Provide provisions for monitoring dust and construction debris during construction;
- c. Designate a person or persons to monitor the dust control program and to order increased watering or other measures as necessary to prevent

- transport of dust off-site. Duties should include holiday and weekend periods when work may not be in progress;
- d. Provide the name and telephone number of such persons to the APCD prior to construction commencement.
 - e. Identify compliant handling procedures.
 - f. Fill out a daily dust observation log.

AQ/mm-5 Prior to issuance of grading permits, the applicant shall:

- a. Obtain a compliance review with the APCD prior to the initiation of any construction activities;
- b. Provide a list of all heavy-duty construction equipment operating at the site to the APCD. The list shall include the make, model, engine size, and year of each piece of equipment. This compliance review will identify all equipment and operations requiring permits and will assist in the identification of suitable equipment for the catalyzed diesel particulate filter;
- c. Apply for an Authority to Construct from the APCD.

AQ/mm-6 Prior to issuance of grading permits, the following mitigation measures shall be shown on all project plans and implemented during the appropriate grading and construction phases to reduce PM₁₀ emissions during earth moving activities:

- a. Reduce the amount of the disturbed area where possible.
- b. Water trucks or sprinkler systems shall be used in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency shall be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water shall be used whenever possible.
- c. All dirt stockpile areas shall be sprayed daily as needed.
- d. Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading shall be sown with a fast-germinating native grass seed and watered until vegetation is established.
- e. All disturbed soil areas not subject to re-vegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD.
- f. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible after initial site grading. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- g. Vehicle speed for all construction vehicles shall be posted to not exceed 15 mph on any unpaved surface at the construction site.
- h. All trucks hauling dirt, sand, or other loose materials are to be covered or shall maintain at least two feet of free board (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114.

- i. Wheel washers shall be installed where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
- j. Streets shall be swept at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used when feasible.
- k. Permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities.

AQ/mm-7 During construction, the applicant shall maintain monthly compliance checks throughout the construction phase, verifying that all equipment and operations continue to comply with the APCD requirements.

Residual Impact Implementation of the above mitigation measures will result in PM₁₀ related air quality impacts considered *less than significant with mitigation, Class II*.

3) Asbestos Exposure

Serpentine is a common rock type within San Luis Obispo County and has been identified by the APCD as having the potential to contain naturally occurring asbestos. The project site has been identified by the APCD as an area that has the potential to contain naturally occurring asbestos. Construction and development of the project could result in an exposure of naturally occurring asbestos due to earthwork and the excavation of serpentine rock.

AQ Impact 4 Earth moving activities for development of the proposed project components would result in grading activities that may expose naturally occurring asbestos, resulting in an indirect short-term impact.

AQ/mm-8 Prior to ~~development plan approval~~ issuance of building permits, the applicants shall:

- a. Conduct a geologic analysis to ensure the presence/absence of serpentine rock onsite. The geologic analysis shall identify if naturally occurring asbestos is contained within the serpentine rock onsite; and,
- b. If naturally occurring asbestos is found at the project site, the applicant must comply with all requirements outlined in the Asbestos Airborne Toxic Control Measures (ATCM). In addition, the applicants shall work with the APCD to prepare an APCD-approved Asbestos Health and Safety Program and an Asbestos Dust Control Plan prior to ~~development plan approval~~ issuance of building permits. The Asbestos Health and Safety Program and Asbestos Dust Control Plan may include, but is not limited to, the following:
 - i. Equipment operator safety requirements: protective clothing, breathing apparatuses to prevent inhalation of airborne asbestos fibers,
 - ii. Dust mitigation measures: continually water site to prevent airborne dust migration, cover all vehicle that haul materials from the site
 - iii. Identification of APCD-approved disposal areas for all excavated materials.

- c. [If naturally occurring asbestos is not present, an exemption request must be filed with the APCD.](#)

Residual Impact Implementation of the above mitigation measure will result in asbestos-related air quality impacts considered *less than significant with mitigation, Class II*.

4) Hazardous Air Pollutant Emissions

Demolition and/or remodeling activities have the potential to negatively impact air quality. Any future development of the Broad Street Parcels portion of the project would potentially involve the demolition of several pre-existing older ranch-style single-family residences. As these are older residences, the possibility exists that these structures could include asbestos containing building materials or other hazardous building materials. Demolition and remodeling activities would be subject to the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (NESHAP) pertaining demolition activities.

AQ Impact 5 Demolition activities for the Broad Street Parcels development may potentially lead to adverse air quality impacts during removal or remodeling of existing structures due to the potential presence of hazardous air pollutants, resulting in an indirect short-term impact.

AQ/mm-9 Prior to Plan approval, the following measures shall be included as conditions of approval for any future proposed development within the Broad Street Parcels component. Prior to commencement of demolition activities, the applicant shall:

- a. Notify the APCD [at least 10 working days](#) prior to commencement of [any](#) demolition activities;
- b. Conduct an Asbestos survey by a Certified Asbestos Inspector;
- c. Use applicable disposal and removal requirements for any identified asbestos containing material.
- d. Contact the SLOAPCD Enforcement Division prior to final approval of any demolition activity.

Residual Impact Implementation of the above mitigation measure will result in demolition related air quality impacts considered *less than significant with mitigation, Class II*.

b. Long-term Project Related Operational Emissions

Long-term operational emissions would result from a combination of increased vehicle traffic and area source emissions. Development of the project components would create substantial emissions to regional air quality due to increased vehicle traffic. It is estimated that in total, the proposed project would result in an average of approximately 3,458 vehicle trips per day resulting from residential land usage and various project related commercial/retail facilities. Traffic related air quality impacts would potentially be significant because the residential and commercial/retail facilities associated with the proposed project would direct traffic to one specific destination, thus concentrating emissions of ROG and NO_x at the project site.

Area source emissions include long-term project specific emissions resulting from energy consumption by developed projects. These emissions take into account emissions resulting from natural gas and electricity usage. Area source emissions result from a combination of the previously mentioned vehicle traffic, combined with stationary sources such as fireplaces, space/water heaters, and a combination of project related commercial and industrial contributions. Operational emissions were determined through the use of the URBEMIS 2002 for Windows 7.4.2 software program (refer to Appendix F). Trip rates were determined from the Fehr & Peers Traffic and Circulation Study prepared for the project. URBEMIS 2002 for Windows 7.4.2 trip rate defaults were used for the components of the project that were not included in the traffic report. Long-term operational emission estimates for the development of the proposed project are shown in Table AQ-7 and the URBEMIS data sheets are included in Appendix F. The emission estimates shown in Table AQ-7 are a combination of summer and winter quantities. Winter area source emission estimates are usually higher because more energy is required and consumed, and the combustion of fuels for heating purposes is much greater for everyday operations as opposed to the summer months. SLOAPCD methodology suggests that the emission estimates be weighted to reflect these facts.

**Table AQ-7
Combined Project Long-Term Operational Emissions**

Long-Term Operational Emissions	Emission Estimates (lbs/day)					Emission Estimates (tons/yr)				
	ROG	NO _x	CO	SO ₂	PM ₁₀	ROG	NO _x	CO	SO ₂	PM ₁₀
Area Source Emissions										
Tumbling Waters	88.60 43.70	4.50 2.40	193.80 96.40	0.50 0.30	29.50 14.50	11.51	0.64	24.12	0.06	3.67
Creekstön	43.70 88.60	2.40 4.50	96.40 193.80	0.30 0.50	14.50 29.50	5.68	0.35	12.01	0.03	1.80
Broad Street Parcels	18.10	0.90	40.10	0.10	6.10	2.37	0.13	4.99	0.01	0.75
Operational (Vehicle) Emissions										
Tumbling Waters	14.00 21.30	17.20 30.30	156.60 265.40	0.10 0.20	11.20 21.70	2.56	3.15	28.59	0.02	2.05
Creekstön	21.30 14.00	30.30 17.20	265.40 156.60	0.20 0.10	21.70 11.20	3.89	5.53	48.44	0.04	3.96
Broad Street Parcels	3.10	4.00	36.00	0.00	2.60	0.57	0.72	6.58	0.0	0.48
Total	188.8	59.3	788.3	1.2	85.6	26.58	10.52	124.73	0.16	12.71
APCD Tier I Thresholds	10	10		10	10	--	--	--	--	--
APCD Tier II Thresholds	25	25	≥ 550	25	25	--	--	--	--	--
APCD Tier III Thresholds	--	--	--	--	--	25	25	--	25	25
Notes:										
1. Bold numbers represent emission estimates that exceed one or more of the APCD thresholds for long-term project related emissions either independently by project component, or cumulatively by addition of all three project components.										
2. The data from the URBEMIS modeling program was adjusted by using 1/3 of the lbs/day winter emission estimates and adding those figures to 2/3 of the lbs/day summer emission estimates to get a combined annual total. The tons per year emission estimates need no adjustment.										

The combined effects of vehicle and area source emissions from the proposed project would result in a long-term operational emission exceedance of the APCD's pounds per day Tier II Threshold for ROG, NO_x, PM₁₀, and CO. The long-term operational emissions Tier III Threshold for tons per year of ROG would also be exceeded.

AQ Impact 6 **ROG, NO_x, CO, and PM₁₀ long-term operation emissions would exceed the APCD's Tier II Threshold, and ROG emissions would exceed the APCD's Tier III Threshold. Development of the project would result in a direct long-term impact on air quality.**

AQ/mm-10 Prior to ~~development plan approval~~ issuance of building permits, the following mitigation measures shall be implemented to reduce area source emissions, to the greatest extent feasible.

- a. Increase walls and attic insulation by 10% above what is required by APCD Title 24.
- b. Plant shade trees along the southern exposures of buildings to reduce summer cooling needs.
- c. Plant shade trees in parking lots to reduce evaporative emissions from parked vehicles.
- d. Use built-in energy efficient appliances.
- e. Orient buildings toward streets with convenient pedestrian and transit access.
- f. Use double-paned windows.
- g. Use low-energy parking lot and streetlights. (e.g. sodium), consistent with visual policies.
- h. Use energy efficient interior lighting.
- i. Incorporate energy efficient skylights into roof plan (i.e. should meet the EPA/DOE Energy Star® rating).
- j. Install high efficiency or gas space heating.
- k. Install door sweeps and weather stripping if more efficient doors and windows are not available.

AQ/mm-11 Prior to ~~development plan approval~~ issuance of building permits, the following mitigation measures shall be implemented, where applicable, to reduce area source emissions resulting from the use of wood-burning stoves. The SLOAPCD approved devices for new homes under APCD Rule 504 include:

- a. All EPA-Certified Phase II wood burning devices;
- b. Catalytic wood burning devices which emit less than or equal to 4.1 grams per hour of particulate matter which are not EPA-Certified but have been verified by a nationally-recognized testing lab;

- c. Non-catalytic wood burning devices which emit less than or equal to 7.5 grams per hour of particulate matter which are not EPA-Certified but have been verified by a nationally-recognized testing lab;
- d. Pellet-fueled wood heaters; and,
- e. Dedicated gas-fired fireplaces.

AQ/mm-12

Based on the Mitigation Threshold Guide (Table 5-1 in the SLOPAPCD CEQA Air Quality Handbook), all of the standard mitigation measures and all of the feasible discretionary mitigation measures identified within the APCD Handbook would apply to the proposed project. ~~The City of San Luis Obispo has met with the APCD to define which measures would be most effective at mitigating impacts from the proposed project. According to APCD recommendations, the applicant shall:~~

- ~~a. Provide transit bus stop enhancements, information kiosk, smart signs, shelter, and lighting within the project area;~~
- ~~b. Provide bicycle paths for project and connecting to Railroad Bicycle Path (as required by TR/mm-6)~~
- ~~c. Provide onsite long and short-term bicycle parking for residential and commercial elements of the project;~~
- ~~d. Implement onsite circulation design element in parking lots to reduce vehicle queuing and improve the pedestrian and bicycle environment;~~
- ~~e. Provide continuous walkways separated from the roadway by landscaping and on street parking;~~
- ~~f. Include internal wiring/cable in dwelling unit that allows telecommuting and teleconferencing to occur simultaneously in at least three locations in each home;~~
- ~~g. Provide pedestrian signalization and signage to improve pedestrian safety;~~
- ~~h. Establish a buffer zone between the railroad and the residential portion of the project;~~

~~Prior to development plan approval, the applicants, the APCD, the Community Development Director, and the Public Works Transportation Division shall meet and define the amount of funding needed to offset vehicle emissions from the project that will be used to implement agreed upon mitigation measures, which may include but not be limited to the following list:~~

- ~~a. Institute a Flash Pass program for employees using public transit.~~
- ~~b. Install or contribute to funding alternative fueling infrastructure (i.e. fueling stations for CNG, LPG, bio-diesel, conductive and inductive electric vehicle charging, etc.).~~
- ~~c. Fund a program to buy and scrap older, higher emission passenger and heavy-duty vehicles.~~
- ~~d. Replace/repower heavy duty diesel vehicles (i.e. bus, passenger, or maintenance vehicles).~~

- ~~e. Purchase particulate filters or oxidation catalysts for local school buses, transit fleets.~~
- ~~f. Provide assistance in the implementation of projects that are identified in the City's Bicycle Transportation Plan.~~
- ~~g. Use alternatively fueled delivery vehicles.~~
- ~~h. Provide transit stop enhancements (i.e., shelters, lighting, etc.) within the project impact area.~~
- ~~i. Implement a comprehensive Transportation Demand Management program for employees subject to the approval of the APCD.~~
- ~~j. Provide on-site long and short-term bicycle parking, per existing City ordinance requirements.~~
- ~~k. Provide preferential carpool parking for employees.~~
- ~~l. Establish an Employee Trip Reduction Program (ETRP) to reduce employee commute trips (i.e. carpooling incentives, van pools, and transit subsidies).~~
- ~~m. Employ and implement a transportation/rideshare coordinator.~~
- ~~n. Implement a lunchtime shuttle to reduce single-occupant vehicle trips.~~
- ~~o. Provide on-site eating, refrigeration, vending for employees.~~
- ~~p. Implement on-site circulation design elements in parking lots to reduce vehicle queuing and improve the pedestrian environment.~~

AQ/mm-13

Prior to development plan approval issuance of building permits, the applicants shall prepare an aggressive tree planting and landscape plan using species endemic to the area to be prepared as a part of the proposed development and shall be developed in coordination with the APCD and the Community Development Director. The tree planting and landscape plan shall include deciduous trees, planted so that they can shade buildings in the summer, decrease indoor temperatures, and reduce energy demands for air conditioning and fossil fuel emissions.

AQ/mm-14

Based on the Mitigation Threshold Guide (Table 5-1 in the SLOPAPCD CEQA Air Quality Handbook), all of the standard mitigation measures and all of the feasible discretionary mitigation measures identified within the APCD Handbook would apply to the proposed project. The City of San Luis Obispo has met with the APCD to define which measures would be most effective at mitigating impacts from the proposed project. According to APCD recommendations, the applicant shall:

- a. Provide assistance in the implementation of projects that are identified in the City's Bicycle Transportation Plan or establish an easement and extend the Railroad Bicycle Path along the frontage between the Tumbling Waters development and the railroad.

~~Prior to development plan approval, the applicants, the APCD, the Community Development Director, and the Public Works Transportation Division shall meet and define the amount of funding needed to offset long-term operational impacts emissions from the project that will be used to~~

~~implement agreed upon off-site mitigation measures. The off-site strategies identified below provide a range of options available to mitigate significant emissions impacts from large residential projects.~~

- ~~a. Develop or improve park and ride lots.~~
- ~~b. Retrofit existing homes in the project area with APCD approved wood combustion devices.~~
- ~~c. Retrofit existing homes in the project area with energy efficient devices.~~
- ~~d. Retrofit existing businesses in the project area with energy efficient devices.~~
- ~~e. Construct satellite worksites.~~
- ~~f. Fund a program to buy and scrap older, higher emission passenger and heavy duty vehicles.~~
- ~~g. Replace/repower transit buses.~~
- ~~h. Replace/repower heavy duty diesel school vehicles (i.e. bus, passenger or maintenance vehicles).~~
- ~~i. Fund an electric lawn and garden equipment exchange program.~~
- ~~j. Retrofit or repower heavy duty construction equipment, or on road vehicles.~~
- ~~k. Repower or contribute to funding clean diesel locomotive main or auxiliary engines.~~
- ~~l. Purchase particulate filters or oxidation catalysts for local school buses, transit buses or construction fleets.~~
- ~~m. Install or contribute to funding alternative fueling infrastructure (i.e. fueling stations for CNG, LPG, conductive and inductive electric vehicle charging, etc.).~~
- ~~n. Fund expansion of existing transit services.~~
- ~~o. Fund public transit bus shelters.~~
- ~~p. Subsidize vanpool programs.~~
- ~~q. Subsidize transportation alternative incentive programs.~~
- ~~r. Contribute to funding of new bike lanes.~~
- ~~s. Install bicycle storage facilities.~~
- ~~t. Provide assistance in the implementation of projects that are identified in City's Bicycle Transportation Plan.~~

Residual Impact Implementation of the above mitigation measures will result in long-term operational related air quality impacts considered *less than significant with mitigation, Class II*.

c. Mixed Use Incompatibility

For the mixed-use portions of the project, it is important to keep in mind that some uses may not be compatible with the overall residential nature of the development. Incompatible land uses could result in potential nuisance problems (i.e. odors, chemical inhalation, dust, etc.) to the surrounding sensitive residential receptors. The APCD has indicated that the following uses could be problematic if residential uses are included in or located adjacent to the same building:

- Nail Salons;
- Dry-cleaners;

- Coffee Roasters;
- Furniture Refurbishing/refinishing, and;
- Any type of spray operation (i.e. painting, automotive, etc.).

AQ Impact 7 **Incompatible mixed-use development has the potential to place residential development in the same building or adjacent to land uses that may potentially create odor or inhalation hazards. These actions could result in a direct long-term impact.**

AQ/mm-15 Prior to approval of the development plan, the City shall coordinate with the APCD to determine appropriate mixed-use designations and to determine potential uses that would require APCD permit approval.

Residual Impact Implementation of the above mitigation measure will result in mixed-use related air quality impacts considered *less than significant with mitigation, Class II*.

6. Cumulative Impacts

The proposed project would cause a significant increase in vehicle and area source emissions, and when analyzed in conjunction with the projects outlined in the cumulative development scenario analysis would result in significant cumulative impacts to air quality.

AQ Impact 8 **The project, combined with all other future projects in the area would result in significant cumulative, direct long-term operational impacts to air quality.**

Implement mitigation measures AQ/mm-1 through AQ/mm-15.

Residual Impacts Implementation of the above mitigation measure would result in cumulative long-term operational related air quality impacts considered *significant, unavoidable, and adverse, Class I*.

7. Mitigation Monitoring Summary

Chapter VIII, Mitigation Monitoring and Reporting Plan, summarizes the mitigation measures and monitoring requirements for this resource.