4.13 Transportation and Circulation[1]

This section describes and evaluates issues related to Transportation and Circulation in the context of the Broadway Plaza Long Range Master Plan (Project). Discussed are the physical and regulatory setting; the baseline for determining environmental impacts; the criteria used for determining the significance of environmental impacts; and potential impacts and appropriate mitigation measures when necessary.

4.13.1 Setting

The existing transportation-related context for the Project is described below, beginning with a description of the street network that serves the Project Site and surroundings. Existing transit service, bicycle and pedestrian facilities, and on- and off-street parking in the vicinity of the Project are also described. Intersection and freeway levels of service are then defined and current conditions for roadways and intersections in the Project Site vicinity are summarized.

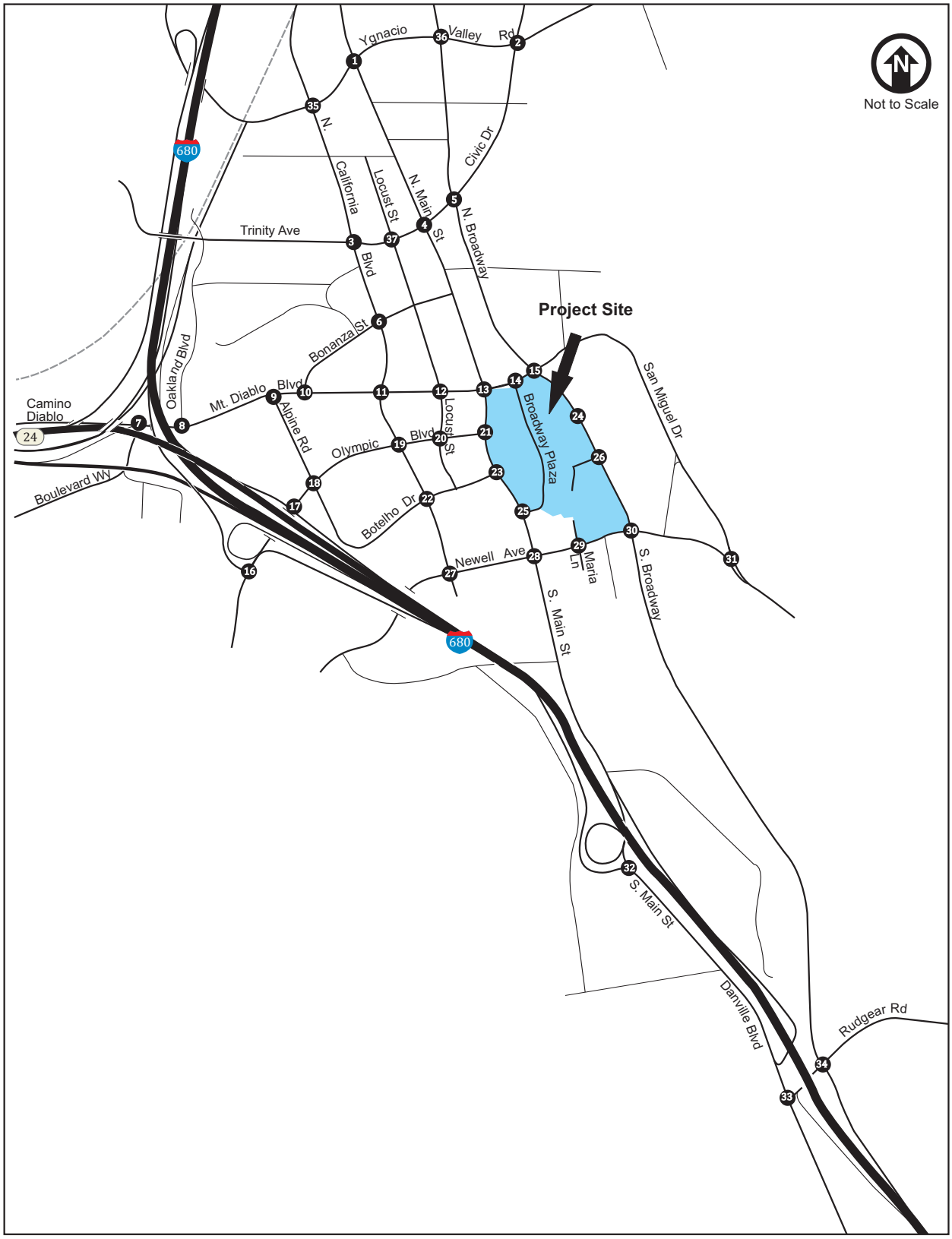
Existing Roadway Network

The Project Site is located at Broadway Shopping Center within the Downtown Core Area of Walnut Creek, California. The Project is bounded by Mount Diablo Boulevard to the north, Newell Avenue to the south, South Broadway to the east, and Main Street to the west. In addition, the Project Site is surrounded by a mix of transportation resources that provide local and regional access to the site, including Interstate 680 (I-680), State Route 24 (SR 24), Ygnacio Valley Road, and local streets, bicycle lanes, sidewalks, and transit. Primary access to the Project Site is via South Main Street, Mount Diablo Boulevard, and South Broadway. Broadway Plaza, a 1,000-foot-long, two-lane street runs in between the Project Site and provides on-street parking and access to commercial and restaurant uses on both sides of the roadway. See **Figures 4.13-1a** and **4.13-1b** for roadways, study intersections, freeway segments, and ramps in the Project Site and surroundings.

Regional Roadways – Routes of Regional Significance

Routes of Regional Significance (RRS) are major roadway and freeway corridors that serve regional traffic, as identified in Action Plans adopted by the Contra Costa Transportation Authority (CCTA) under the countywide Measure C program (CCTA, 2009a). Both **I-680** and **SR 24** are identified as RRS in the *Central County Action Plan for Routes of Regional Significance*. Aside from these corridors, the only local roadway in the Project vicinity designated as a RRS is **Ygnacio Valley Road**, which is a major east-west arterial that begins at I-680 and continues east through the City of Concord and beyond to the community of Clayton. At Clayton

[1] This section provides a summary of existing and cumulative transportation conditions associated with the proposed Broadway Plaza Long-Range Master Plan taken from the *Broadway Plaza Long-Range Master Plan Traffic Impact Study* (Kittelson & Associates Inc. /Dowling, March 2012). The complete document is available in **Appendix G**.

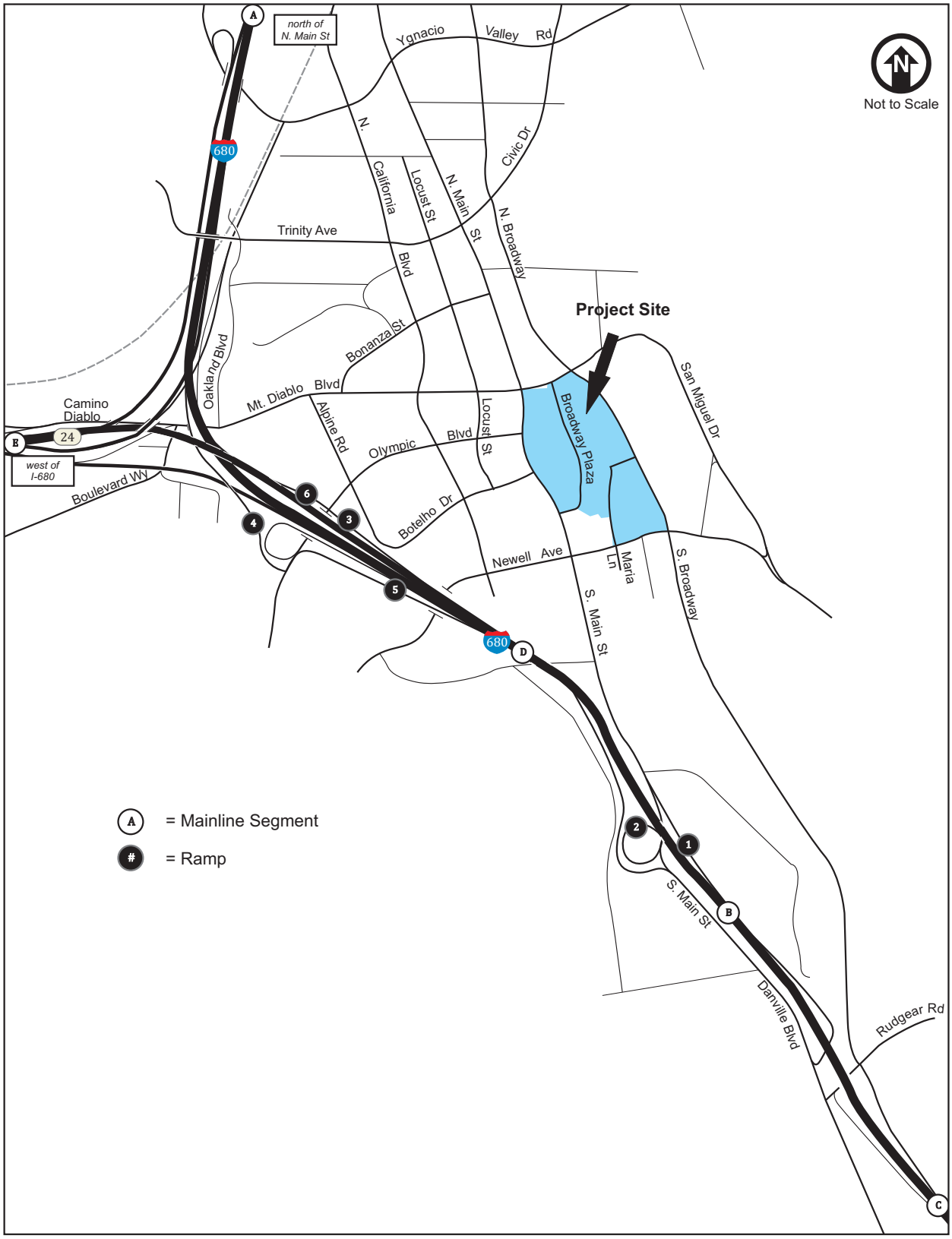


SOURCE: Dowling Associates, Inc.

Broadway Plaza Long Range Master Plan EIR . 211723

Figure 4.13-1a

Project Site Vicinity and Study Intersections



SOURCE: Dowling Associates, Inc.

Broadway Plaza Long Range Master Plan EIR . 211723

Figure 4.13-1b

Project Site and Study Freeway/Ramp Locations

Road, Ygnacio Valley Road becomes Kirker Pass Road. Ygnacio Valley Road is a designated Class III bike route for its entire span in Walnut Creek.

Local Roadways

Broadway is an arterial that spans from Parkside Drive north of Ygnacio Valley Road to Rudgear Road in the south. As with Main Street, Mt. Diablo Boulevard divides the street into North Broadway and South Broadway. Broadway has four travel lanes adjacent to and north of the project site but transition into a two-lane road south of Newell Avenue. In the project vicinity, the average daily traffic volume (ADT) on Broadway is 16,900 vehicles. The roadway serves as the eastern boundary of the project site and provides access to one of the Project's parking garages.

Main Street runs roughly in the north-south direction between Oak Park Boulevard to the north and Castle Hill Road to the south. It is classified as a collector road between Ygnacio Valley Road and Newell Avenue and as an arterial road south of Newell Avenue. Mt. Diablo Boulevard divides the street into North Main Street and South Main Street. Both North Main Street and South Main Street provide access to I-680. In the project vicinity, this facility fluctuates between two and four lanes with an ADT of 11,800 vehicles. The roadway serves as the western boundary of the project site and provides access to one of the Project's parking garage, located at the signalized South Main Street and Botelho Drive intersection.

Mount Diablo Boulevard is a prominent east-west street that provides a direct connection into downtown Walnut Creek from SR 24. It is classified as an arterial between Boulevard Way and Broadway and a collector east of Broadway. In the project vicinity, the ADT on Mt. Diablo Boulevard is 17,500 vehicles. This four-lane road is the northern boundary of the project site.

Newell Avenue is an east-west roadway that runs between Olympic Boulevard and San Miguel Drive through downtown Walnut Creek. It is classified as an arterial road between California Boulevard and Broadway and a collector road east of Broadway. In the project vicinity, the ADT on Newell Avenue is 20,800 vehicles. The four-lane road serves as the southern boundary of the project site. Newell Avenue provides access to the Project's parking garage at its intersection with Maria Lane.

Broadway Plaza spans between Mt Diablo Boulevard and South Main Street in the middle of the project site. A portion of the two-lane roadway is proposed to be vacated as a part of the Project.

Olympic Boulevard is a major east-west street that begins at South Main Street and extends westward to the southern part of the City of Lafayette. West of California Boulevard, it is classified as an arterial road where a mix of Class I, Class II and Class III bicycle facilities are provided. Olympic Boulevard also provides access to I-680 to the west of the project. In the immediate vicinity of the project site, Olympic Boulevard operates as a two-lane road with an ADT of 5,500 vehicles, but transitions to a four-lane road west of California Boulevard with an ADT of 25,100 vehicles.

Locust Street runs from Lacassie Avenue to Botelho Drive. This short, two-lane road lies between California Boulevard and Main Street and primarily serves the downtown shopping area.

California Boulevard is a four-lane arterial roadway that begins north of the Walnut Creek BART station at the intersection with North Main Street and extends to south of Newell Avenue just before I-680. California Boulevard is divided into North and South California Boulevard at Mt Diablo Boulevard. In the project vicinity, the ADT on California Boulevard is 22,400 vehicles. Class II bike lanes are provided on California Boulevard between Pringle Avenue and Mt Diablo Boulevard.

Civic Drive spans from north Walnut Creek, where the four-lane arterial road operates as Oak Road, and south to the city center where it curves westward to become Trinity Avenue after crossing North California Boulevard. Civic Drive has an ADT of 10,500 vehicles west of South Main Street.

Rudgear Road is an arterial road that lies in the southern portion of the city. This east-west roadway provides access to I-680 southbound ramps. The roadway fluctuates between two and four lanes.

San Miguel Drive is a two-lane road that runs between Mt Diablo Boulevard and Newell Avenue. Its intersection with Newell Avenue is a gateway to the residential neighborhood in southeastern Walnut Creek.

Maria Lane is a short discontinuous private road. North of Newell Avenue, the two-lane road operates as Capwell Street, which provides one of the parking accesses to the Project site.

Capwell Street is a private two-lane road north of Newell Avenue, directly across from Maria Lane, that is within the Project Site. Its intersection with Newell Avenue provides one of the parking accesses to the Project Site.

Transit Service

Bay Area Rapid Transit

Bay Area Rapid Transit (BART) provides service to San Francisco, Oakland, Pleasanton, Pittsburg, Richmond, Fremont and a number of intermediate stations from the Walnut Creek BART station, which is approximately one mile from the Project Site.

The BART station is also the site of a major transit hub, the County Connection Transportation Center, where many bus lines converge and offer bus transfers. BART operates in five- to 20-minute intervals between 4:00 a.m. and midnight, Monday through Friday; 6:00 a.m. to midnight on Saturdays; and 8:00 a.m. to midnight on Sundays and major holidays.

The County Connection

Transit service in the Project Site and surroundings is provided by Central Contra Costa County Transit Authority (CCCTA), which operates The County Connection. Weekday and weekend fixed-route bus service and paratransit service are provided by The County Connection. There are currently eight County Connection bus stops located in proximity of the Project. The nearest bus stops for this service are provided on Mount Diablo Boulevard and Broadway Plaza street.

Route 2 operates between Walnut Creek BART, Kaiser Permanente Medical Center, and along Trotter Way. This route provides weekday service, between 6:25 a.m. and 7:27 p.m., with approximately 45-minute frequencies during peak weekday commute periods and 90-minute frequencies during non-peak periods (CCCTA, 2011).

Route 4 (Downtown Walnut Creek Shuttle) provides free shuttle service from the Walnut Creek BART Station to Broadway Plaza during both weekdays and weekends. Weekday service is between 7:10 am and 9:46 p.m., and weekend service is between 9:20 a.m. and 6:51 p.m. This shuttle service operates at 15-minute frequencies on weekdays and 20-minute frequencies on weekends (CCCTA, 2011).

Route 5 operates between Walnut Creek BART, South Broadway, Kaiser Permanente Medical Center, and along Creekside Drive. This route provides weekday service, between 6:22 a.m. and 6:46 p.m., with approximately 45-minute frequencies during peak weekday commute periods and 105-minute frequencies during non-peak periods (CCCTA, 2011).

Route 21 operates between Walnut Creek BART to San Ramon Transit Center via California Boulevard, Main Street, Danville Boulevard, and San Ramon Valley. This route provides weekday service, between 5:30 a.m. and 11:20 p.m., with approximately 30-minute frequencies during peak commute periods and 60-minute frequencies during non-peak periods. This route does not provide weekend bus service (CCCTA, 2011).

Bicycle and Pedestrian Facilities

According to the City of Walnut Creek Bicycle Plan (City of Walnut Creek, 2011a), bikeways are classified as Class I (bicycle paths separated from roads), Class II (striped bicycle lanes within the paved areas of roadways), or Class III (signed bike routes that allow cyclists to share streets with vehicles). Pedestrian facilities generally include sidewalks, crosswalks, curb ramps, pedestrian signals, and streetscape amenities (e.g., benches, tree-lined buffers, etc). Existing bicycle and pedestrian facilities in the Project Site and surroundings are generally comprised of raised, concrete sidewalks, painted pedestrian crosswalks, Class I bike path, Class II bike lanes, Class III bicycle routes, signalized intersections, and dedicated bicycle/pedestrian paths. Although there are no bicycle facilities adjacent to the Project, there are existing facilities nearby, including Class II bicycle lanes along California Boulevard (south of Ygnacio Valley Road) and along Olympic Boulevard, west of California Boulevard. Class III bicycle routes are provided along Ygnacio Valley Road, east of I-680. The Iron Horse Regional Trail, a Class I bicycle/pedestrian path, is located directly east of the Project (path alignment is adjacent to South Broadway), and provides a regional connection between the cities of Pleasanton to the south and Concord to the north.

Currently, there are approximately 30.8 miles of bicycle facilities within the City of Walnut Creek. According to the Bicycle Plan, there are approximately 30.7 miles of additional bicycle facilities proposed throughout the network. Planned bicycle facilities in proximity to the Project include a new Class III bicycle route along San Miguel Drive-Newell Avenue, between Olympic Boulevard and City Limits; a new Class III bicycle route along California Boulevard, between Newell Avenue and Trinity Avenue, and a new Class II bicycle lane along Civic Drive, from

California Boulevard and Walden Road. A series of other proposed bicycle improvements include Class II and Class III facilities along Rudgear Road (east of Danville Boulevard), Broadway between Newell Avenue and Rudgear Road; Trinity Avenue-Civic Drive (east of Oakland Boulevard); Oakland Boulevard, between Trinity Avenue and Mount Diablo Boulevard; and Walker Avenue (east of Iron Horse Trail) (City of Walnut Creek, 2011a).

The City of Walnut Creek adopted the Americans with Disability Act (ADA) Transition Plan Amendment in 2005. The Plan identified the Downtown Pedestrian Retail Area, where the Project is located, to be a Priority 1 area for accessibility project implementation. Since the adoption of the Plan, the City has continued to make investments towards accessibility improvements such as removal of sidewalk obstructions and installing of curb ramps in the priority areas. As such, all streets that serve the district include raised, concrete sidewalks, marked crosswalks at all intersections, pedestrian signals, and countdown timers to indicate how much time is allotted for pedestrians to cross the roadway. Sidewalks and crosswalks encompass the entire Project Site and surroundings.

Existing Traffic Conditions

Intersection Level of Service Analysis Methodologies

The operation of a local roadway network is commonly measured and described using a grading system called Level of Service (LOS). The LOS grading system qualitatively characterizes traffic conditions associated with varying levels of vehicle traffic, ranging from LOS A (indicating free-flow traffic conditions with little or no delay experienced by motorists) to LOS F (indicating congested conditions where traffic flows exceed design capacity and result in long delays). This LOS grading system applies to both roadway segments and intersections.

Signalized Intersections

For signalized intersections, traffic conditions were evaluated using the Contra Costa Transportation Authority Level of Service (CCTALOS) methodology and the Highway Capacity Manual (HCM) methodology.

In accordance with the Contra Costa County *Technical Procedures Update* (CCTA, 2006), the CCTALOS methodology relates a service level grade to volume-to-capacity (v/c) ratio. The v/c ratio relates the total traffic volume for critical opposing movements to the theoretical capacity for those movements. Evaluation of traffic conditions using the CCTALOS methodology was performed using the Traffix software package. The relationships between level of service and v/c ratios for the CCTALOS methodology are shown in **Table 4.13-1**.

The HCM methodology incorporates various intersection characteristics (e.g., traffic volumes, lane geometry, and signal phasing/timing) to estimate the average control delay experienced by motorists traveling through an intersection (Transportation Research Board, 2000). Evaluation of traffic conditions using the CCTALOS methodology was performed using the Synchro/Simtraffic analysis software program. **Table 4.13-2** presents the relationships between delay and level of service for signalized intersections.

TABLE 4.13-1
SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS (CCTALOS METHODOLOGY)

Level of Service	Average Control Delay Per Vehicle (Seconds)	Description
A	≤ 0.60	Uncongested operations, all queues clear in a single cycle.
B	0.61 - 0.70	Uncongested operations, all queues clear in a single cycle.
C	0.71 - 0.80	Light congestion, occasional backups on critical approaches.
D	0.81 - 0.90	Significant congestion of critical approaches, but intersection remains functional. Some vehicles required to wait through more than one cycle during brief periods. No long queues form.
E	0.91 - 1.00	Severe congestion with long standing queues on critical approaches. Blockage may occur if intersection does not provide protected left-turns. Volumes approaching capacity. Queues may extend into adjacent intersections
F	> 1.00	Represents conditions at capacity, with extremely long delays. Total breakdown, stop and go conditions.

SOURCE: Contra Costa Transportation Authority, *Final Technical Procedures Update* (July 19, 2006).

Unsignalized Intersections

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, traffic conditions are evaluated using the HCM operations methodology and the Synchro/Simtraffic analysis software program. With this methodology, the LOS is related to the total delay per vehicle for the intersection as a whole (for all-way stop-controlled intersections), and for each stop-controlled movement or approach only (for side-street stop-controlled intersections). Total delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for a vehicle to travel from the last-in-queue position to the first-in-queue position. Table 4.13-2 presents the relationships between delay and level of service for unsignalized intersections.

Study Intersections

Peak-hour intersection operations at 37 study intersections were evaluated during weekday morning (a.m.) and afternoon (p.m.) peak traffic periods (7:00-9:00 a.m. and 4:00-6:00 p.m.). The intersections were selected based on the expectation that they would be the locations most affected by the Project. All but five of the intersections are located within the Core Area, which is bounded by I-680, South Pacific Right-of-Way and Walden Road, as defined in the City's General Plan. Non-Core Area intersections are denoted by "#" on the list. The location and configuration of the study intersections listed below is presented in Figures 4.13-1a and 4.13-1b.

TABLE 4.13-2
DEFINITIONS FOR INTERSECTION LEVEL OF SERVICE (HCM METHODOLOGY)

Unsignalized Intersections			Signalized Intersections	
Description	**Average Total Vehicle Delay (Seconds)**	**Level of Service Grade**	**Average Control Vehicle Delay (Seconds)**	**Description**
No delay for stop-controlled approaches.	≤10.0	A	≤10.0	Free Flow or Insignificant Delays: Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not stop at all.
Operations with minor delay.	>10.0 and ≤15.0	B	>10.0 and ≤20.0	Stable Operation or Minimal Delays: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay. An occasional approach phase is fully utilized.
Operations with moderate delays.	>15.0 and ≤25.0	C	>20.0 and ≤35.0	Stable Operation or Acceptable Delays: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Most drivers feel somewhat restricted.
Operations with increasingly unacceptable delays.	>25.0 and ≤35.0	D	>35.0 and ≤55.0	Approaching Unstable or Tolerable Delays: Influence of congestion becomes more noticeable. Longer delays result from unfavorable signal progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop. Drivers may have to wait through more than one red light. Queues may develop, but dissipate rapidly, without excessive delays.
Operations with high delays, and long queues.	>35.0 and ≤50.0	E	>55.0 and ≤80.0	Unstable Operation or Significant Delays: Considered to be the limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
Operations with extreme congestion, and with very high delays and long queues unacceptable to most drivers.	>50.0	F	>80.0	Forced Flow or Excessive Delays: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.

SOURCE: Transportation Research Board, Special Report 209, *Highway Capacity Manual*, updated 2000.

Signalized Intersections

1. Ygnacio Valley Road / North Main Street
2. Ygnacio Valley Road / Civic Drive
3. Civic Drive / North California Boulevard
4. Civic Drive / North Main Street
5. Civic Drive / North Broadway
6. Bonanza Street / North California Boulevard
7. Mt. Diablo Boulevard / Boulevard Way#
8. Mt. Diablo Boulevard / Oakland Boulevard
9. Mt. Diablo Boulevard / Alpine Road
10. Mt. Diablo Boulevard / Bonanza Street
11. Mt. Diablo Boulevard / California Boulevard
12. Mt. Diablo Boulevard / Locust Street
13. Mt. Diablo Boulevard / Main Street
15. Mt. Diablo Boulevard / Broadway
16. Olympic Boulevard / I-680 SB Ramps#
17. Olympic Boulevard / I-680 NB Ramps
18. Olympic Boulevard / Alpine Road
19. Olympic Boulevard / South California Boulevard
20. Olympic Boulevard / Locust Street
21. Olympic Boulevard / South Main Street
22. Botelho Drive / South California Boulevard
23. Botelho Drive / South Main Street
25. Broadway Plaza street / South Main Street
27. Newell Avenue / South California Boulevard
28. Newell Avenue / South Main Street
29. Newell Avenue / Maria Lane
30. Newell Avenue / South Broadway
32. I-680 Ramps / South Main Street#
33. Rudgear Road / Danville Boulevard#
34. Rudgear Road / South Broadway#

35. Ygnacio Valley Road / North California Boulevard
36. Ygnacio Valley Road / North Broadway
37. Civic Drive / Locust Street

Unsignalized Intersections

14. Mt. Diablo Boulevard / Broadway Plaza street
24. North Driveway Entrance / South Broadway
26. South Driveway Entrance / South Broadway
31. Newell Avenue / San Miguel Drive

The intersection turning movement counts for the study intersections were provided by the City of Walnut Creek, with the exception of the Newell Avenue / San Miguel Drive, Rudgear Road / Danville Boulevard, and Rudgear Road / South Broadway intersections. The counts provided by the City were collected between October 12 and 20, 2010, and counts were collected for the aforementioned intersections on October 11, 2011. In order to capture data most likely to represent the weekday morning (a.m.) and afternoon (p.m.) peak hours, the morning counts were conducted between 7:00 a.m. and 9:00 a.m., and the evening counts were conducted between 4:00 p.m. and 6:00 p.m. The a.m. and p.m. peak hour traffic volumes for existing conditions are shown in figures in the transportation impact analysis report (Appendix G).

Existing Intersection Levels of Service

The a.m. and p.m. peak hour intersection level of service under existing conditions is shown in **Table 4.13-3**. The results indicate that all but two intersections operate at acceptable levels of service. The intersection of I-680 Northbound Ramps and Olympic Boulevard operates at level of service (LOS) E during the p.m. peak hour, and the South Broadway and South Driveway Entrance intersection operates at LOS F during the p.m. peak hour. LOS calculation sheets are provided in the transportation impact analysis report (**Appendix G**).

Freeway Segment Operations Analysis Methodology

Existing I-680 freeway and SR 24 highway segment operations have been based on available Caltrans volume data. These two roadways are part of the CCTA Congestion Management Program's (CMP) roadway system (CCTA, 2011a). The CMP roadway system includes all major highways and arterial streets in Contra Costa County. The following five mainline study segments, most likely be affected by the Project, were selected for analysis:

1. I-680 north of SR 24 Interchange
2. I-680 south of South Main Street Interchange
3. I-680 south of Rudgear Road
4. I-680 south of Olympic Boulevard
5. SR 24 west of I-680 interchange

TABLE 4.13-3
EXISTING INTERSECTION LEVELS OF SERVICE (LOS)

	Intersection	Traffic Control	Peak Hour	LOS[a]	V/C[b]	Average Delay
1	N. Main Rd/Ygnacio Valley Rd	Performance standard on Ygnacio Valley Road is based on delay index & average speed – see Table 4.13-8				
2	Civic Dr/Ygnacio Valley Rd	Performance standard on Ygnacio Valley Road is based on delay index & average speed – see Table 4.13-8				
3	Civic Dr/N. California Blvd	Signal	AM	A	0.47	
			PM	A	0.59	
4	N. Main St/Civic Dr	Signal	AM	A	0.44	
			PM	B	0.65	
5	N. Broadway/Civic Dr	Signal	AM	A	0.42	
			PM	B	0.66	
6	S. California Blvd/Bonanza St	Signal	AM	A	0.50	
			PM	B	0.64	
7	Boulevard Way/Mt. Diablo Blvd[c]	Signal	AM	A(B)	0.52	17.6
			PM	A(C)	0.49	21.9
8	Oakland Blvd/Mt. Diablo Blvd	Signal	AM	A	0.48	
			PM	A	0.52	
9	Alpine Rd/Mt. Diablo Blvd	Signal	AM	A	0.47	
			PM	B	0.68	
10	Bonanza St/Mt. Diablo Blvd	Signal	AM	A	0.37	
			PM	A	0.42	
11	California Blvd/Mt. Diablo Blvd	Signal	AM	A	0.40	
			PM	B	0.66	
12	Locust St/Mt. Diablo Blvd	Signal	AM	A	0.30	
			PM	A	0.42	
13	Main St/Mt. Diablo Blvd	Signal	AM	A	0.40	
			PM	A	0.52	
14	Broadway Plz st/Mt. Diablo Blvd[d]	One-Way Stop	AM	A		0.10
			PM	A		0.20
15	Broadway/Mt. Diablo Blvd	Signal	AM	A	0.57	
			PM	C	0.76	
16	I-680 SB off ramp/Olympic Blvd[c]	Signal	AM	A(C)	0.54	24.2
			PM	B(C)	0.60	25.6
17	I-680 NB ramps/Olympic Blvd	Signal	AM	D(C)	0.86	26.1
			PM	F(E)	1.24	70.0
18	Alpine Rd/Olympic Blvd	Signal	AM	A	0.45	
			PM	A	0.54	
19	S. California Blvd/Olympic Blvd	Signal	AM	A	0.40	
			PM	A	0.54	

	Intersection	Traffic Control	Peak Hour	LOS[a]	V/C[b]	Average Delay
20	Locust St/Olympic Blvd	Signal	AM	A	0.14	
			PM	A	0.31	
21	S. Main St/Olympic Blvd	Signal	AM	A	0.17	
			PM	A	0.33	
22	S. California Blvd/Botelho Dr	Signal	AM	A	0.33	
			PM	A	0.56	
23	S. Main St/Botelho Dr	Signal	AM	A	0.15	
			PM	A	0.31	
24	S. Broadway/North Driveway Entrance[d]	Two-Way Stop	AM	A		0.5
			PM	C		21.5
25	S. Main St/Broadway Plaza access	Signal	AM	A	0.17	
			PM	A	0.25	
26	S. Broadway/South Driveway Entrance[d]	Two-Way Stop	AM	A		0.9
			PM	F		72.2
27	S. California Blvd/Newell Ave	Signal	AM	A	0.46	
			PM	A	0.54	
28	S. Main St/Newell Ave	Signal	AM	A	0.56	
			PM	A	0.50	
29	Maria Ln/Newell Ave	Signal	AM	A	0.38	
			PM	A	0.46	
30	S. Broadway/Newell Ave	Signal	AM	A	0.49	
			PM	B	0.62	
31	San Miguel Dr/Newell Ave[cd]	All-Way Stop	AM	B		12.4
			PM	B		11.7
32	S. Main St/I-680 SB off ramp[c]	Signal	AM	B(B)	0.61	10.9
			PM	C(B)	0.75	19.5
33	Danville Blvd/Rudgear Rd[cd]	Signal	AM	B		14.7
			PM	B		17.1
34	S. Broadway/Rudgear Rd[cd]	Signal	AM	D		38.6
			PM	C		33.9
35	Ygnacio Valley Rd/ N. California Blvd	Performance standard on Ygnacio Valley Road is based on delay index & average speed – see Table 4.13-8				
36	Ygnacio Valley Rd/N. Broadway	Performance standard on Ygnacio Valley Road is based on delay index & average speed – see Table 4.13-8				
37	Civic Dr/Locust St	Signal	AM	A	0.20	
			PM	A	0.36	

[a] Two LOS are shown for CCTALOS (HCM) methods, where applicable, e.g. A(B) at Boulevard Way/Mt. Diablo Blvd intersection
[b] V/C = Volume-to-Capacity ratio;
[c] Intersection is not located within Core Area as defined by City's General Plan
[d] Average vehicle delay (in seconds per vehicle) is reported for (1) unsignalized intersections; and/or (2) ramp intersections.
SOURCE: Kittelson/Dowling Associates, Inc , 2012.

The level of service is a qualitative assessment of motorists' and passengers' perceptions of traffic conditions. The level of service is generally described in terms of travel time and speed, freedom to maneuver, traffic interruptions, comfort and convenience. The level of service applies quantifiable traffic measures, such as average speed, intersection delays, density and v/c ratios, to approximate driver satisfaction. These measures differ by roadway type because the user's perceptions and expectations vary by roadway type (Transportation Research Board, 2000). **Table 4.13-4** contains the density thresholds for freeway segments.

TABLE 4.13-4
LEVEL OF SERVICE TRESHOLDS FOR FREEWAY SEGMENTS

Level of Service	Density Range (pc/mi/ln)[a]
A	≤ 11
B	> 11 - 18
C	> 18 - 26
D	> 26 - 35
E	> 35 - 45
F	> 45

[a] pc/mi/ln = passenger car per mile per lane.

SOURCE: Transportation Research Board, *Highway Capacity Manual*, updated 2000.

Ramp Analysis Methodology

Existing ramp and ramp junction operations have been based on available Caltrans volume data for the following six ramp locations along I-680:

1. I-680 northbound South Main Street off-ramp
2. I-680 southbound South Main Street on-ramp
3. I-680 northbound Olympic Boulevard off-ramp
4. I-680 southbound Olympic Boulevard off-ramp
5. I-680 southbound Olympic Boulevard on-ramp
6. I-680 northbound Olympic Boulevard on-ramp

The HCM methodology is applied for all ramp intersections under Caltrans' sole jurisdictions per Caltrans' *Guidelines* (Caltrans, 2002). HCM procedures were used to calculate the density for each LOS threshold from LOS A to LOS F. First, the peak-hour demand flow rate immediately upstream of merge influence area or at the beginning of the deceleration lane at diverge was calculated. In addition, several capacity values were computed to determine the critical capacity. The determining capacities are: 1) maximum total flow approaching a major diverge area on the freeway, 2) maximum total vehicle flow departing from a merge or diverge area on the freeway, 3) maximum total flow entering the ramp influence area, and 4) maximum flow on a ramp. When demand flow is greater than the critical capacity, the service level would be LOS F. Otherwise, given a length of the acceleration lane or deceleration lane, the LOS was determined using the density of flow within the ramp influence area according to HCM procedures. **Table 4.13-5** contains the LOS and density thresholds for merge and diverge areas.

TABLE 4.13-5
LEVEL OF SERVICE CRITERIA FOR RAMP MERGE-DIVERGE AREAS

Level of Service	Maximum Density[a]
A	<10 pc/h/ln
B	>10 - 20 pc/h/ln
C	>20 - 28 pc/h/ln
D	>28 - 35 pc/h/ln
E	>35 pc/h/ln
F	Demand exceeds capacity when queues begin to form

[a] Maximum density based on passenger cars per hour per travel lane (pc/h/ln).

SOURCE: Transportation Research Board, *Highway Capacity Manual – Special Report 209*, 2000.

Existing Freeway Segment and Ramp Levels of Service

Peak hour traffic counts along freeway segments and ramps were compiled using the California Department of Transportation (Caltrans) loop detectors and ramp counts. The counts used in the freeway and ramp analysis are based on an average of the counts reported for a three-day, mid-week (Tuesday-Thursday) period. Ramp data is based on 2009 counts, while mainline data is from counts collected in 2010. The a.m. and p.m. peak hour traffic volumes for existing conditions are shown in **Table 4.13-6**. LOS calculation sheets are provided in the transportation impact analysis report (Appendix G).

Traffic operations for the a.m. and p.m. peak hours on freeway segments and ramps are summarized in **Table 4.13-7**. As shown below, all of the study freeway segments and ramps are currently operating at acceptable level of service conditions (LOS E or better).

TABLE 4.13-6
AM, PM, AND DAILY PEAK HOUR FREEWAY AND RAMP VOLUMES - EXISTING TRAFFIC CONDITIONS

Mainline Segment Volumes					
Number	**Location**	**Direction**	**AM Peak**	**PM Peak**	**Daily**
1	I-680 North of N. Main Street	NB	8,080	11,020	135,820
		SB	7,760	7,150	107,160
2	I-680 South of S. Main Street	NB	7,690	6,650	93,030
		SB	6,390	6,750	87,150
3	I-680 South of Rudgear Road	NB	7,650	7,370	95,230
		SB	6,750	7,150	96,420
4	I-680 South of Olympic Boulevard	NB	7,930	6,970	96,610
		SB	7,160	7,420	96,220
5	SR 24 West of I-680	WB	8,610	6,400	97,970
		EB	5,940	8,340	99,390
I-680 Ramp Volumes					
Number	**Location**	**Type**	**AM Peak**	**PM Peak**	**Daily**
1	I-680 NB S. Main Street Off-Ramp	Diverge	440	450	5,280
2	I-680 SB S. Main Street On-Ramp	Merge	230	340	3,590
3	I-680 NB Olympic Boulevard Off Ramp	Diverge	520	770	6,060
4	I-680 SB Olympic Boulevard Off-Ramp	Diverge	1,050	990	13,320
5	I-680 SB Olympic Boulevard On-Ramp	Weave B	320	470	5,310
6	I-680 NB Olympic Boulevard On-Ramp	Weave A	830	1,170	13,590

SOURCE: Caltrans, 2009; 2010.

Route of Regional Significance

In the study area, I-680 and Ygnacio Valley Road are designated Routes of Regional Significance by the Central County Action Plan. The multi-modal transportation service objectives of the Action Plan, which will be further discussed in the Regulatory Setting section below, has identify delay index (DI) as the measure of effectiveness for the two regional routes. In addition to DI, the City's General Plan has established a standard of 15 mph for average peak hour speed on regional corridor in the city including Ygnacio Valley Road. This analysis assessed the DI on the I-680 corridor between North Main Street and Rudgear Road and the Ygnacio Valley Road corridor between I-680 southbound on-ramp and Oak Grove Road, as well as average peak hour speed by direction along the Ygnacio Valley Road corridor.

TABLE 4.13-7
LEVEL OF SERVICE FOR FREEWAY MAINLINE SEGMENTS AND RAMPS – EXISTING CONDITIONS

Number	Location	Direction	AM Peak		PM Peak	
			Density[a]	LOS	Density[a]	LOS
Mainline Segments						
1	I-680 North of N. Main Street	NB	21.9	C	32.9	D
		SB	17.9	B	16.5	B
2	I-680 South of S. Main Street	NB	25.8	C	21.8	C
		SB	20.9	C	22.2	C
3	I-680 South of Rudgear Road	NB	36.2	E	33.7	D
		SB	29.2	D	32.0	D
4	I-680 South of Olympic Boulevard	NB	26.8	D	22.9	C
		SB	19.5	C	20.2	C
5	SR 24 West of I-680	WB	30.1	D	20.9	C
		EB	19.4	D	28.8	D
Ramps						
1	I-680 NB S. Main Street Off-Ramp	Diverge	33.1	D	29.6	D
2	I-680 SB S. Main Street On-Ramp	Merge	21.3	C	22.9	C
3	I-680 NB Olympic Boulevard Off-Ramp	Diverge	34.3	D	32.4	D
4	I-680 SB Olympic Boulevard Off-Ramp	Diverge	37.4	E	33.7	D
5	I-680 SB Olympic Boulevard On-Ramp	Weave B	26.0	C	29.2	D
6	I-680 NB Olympic Boulevard On-Ramp	Weave A	37.7	E	41.3	E

[a] Density based on passenger cars per hour per travel lane (pc/h/ln).
SOURCE: Kittelson/Dowling Associates, Inc, 2012.

Delay Index Methodology

Delay index is "an expression of the amount of time required to travel between two points during the peak hour as compared to non-peak hours"[2]. It is calculated by dividing peak travel time (congested) by non-peak travel time (uncongested). A DI of 1.0 indicates the peak hour traffic moves at free-flow speed; while a DI of 2.0 indicates that it would take twice as long to travel the same distance during the peak hours than non-peak hours. For I-680, the CCTA travel demand model was used to estimate the uncongested and congested travel times during the a.m. and p.m. peak hours. The CCTA model provided an estimate of DI for the 2000 and 2030 conditions. The

[2] Central County Action Plan for Routes of Regional Significance, adopted July 9, 2009.

existing conditions are similar to those from the Year 2000 model results due to the economic downturn, which showed that existing volumes are similar to or lower than that in 2000.[3]

For the Ygnacio Valley Road corridor between I-680 and Oak Grove Road, the travel times used to derive the existing DI for this analysis were compiled from travel time runs collected for the PASS 2010/11 City of Walnut Creek Program for Arterial System Synchronization Project (September 15, 2011). The lowest travel time collected for each direction was used as the non-peak travel time regardless of what time period the run was made. The highest travel times collected by direction during the a.m. peak hour and during the p.m. peak hour were used to indicate the peak travel time during the corresponding peak hour and direction. Average peak hour speed is a function of travel time and the length of the corridor.

As shown in **Table 4.13-8**, the DI was calculated for the segments of I-680 between North Main and Rudgear and for Ygnacio Valley Road between Oak Grove Road and I-680 and found to be less than 2.0. With the signal optimization along the Ygnacio Valley Road corridor in the peak direction, the delay index westbound during the a.m. peak hour (1.03) and eastbound during the p.m. peak hour (1.10) is lower than that of the non-peak direction. Detailed description of DI and average speed calculation approach is contained in the transportation impact analysis report (Appendix G).

TABLE 4.13-8
DELAY INDEX – EXISTING CONDITONS

Roadway	Limits	AM Delay Index	PM Delay Index	AM Average Speed	PM Average Speed
I-680 SB	North Main to Rudgear	1.42	1.77	43	35
I-680 NB	Rudgear to North Main	1.61	1.42	38	43
Ygnacio WB	Oak Grove to I-680	1.03	1.47	32	23
Ygnacio EB	I-680 to Oak Grove	1.24	1.10	24	26

SOURCE: 2000 CCTA Model, Kittelson/Dowling Associates, Inc., 2012

4.13.2 Environmental Setting

The overall baseline date for this EIR is May 2012. Although traffic counts were conducted in Year 2010 and Year 2011, the City of Walnut Creek and the EIR preparers have determined that existing traffic conditions with the addition of development projects and transportation improvement projects completed between time of traffic counts and May 2012 would represent baseline conditions. As such, the environmental setting described above and the additional development and transportation projects described below, constitutes the baseline for determining the significance of potential impacts on transportation and traffic. It consists of the pre-Project

[3] A comparison of average daily traffic volumes on Ygnacio Valley Road indicated a reduction of 10 to 20 percent between Year 2000 and Year 2010. For example, the data show a reduction of 5,456 trips on the segment between John Muir Hospital and San Carlos Drive during this period and a reduction of 5,840 trips on the segment between Oakland Boulevard and N. California Boulevard during the same period.

environmental conditions (physical and traffic characteristics) on area roadways (regional and local).

4.13.3 Regulatory Setting

Existing transportation policies, plans, laws, and regulations that apply to the Project are summarized below. This information provides a context for the impact discussion related to the Project's consistency with applicable regulatory conditions.

State

California Department of Transportation

Caltrans is responsible for the planning, design, construction and maintenance of all State highways. Caltrans' jurisdiction includes improvements to the interchange ramps serving area freeways. The *Guide for the Preparation of Traffic Impact Studies* provides consistent guidance for Caltrans staff who reviews local development and land use change proposals (Caltrans, 2002). The *Guide* also informs local agencies about the information needed for Caltrans to analyze the traffic impacts to State highway facilities, including freeway segments, on- or off-ramps, and signalized intersections. Caltrans facilities in the Project Site and surroundings include I-680 and SR 24, as well as the on- and off-ramps from these State facilities.

The *Guide* stated that "Caltrans endeavors to maintain a target level of service (LOS) at the transition between LOS C and LOS D on State highway facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing Measure of Effectiveness (MOE) should be maintained."

Regional

Contra Costa Transportation Authority

The Contra Costa Transportation Authority (CCTA) serves as the Congestion Management Agency (CMA) of Contra Costa County (CCTA, 2011a). As required by State law, CCTA must prepare a Congestion Management Program (CMP) that outlines strategies for managing the regional transportation network. One requirement of the CMP is to set traffic level of service standards for the State Highways and principal arterials. Every two years, the CMP is updated to identify existing and future transportation facilities that would operate below the acceptable service level and to identify improvements and strategies for intersection and segments where future growth would degrade that service level. Standards for roadway operations in Walnut Creek are defined on a countywide basis per the CMP.

In addition, CCTA is responsible for the Growth Management Program, which was first established in 1989, after Contra Costa County voters passed Measure C, and subsequently updated and modified by Measure J in 2004. Measure C, which raised the sales tax to provide funding for regional transportation improvements, required local jurisdictions to adopt and

implement a growth control program in order to receive their share of funds for transportation Projects, including maintenance. Measure J establishes the Transportation Sales Tax Expenditure Plan, which extends the transportation sales tax initially authorized by the passage of Measure C.

The Growth Management Program establishes a cooperative, multi-jurisdictional planning process requiring participation from all cities and towns and the County in managing the impacts of growth in Contra Costa County. The Measure C program set traffic level of service standards for regional and non-regional routes in Contra Costa County, which the City has incorporated into its General Plan. These standards are tied to land use and provide for a tiered system that uses different standards for different types of streets. Unlike Measure C, Measure J no longer requires the adoption of level of service standards.

Local jurisdictions work through their respective Regional Transportation Planning Committees. For central Contra Costa County, the Transportation Partnership and Cooperation Committee (TRANSPAC) developed the Central Contra Costa Action Plan adopted in 2009 ("Action Plan") (CCTA, 2009a). The Action Plan identifies multi-modal traffic service objectives (MTSOs) for *Routes of Regional Significance* (*RRS*) which includes Ygnacio Valley Road and I-680 in Walnut Creek (CCTA, 2009b).. The MTSO for I-680 is measured by a targeted delay index of 4.0, which means that the peak hour travel time is not more than four times the off-peak travel time. For Ygnacio Valley Road in the study area, the MTSO is measured by level of service at the Ygnacio Valley Road/Civic Drive intersection and the Ygnacio Valley Road/Bancroft Road intersection with LOS F as the standard.

Local

Walnut Creek General Plan

The Walnut Creek General Plan (2006) establishes goals and policies that guide the development of the city. Specific goals and policies pertinent to transportation as they relate to the Project are detailed in this section.

Chapter 2, *Quality of Life*, of the Walnut Creek General Plan contains the following goal and action statement related to transportation and parking.

> **GOAL 6.** Make Walnut Creek a community accessible to all.
>
> > *Action 8.1.2* – As part of the City's Project review processes, consider the needs of persons of all abilities.

Chapter 4, *Built Environment*, of the Walnut Creek General Plan contains the following goals, policies, and action statements related to transportation and parking.

> **GOAL 10.** Coordinate the location, intensity, and mix of land uses with transportation resources.
>
> **GOAL 11.** Create a balanced, safe, and efficient regional and subregional transportation system.

Policy 11.1. – Require that commercial Projects comply with the City's performance standards for fire, police, parks, water, flood control, and sanitary sewer facilities.

Policy 11.2. – Implement Measure C and plan for the implementation of Measure J.

Action 11.2.1. Demonstrate compliance with all components of the Measure C (1988) and Measure J (2004) Growth Management Program.

Action 11.2.2. At a minimum, comply with the Measure C adopted standards for Level of Service at intersections along Basic Routes.

Policy 11.3. – Require that new development pay its share of costs associated with growth.

Action 11.3.1. Implement TRANSPAC's Regional Transportation Mitigation Program with respect to new regional development and its impacts on Walnut Creek roadways.

Action 11.3.2. Assess a traffic impact fee on new development.

Action 11.3.3. Apply the Transportation Authority's travel demand model (as updated from time to time) in analyzing developments that exceed Measure J thresholds.

GOAL 12. Make more efficient use of the regional and subregional transportation system.

Policy 12.1. – Promote the use of carpools and vanpools.

Action 12.1.3. Encourage transportation demand management (TDM) programs in new development.

Policy 12.2. – Support infill and redevelopment in existing urban areas.

GOAL 19. Enhance the urban design quality of the Core Area and its subareas.

Policy 19.2. – Improve directional signage for pedestrians and vehicles in the Core Area.

Action 19.2.1. Design and implement a comprehensive Core Area directional sign program that shows shuttle stops; parking garage locations, capacities, and availability; orients residents and visitors; and shows optimal routes for getting to key cultural, shopping and civic destinations in the city.

GOAL 20. Reinforce the urban design and character of the Pedestrian Retail District as a gathering place for local residents as well as a regional retail destination.

Policy 20.1. – Strengthen the identity of the Pedestrian Retail District as a pedestrian-oriented shopping destination for local residents and regional shoppers.

Action 20.1.2. Develop a comprehensive "park once and walk" program aimed at encouraging people to park their cars in public garages at the periphery of the downtown.

Action 20.1.3. Conduct studies to evaluate the free downtown shuttle and ways to enhance its service. Conduct studies to explore ways to enhance existing pedestrian connections and corridors with new signage, graphics, landscaping, and lighting.

Chapter 5, *Transportation*, of the Walnut Creek General Plan contains the following goals, policies and action statements related to transportation and parking.

GOAL 3. Maintain a transportation network that provides mobility for all ages and abilities and for all areas of the community.

Policy 3.1. – Maintain the level of service standards for roadways shown in Figure 2 [of the Walnut Creek General Plan] for the City's transportation network.

GOAL 6. Provide a safe and attractive walking environment accessible to all.

Policy 6.1. – Provide safe and attractive pedestrian routes along arterials and collectors leading to schools, along arterials or collectors that carry high traffic volumes, on all downtown streets, along major streets leading to the downtown, and on all streets leading to transit facilities.

Policy 6.2. – Require full-frontage curb and sidewalk improvements in all commercial areas.

Policy 6.4. – Facilitate use of public sidewalks and walkways throughout the city.

GOAL 7. Increase transit ridership and service to employment, schools, shopping, and recreation.

Policy 7.3. – Link high-density residential developments, schools, employment centers, and shopping areas via transit.

Policy 7.5. – Develop a comprehensive plan with CCCTA to install public transit amenities such as benches, passenger shelters, and walkways.

Action 7.5.4. Require, where appropriate, that new developments provide transit amenities as a condition of Project approval.

Goal 8. Serve as a model for other cities by providing a comprehensive TDM program that strives to decrease the use of the automobile and reduce peak-period traffic congestion.

Policy 8.2. **–** Seek new and innovative methods and programs that address peak-period congestion.

Policy 8.3. **–** Manage employee parking supply and demand in all commercial areas.

Policy 8.5. **–** Link high-density residential developments, employment centers, and shopping areas via transit, bikeways, and walkways.

GOAL 9. Provide a pedestrian-friendly downtown.

GOAL 12. Provide convenient and adequate parking.

GOAL 13. Provide convenient and adequate loading facilities in the Core Area.

4.13.4 Impacts and Mitigation Measures

Significance Criteria

In accordance with CEQA, the effects of a project are evaluated to determine whether they will result in a significant adverse impact on the environment. For the purposes of this EIR, an impact is considered significant if the Project would have the effects described below. The significance criteria applied for the analysis is consistent with that established by the Transportation Partnership and Cooperation Committee (TRANSPAC), the regional transportation planning committee for Central Contra Costa County, the City of Walnut Creek, and Caltrans. These criteria were also used for other transportation analyses conducted for projects in Walnut Creek.

The Project would result in a significant transportation impact if it would:

1. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highway and freeways, pedestrian and bicycle paths, and mass transit. The following criteria are derived from the City of Walnut Creek *General Plan* (2006), standard City thresholds, and Caltrans' *Guide for the Preparation of Traffic Impact Studies* (2002). A significant impact occurs when project-generated traffic would cause:

    a. An intersection[4] on a Local street outside the Core Area and not on a regional route to degrade to worse than LOS B (v/c 0.60 to 0.69); or

    b. An intersection on a Collector outside the Core Area and not on a regional route to degrade to worse than LOS low D (v/c 0.80 to 0.84); or

[4] "Intersection" in this section refers to a signalized intersection. The City of Walnut Creek does not have significance criteria for unsignalized intersections.

c. An intersection on an Arterial outside the Core Area and not on a regional route to degrade to worse than LOS high D (v/c 0.85 to 0.89); or

d. The delay index on a regional corridor, including Ygnacio Valley Road, to degrade to worse than 2.0; or

e. The peak hour average speed on a regional corridor, including Ygnacio Valley Road, to drop below 15 mph; or

f. A Core Area roadway and intersection, bounded by I-680, South Pacific Right-of-Way and Walden Road, to degrade to worse than LOS low E (v/c 0.90 to 0.94).

g. The v/c ratio to increase by 0.05 or more at an intersection, where the operation is already below acceptable level of service as described above.[5]

The signal phasing and timing controlling the following analysis intersections: Boulevard Way/Mount Diablo Boulevard, I-680 southbound off-ramp/Olympic Boulevard, I-680 northbound ramps/Olympic Boulevard, and South Main Street/I-680 southbound off-ramp, was designed and constructed to operate as part of the City's signal system, though it is also within the jurisdiction of the State of California and/or Contra Costa County. A series of agreements between and amongst the City, the State, and the County provide for the City's operation and maintenance of these intersections, which simplifies coordination with other signals within the City's jurisdiction. As a result, the City includes these intersections in its transportation planning, and the City Council has adopted, through the City of Walnut Creek General Plan, a measure of effectiveness for the performance of such intersections, as well as standard City thresholds for gauging traffic fluctuations. Accordingly, the City's criteria, not those of any other agency, represent the applicable criteria of significance here. For information purpose only, analysis results of these intersections using methodology required by Caltrans are provided in this study.

Caltrans' criteria would apply to the following ramp intersections: Danville Boulevard/Rudgear Road and South Broadway/Rudgear Road, in addition to freeway mainline segments and ramps. Based on Caltrans' *Guide for the Preparation of Traffic Impact Studies*, an impact is considered significant when Project-generated traffic would cause:

- A study location under Caltrans jurisdiction to degrade to worse than LOS D, or
- A study location under Caltrans jurisdiction operating at LOS E under Baseline (No Project) conditions to degrade to LOS F.

In proximity of the Project Site and surroundings, Ygnacio Valley Road is classified as a *Route of Regional Significance*.

Arterials include the following:

- Civic Drive
- North Broadway and South Broadway
- North California Boulevard and South California Boulevard

5 Due to normal fluctuation in daily traffic counts and motorist's perception of traffic conditions, a change in v/c of less than 0.05 was considered to be imperceptible. This approach is consistent with current City practice.

- Olympic Boulevard (west of South California Boulevard)
- Mount Diablo Boulevard (east of I-680)
- South Main Street (south of Newell Avenue)
- Newell Avenue (between South California Boulevard and Broadway)
- Rudgear Road

Collectors include the following:

- North Main Street and South Main Street (between Ygnacio Valley Road and Newell Avenue)
- Newell Avenue (east of South Broadway)
- Mount Diablo Boulevard (west of I-680)

2. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the Contra Costa Transportation Authority for designated roads or highways. The Central County Action Plan (CCTA, 2009b) identifies a significant impact as occurring when project-generated traffic would cause:

   h. The delay index on I-680 to exceed 4.0

   The Contra Costa Congestion Management Program (CCTA, 2011a) identifies a significant impact as occurring when project-generated traffic would cause:

   i. The level of service on SR 24 segment between Oak Hill Road and I-680 to fall below LOS E in the westbound direction

3. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

5. Result in inadequate emergency access.

6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

Approach to Analysis

Impacts by Project Scenario

For purposes of the analysis, the following includes a detailed evaluation of the Project under two scenarios: 1) a Maximum Commercial Scenario that includes a maximum net increase of 300,000 gross square feet of commercial uses; and a 2) Maximum Mixed-Use Scenario, which includes a mixed-use development comprised of net increase of 200,000 gross square feet of commercial use and 200,000 gross square feet of residential use to accommodate up to 200 housing units. Because the Project would include two distinct types of development based on varying types of uses and intensities and importantly, generate a different amount of traffic, the following discussion includes an evaluation of each project scenario on an individual basis, and identifies the potential effects on key intersections, freeway segments along I-680, pedestrian, bicycle, and transit facilities as well as emergency access, and traffic safety under baseline and future (cumulative)

conditions. Mitigation measures necessary to reduce significant impacts to less-than-significant levels were also identified.

Project Trip Generation

The Project trip generation was calculated based on data from the Institute of Transportation Engineers' (ITE) *Trip Generation*, 8th edition (ITE, 2008), using the Shopping Center land use category (820), and a method recommended for commercial trip generation in downtown Walnut Creek, which takes into account the characteristics of this area (Dowling Associates, 2008). The walkable scale of the Pedestrian Retail District creates a unique shopping experience and allows the downtown retail commercial area to function as one large shopping center with high levels of pedestrian activity. In determining the trip generation for all commercial projects in the downtown area, the Shopping Center trip generation rates for one million square feet of gross floor area were used (Dowling Associates, 2008). The rates were calculated using the regression equation provided in ITE's Trip Generation report. The number of Project trips was then calculated for the net increase in square footage using the derived rates.

Trip generation for residential land use was based on ITE's Apartment land use category (220). Adjustments were made to account for internal trips between the commercial and residential land uses within the project site. The internal trip adjustment was performed using procedures recommended in ITE's *Trip Generation Handbook* (ITE, 2004) for multi-use developments.

The trip generation for the Project, under both scenarios, is shown in **Table 4.13-9**. Under the Maximum Commercial Scenario, the Project would generate 9,100 daily trips, including 180 a.m. peak hour trips and 893 p.m. peak hour trips. Under the Maximum Mixed-Use Scenario, the

TABLE 4.13-9
PROJECT TRIP GENERATION

Trip Generation Land Use Category	Amount	Source	Trips Generated						
				AM Peak Hour			PM Peak Hour		
			Weekday	In	Out	Total	In	Out	Total
Maximum Commercial Scenario									
Commercial (Shopping Center)	300 ksf	ITE (820)	**9,100**	110	70	180	**437**	**455**	**893**
Maximum Mixed Use Scenario									
Commercial (Shopping Center)	200 ksf	ITE (820)	6,067	73	47	120	292	304	596
Multi-Family Residential	200 du	ITE (220)	1,330	20	82	102	83	45	128
Total Project Trips			7,397	93	129	222	375	349	724
Internal Trips			-1,889	-7	-7	-14	-38	-38	-76
New External Trips			5,508	**86**	**122**	**208**	337	311	648

SOURCES: Kittelson/Dowling Associates, Inc., 2012; ITE, 2008.

Project would generate 5,508 daily trips, including 208 a.m. peak hour trips and 647 p.m. peak hour trips. This trip generation estimate does not include any adjustment for mode choice despite high walkability and the availability of transit and particularly the free shuttle that serves the area.

Project Trip Distribution and Assignment

The distribution of project-generated trips was derived from the CCTA Model and knowledge of the proposed access locations associated with the Project. The CCTA Model zone of the Broadway Plaza project site was isolated, and the peak-hour trips for the two general land use types: 1) residential and 2) commercial, were assigned to the network. From this "selected zone" assignment, the peak-hour distributions of Project trips to 18 gateways were estimated. The Project trip distribution percentages are summarized in **Table 4.13-10**. The Project trips were assigned to the surrounding roadways based on existing travel patterns in the area and the shortest distance to the gateways.

The traffic generated by the Project under the Maximum Commercial Scenario at each study intersection is shown graphically in **Figures 4.13-2a** and **4.13-2b**, and traffic generated by the Project under the Maximum Mixed-Use Scenario at each study intersections is shown graphically in **Figures 4.13-3a** and **4.13-3b**.

TABLE 4.13-10
PROJECT TRIP DISTRIBUTION PERCENTAGES

	Commercial (%)	Residential (%)
Ygnacio Valley Road East	6	5
Civic Drive North	6	9
California Boulevard/Main Street North	9	19
Ygnacio Valley Road West	3	2
SR 24/Camino Diablo	15	12
Olympic Boulevard West	4	1
Newell Avenue West	5	4
San Miguel Boulevard East	6	2
Danville Boulevard South	3	2
Rudgear Road East	2	1
I-680 South via Rudgear Road	2	1
Trinity Avenue West	1	0
I-680 North via Olympic Boulevard	7	10
Boulevard Way South	1	0
Mt Diablo Boulevard East	7	2
Broadway North	5	8
I-680 South via Main Street	17	19
I-680 South via Olympic Boulevard	1	3
	100%	**100%**

SOURCE: Kittelson/Dowling Associates, Inc., 2012

Analysis Scenarios

Six analysis scenarios were analyzed to determine the extent to which the Project, under both scenarios, may affect the surrounding transportation environment during both weekday morning and evening peak hours. These scenarios are summarized below:

- ***Baseline*** – Existing conditions plus any completed projects between counts and May 2012.
- ***Baseline Plus Project*** – Baseline conditions plus projected traffic generated by the Project (under both scenarios).
- ***Near Term Cumulative Development*** – Future conditions in which traffic generated by all developments that are pending or have been approved by the City, but have not yet been built, is added to the Baseline conditions.
- ***Near Term Cumulative Plus Project –*** Near Term Cumulative conditions with the addition of traffic generated by the Project (under both scenarios).
- ***Cumulative (2030)*** – Future conditions including projected population and employment growth as well as planned transportation system improvements contained in the latest CCTA travel demand model for Year 2030.
- ***Cumulative (2030) Plus Project*** – Year 2030 conditions with the addition of traffic generated by the Project (under both scenarios).

A complete description of each impact analysis scenario is discussed below.

Baseline Year Development

The approaches to establish land use, roadway network, and forecasted traffic volumes for the Baseline conditions are described below.

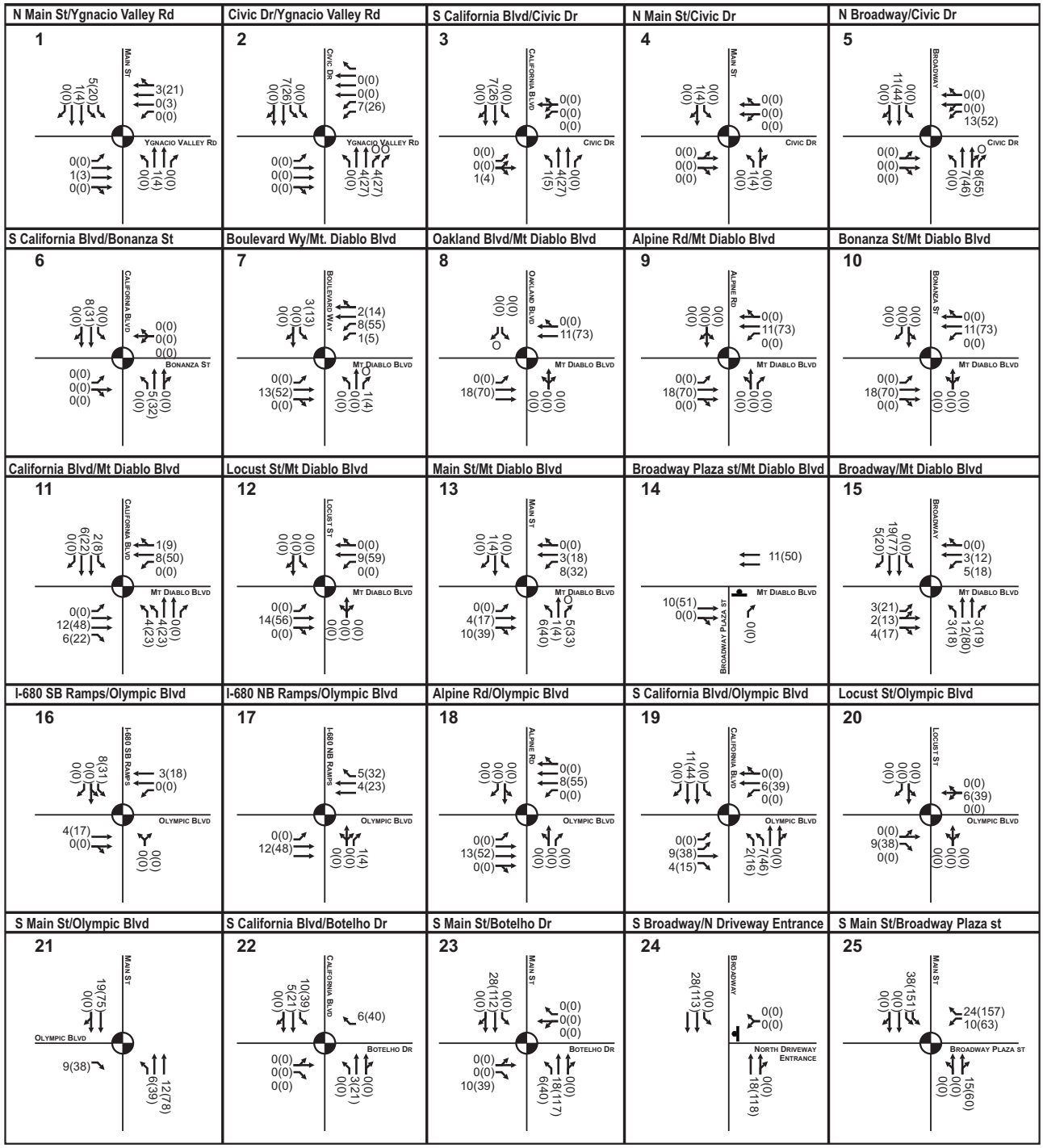
Land Use Data

Five developments have been completed prior to consideration of Project approval and are included in the Baseline conditions. The baseline projects are summarized below and are shown graphically in **Figure 4.13-4**.

1. Walden Park Commons – 55 new dwelling units
2. Nordstrom Remodel/Expansion – 18 ksf of new commercial[6]
3. Neiman Marcus – 50 ksf of new commercial
4. Dirito Brothers Volkswagen – 30 ksf of new full service auto dealer
5. John Muir Medical Center Master Plan Phase 4 – 443 ksf new hospital

Land use data for the above-mentioned baseline projects were compiled by Kimley-Horn and Associates and verified by City staff. Peak hour trip generation, distribution and assignment patterns of the baseline projects were obtained from available studies or estimated based on land use and size of the projects and travel patterns consistent with those in the CCTA's Travel Demand Model.

6 ksf = thousand square feet.

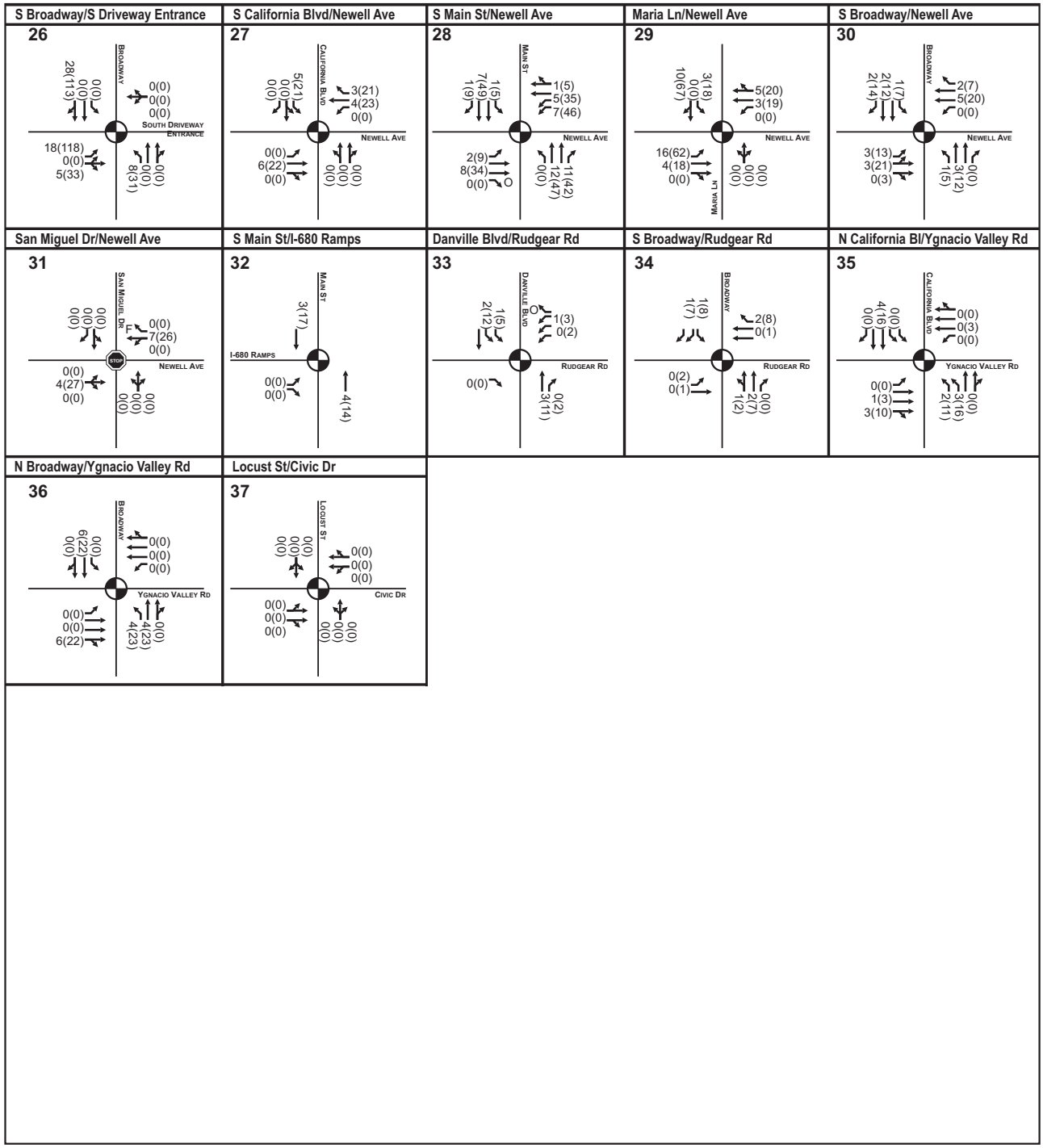


SOURCE: Dowling Associates, Inc.

Broadway Plaza Long Range Master Plan EIR . 211723

Figure 4.13-2a

Project Geometry and Peak Hour Volumes AM (PM) - Maximum Commercial Scenario

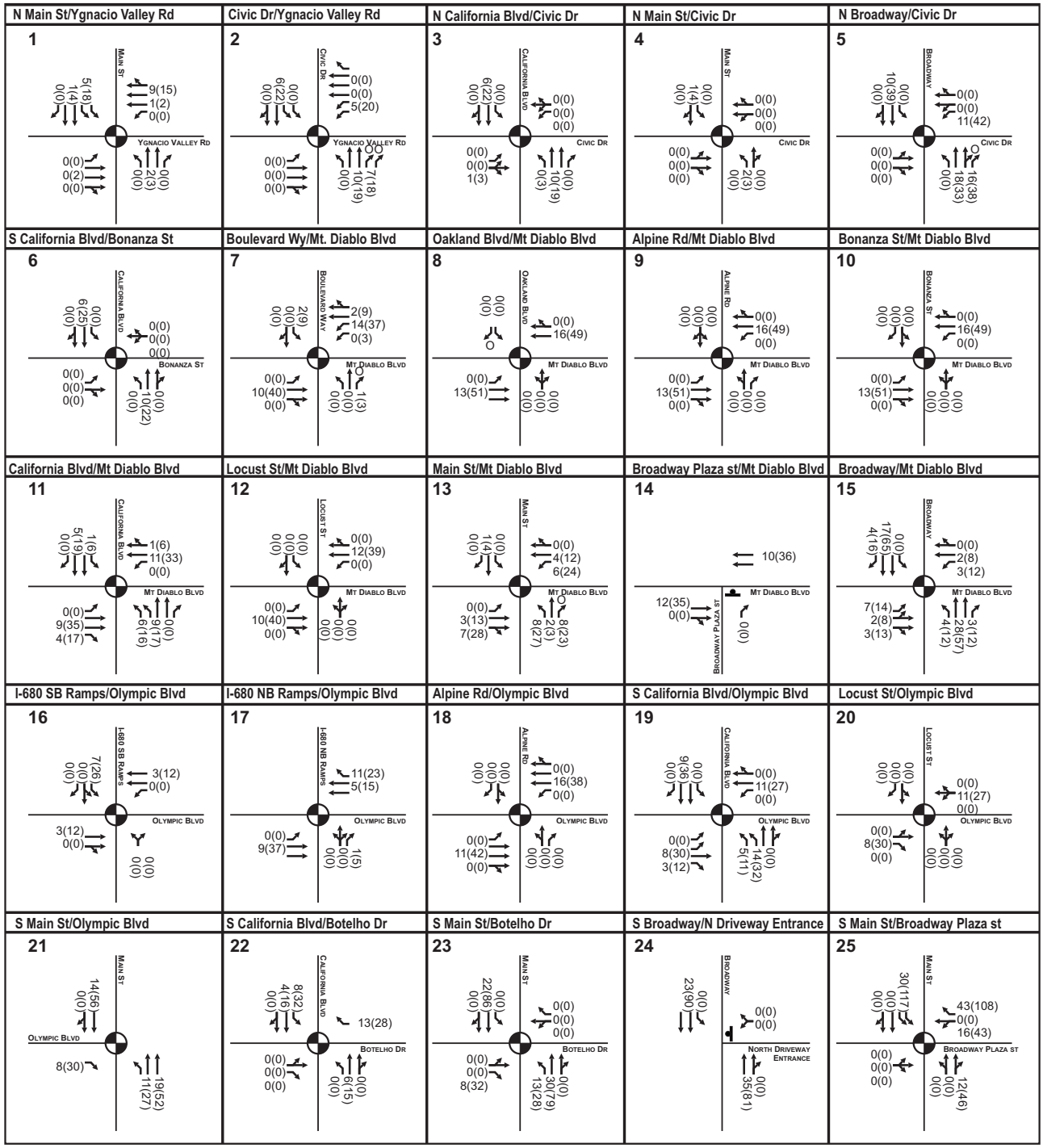


SOURCE: Dowling Associates, Inc.

Broadway Plaza Long Range Master Plan EIR . 211723

Figure 4.13-2b

Project Geometry and Peak Hour Volumes AM (PM) - Maximum Commercial Scenario

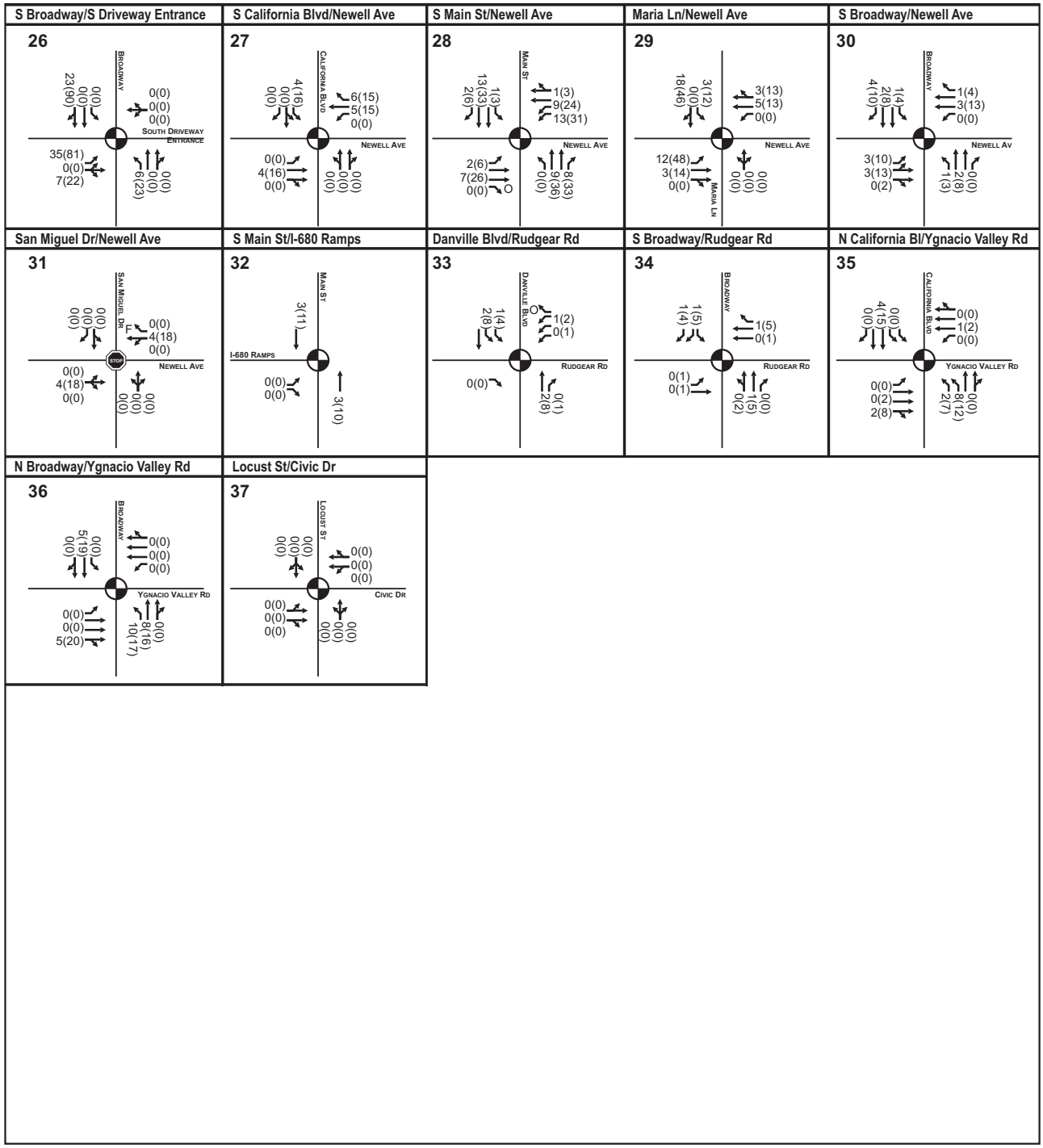


SOURCE: Dowling Associates, Inc.

Broadway Plaza Long Range Master Plan EIR . 211723

Figure 4.13-3a

Project Geometry and Peak Hour Volumes AM (PM) - Maximum Mixed-Use Scenario

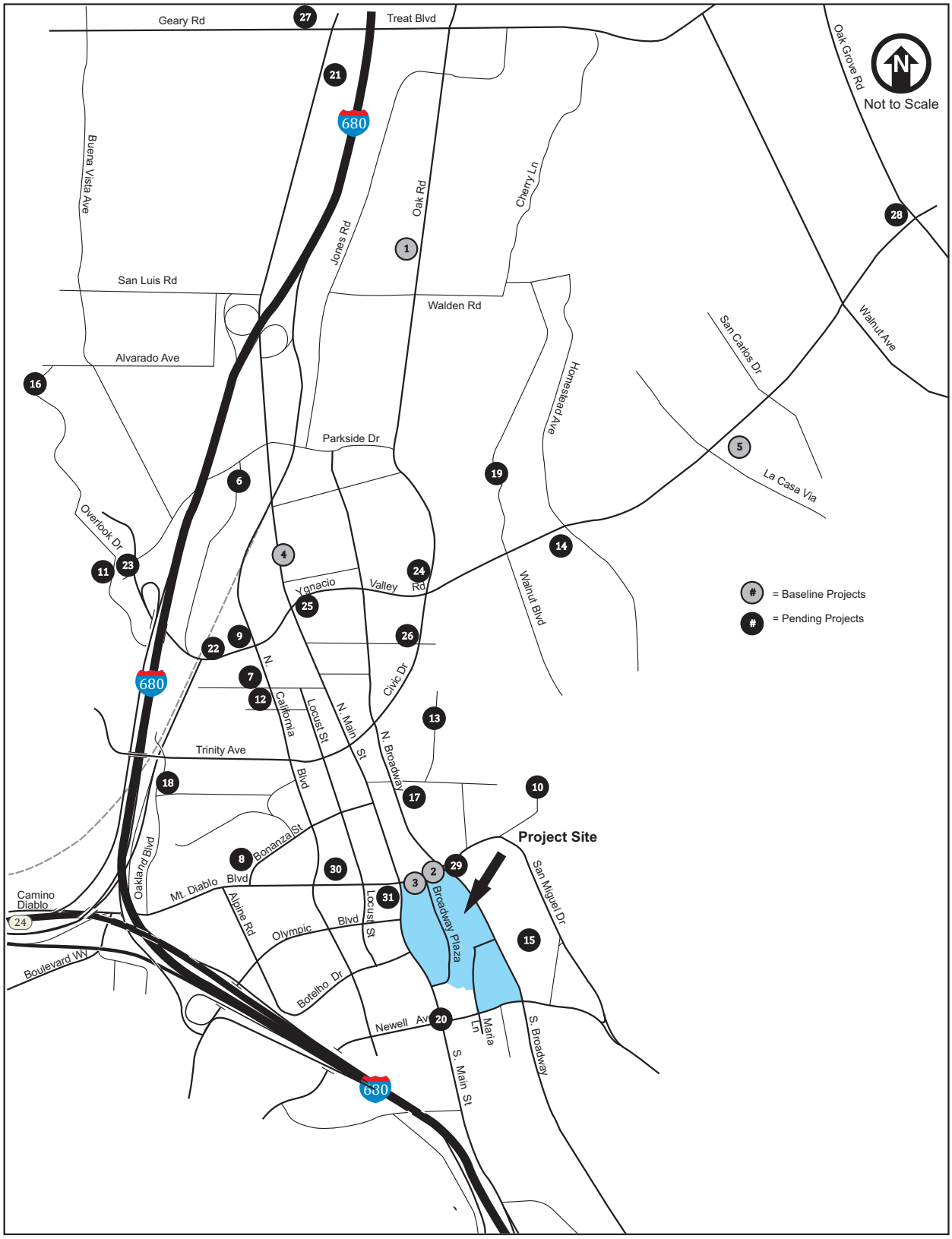


SOURCE: Dowling Associates, Inc.

Broadway Plaza Long Range Master Plan EIR . 211723

Figure 4.13-3b

Project Geometry and Peak Hour Volumes AM (PM) - Maximum Mixed-Use Scenario



SOURCE: Dowling Associates, Inc.

Broadway Plaza Long Range Master Plan EIR . 211723

Figure 4.13-4
Baseline and Pending Projects

Baseline Transportation Improvements

Planned and programmed roadway improvements were incorporated into the Baseline conditions. These improvements are summarized below:

- ***South California Boulevard / Newell Avenue Intersection*** – The City of Walnut Creek *2010-2012 City Capital Investment Program* (City of Walnut Creek, 2010) includes, and the City has completed, the installation of a protected left-turn phasing on the Newell Avenue approaches.

- ***South Broadway / Broadway Plaza Parking Garage North Access*** – The Neiman Marcus Project has modified the driveway configuration to prohibit eastbound left-turn movement from the driveway access.

- ***South Broadway / Broadway Plaza Parking Garage South Access*** – The Neiman Marcus Project has installed a traffic signal at this intersection.

- ***South Broadway / Newell Avenue Intersection*** – The Neiman Marcus Project would modify the southbound approach to eliminate one left-turn lane and restripe to add an exclusive right-turn lane at the intersection.

As stated in Section 4.13.3, *Regulatory Setting*, there are no roadway improvements in proximity to the Project identified in the CCTA's *Central Contra Costa County Updated Action Plan for Routes of Regional Significance*; however, the Action Plan includes a freeway improvement project scheduled to be completed by Year 2012. Therefore, the following improvement project was incorporated into the baseline conditions:

- ***I-680 Southbound Carpool Lane Extension*** – a project funded by Measure J (half-percent countywide sales tax for transportation) to restripe the median and extend the carpool lane along I-680 in the southbound direction northward from Livorna Road to 0.9 mile north of Livorna Road.

Baseline Traffic Volumes

Traffic volumes for the Baseline conditions were developed using an additive approach. Estimated traffic generated by the five baseline projects was added to existing volumes on the roadway network to develop the volumes for the Baseline conditions. The projected a.m. and p.m. peak hour traffic volumes for Baseline conditions and volumes with Project (under both scenarios) are shown in figures in the transportation impact analysis report (Appendix G).

Near Term Cumulative

Kimley-Horn Associates compiled a list of 26 projects that are pending or have been approved by the City but are not anticipated to be completed by May 2012 and estimated their trip making characteristics. The exceptions are the Walnut Creek BART Transit Village project and the Shadelands Gateway project, for which the trip data were estimated by Kittelson/Dowling Associates based on available information. These pending projects are summarized below and locations are shown graphically in Figure 4.13-4.

Similar to the above-mentioned Baseline condition, traffic volumes for the Near Term Cumulative conditions were developed using an additive approach. Estimated traffic generated by the 26 pending projects was added to the baseline volumes to develop the volumes for the Near Term Cumulative conditions. In addition to the roadway improvements identified under Baseline conditions, a minor modification to provide concurrent phasing on the east-west approach at the South California Boulevard and Olympic Boulevard intersection was assumed for Near Term Cumulative conditions.

#	Pending Project	Development
6.	E'Ian	38 dwelling units
7.	Villagewalk Condos	11 dwelling units
8.	Bonanza Heritage Condos	13 dwelling units
9.	235 Ygnacio	10 dwelling units
10.	Walker-Sierra Townhomes	4 dwelling units
11.	Overlook Homes	8 dwelling units
12.	Cole Terrace Condos	11 dwelling units
13.	Parkview Condos	7 dwelling units
14.	Homestead Terrace Homes	8 dwelling units
15.	Holcomb Court Condos	2 dwelling units
16.	Overlook Townhomes	6 dwelling units
17.	Lincoln Avenue Triplex	2 dwelling units
18.	Almond Lofts	9 dwelling units
19.	Howard Oaks Subdivision	3 dwelling units
20.	The Village	38,000 square feet (sq.ft.) commercial / 49 new dwelling units
21.	24-Hour Fitness	47,000 sq.ft for facilities
22.	Walnut Creek BART Transit Village	30,000 sq.ft commercial / 596 new dwelling units
23.	Pleasant Creek Homes	10 dwelling units
24.	Paragon Apartments	300 dwelling units
25.	North Main Apartments	126 dwelling units
26.	Arroyo Apartments	107 dwelling units
27.	Co-Op Site Commercial	35,000 sq.ft commercial
28.	Shadelands Gateway	246,000 sq.ft commercial
29.	Safeway Remodel	25,000 sq.ft supermarket
30.	Locust St/Mt Diablo Specific Plan	97,300 sq.ft office / 119,000 sq.ft commercial / 46 dwelling units
31.	Block C	New office, commercial, restaurants

The projected a.m. and p.m. peak hour traffic volumes for Near Term Cumulative conditions (No Project) and volumes with Project (under both scenarios) are shown in figures in the transportation impact analysis report (Appendix G).

Cumulative Year Development

The CCTA Model was used to develop future volume forecast for Cumulative conditions. The model includes future development throughout the region. The 2030 cumulative forecasts are consistent with regional totals for growth projected by the Association of Bay Area Governments (ABAG) in their Projections 2005 report (which was the basis for the latest available CCTA

Model). Therefore, the traffic forecasts reflect traffic from growth in Walnut Creek, as well as traffic in the region that may use the local roadways.

Pending Projects not included in the model were added to the model land use for analysis consistency. The CCTA Model was also reviewed to confirm that future regional roadway improvements, such as the completion of the HOV lane gap closure on I-680 Southbound between North Main Street and Livorna Road, are included as part of the future 2030 conditions. A dedicated southbound right-turn lane at the intersection of North California Boulevard and Civic Drive, which is identified as a mitigation measure in the City of Walnut Creek General Plan EIR, was incorporated under the Cumulative conditions.

Model base year (Year 2000) and future year (Year 2030) forecasts were extracted from the model and used to estimate growth. The full 30-year growth projected by the model was applied to the 2010/2011 counts to arrive at the adjusted forecasted volumes for Cumulative conditions. The 30-year growth, rather than a 20-year growth to reflect the 20 year period between the count data and the future horizon year, was used because a comparison of 2000 and 2010 count data indicated little or even negative growth during the ten-year period due to the economic downturn. The analysis took a conservative approach in projecting the economy would catch up over the next 20 year period and the full 30-year growth would be fully achieved by Year 2030.

The projected a.m. and p.m. peak hour traffic volumes for Cumulative conditions (No Project) and volumes with Project (under both scenarios) are shown in figure in the transportation impact analysis report (Appendix G).

Cumulative Transportation Improvements

In addition to roadway improvements that are planned to be constructed and operational by Year 2012, the following improvement project is scheduled to be completed by Year 2018 according to the Action Plan. Because the improvement project would be completed by Year 2018, the improvement project was incorporated into Cumulative conditions.

- ***I-680 Southbound Carpool Lane Gap Closure*** – a project funded by Measure J to close the high-occupancy vehicle (HOV) lane gap along I-680 between North Main Street and Livorna Road in the southbound direction, and extend the HOV lane between North Main Street and SR 242 in the northbound direction.

Topics Briefly Addressed

Due to the nature of the Project, there would be no impacts related to the following criteria; therefore, no impact discussion is provided for these topics for the reasons described below:

- ***Results in a change in air traffic patterns, including either an increase in traffic levels or a change in locations that result in substantial safety risks***. The Project would have no impact on air traffic patterns as it would not introduce new air traffic or interfere with existing air traffic; the nearest public airport is Buchanan Field Airport, located about six miles north of the Project. The Project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, which would result in

substantial safety risks. This impact category, listed in the significance criterion 3, above as an impact topic to consider in a CEQA evaluation, is therefore not further examined.

Baseline plus Project Conditions

Measures of Effectiveness for the Performance of Intersections

The Project, under both scenarios, would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of study intersections under Baseline plus Project conditions (Criteria 1 and 2). (Less than Significant)

The level of service results for Baseline and Baseline plus Project conditions are summarized in **Table 4.13-11**. The results indicate that all study intersections would operate within acceptable LOS standards under Baseline conditions, with the exception of the I-680 Northbound Ramps / Olympic Boulevard intersection, which would operate at LOS F during the p.m. peak hour. Under Baseline plus Project conditions, all study intersections would continue to operate within acceptable levels under both Maximum Commercial Scenario and Maximum Mixed-Use Scenario, except the I-680 Northbound Ramps / Olympic Boulevard intersection, which would continue to operate at LOS F during the p.m. peak hour with the addition of Project traffic. While the intersection would continue to operate at unacceptable conditions, Project-related traffic would cause the v/c ratio to increase by less than 0.05 under both scenarios; therefore would not result in a significant impact to the intersection. As such, the Project impact to study intersections under both scenarios is considered less than significant. LOS calculation sheets are provided in the transportation impact analysis report (Appendix G).

Mitigation: None required.

TABLE 4.13-11
INTERSECTION LEVEL OF SERVICE (LOS) – BASELINE AND BASELINE PLUS PROJECT CONDITIONS

				Baseline No Project			Baseline plus Project Max Commercial Scenario				Baseline plus Project Max Mixed-Use Scenario			
	Intersection	Traffic Control	Peak Hour	LOS[a]	V/C[b]	Delay	LOS[a]	V/C[b]	Delay	Change	LOS[a]	V/C[b]	Delay	Change
1	N. Main St/ Ygnacio Valley Rd			Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-13										
2	Civic Dr/Ygnacio Valley Rd			Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-13										
3	Civic Dr/N. California Blvd	Signal	AM	A	0.48		A	0.48		0.00	A	0.48		0.00
			PM	A	0.60		B	0.61		0.01	B	0.61		0.01
4	N. Main St/Civic Dr	Signal	AM	A	0.45		A	0.45		0.00	A	0.45		0.00
			PM	B	0.67		B	0.68		0.01	B	0.68		0.01
5	N. Broadway/Civic Dr	Signal	AM	A	0.43		A	0.43		0.00	A	0.43		0.00
			PM	B	0.68		C	0.71		0.03	C	0.70		0.02
6	N. California Blvd/ Bonanza St	Signal	AM	A	0.5		A	0.50		0.00	A	0.50		0.00
			PM	B	0.64		B	0.65		0.01	B	0.65		0.01
7	Boulevard Wy/ Mt. Diablo Blvd[c,f]	Signal	AM	A(B)	0.52	17.6	A(B)	0.52	17.7	0 (0.1)	A(B)	0.52	17.6	0(0)
			PM	A(C)	0.50	21.8	A(C)	0.53	21.5	0.03(-0.3)	A(C)	0.52	21.6	0.02(-0.2)
8	Oakland Blvd/ Mt. Diablo Blvd	Signal	AM	A	0.48		A	0.48		0.00	A	0.48		0.00
			PM	A	0.52		A	0.54		0.02	A	0.54		0.02
9	Alpine Rd/Mt. Diablo Blvd	Signal	AM	A	0.47		A	0.48		0.01	A	0.48		0.01
			PM	B	0.69		C	0.71		0.02	C	0.7		0.01
10	Bonanza St/ Mt. Diablo Blvd	Signal	AM	A	0.37		A	0.37		0.00	A	0.37		0.00
			PM	A	0.43		A	0.45		0.02	A	0.44		0.01
11	California Blvd/ Mt. Diablo Blvd	Signal	AM	A	0.41		A	0.41		0.00	A	0.41		0.00
			PM	B	0.68		C	0.71		0.03	B	0.7		0.02
12	Locust St/Mt. Diablo Blvd	Signal	AM	A	0.3		A	0.31		0.01	A	0.31		0.01
			PM	A	0.43		A	0.45		0.02	A	0.44		0.01
13	Main St/Mt. Diablo Blvd	Signal	AM	A	0.41		A	0.42		0.01	A	0.42		0.01
			PM	A	0.58		B	0.66		0.08	B	0.64		0.06
14	Broadway Plaza st/ Mt. Diablo Blvd[d,e]	One-Way Stop	AM	A		0.1	A		0.1	0.0	A		0.1	0.0
			PM	A		0.2	A		0.2	0.0	A		0.2	0.0
15	Broadway/Mt. Diablo Blvd	Signal	AM	A	0.58		A	0.59		0.01	A	0.59		0.01
			PM	C	0.78		D	0.82		0.04	D	0.81		0.03
16	I-680 SB off ramp/ Olympic Blvd[c,f]	Signal	AM	A(C)	0.54	24.2	A(C)	0.55	24.4	0.01(0.2)	A(C)	0.55	24.4	0.01(0.2)
			PM	B(C)	0.61	25.6	B(C)	0.62	26.0	0..01(0.4)	B(C)	0.62	26.0	0.01(0.4)

TABLE 4.13-11 (Continued)
INTERSECTION LEVEL OF SERVICE (LOS) – BASELINE AND BASELINE PLUS PROJECT CONDITIONS

				Baseline No Project			Baseline plus Project Max Commercial Scenario				Baseline plus Project Max Mixed-Use Scenario			
	Intersection	Traffic Control	Peak Hour	LOS[a]	V/C[b]	Delay	LOS[a]	V/C[b]	Delay	Change	LOS[a]	V/C[b]	Delay	Change
17	I-680 NB ramps/ Olympic Blvd[c,f]	Signal	AM	D(C)	0.86	26.1	D(C)	0.87	26.5	0.01(0.4)	D(C)	0.87	27.2	0.01(1.1)
			PM	F(E)	1.24	70.7	F(E)	1.27	79.0	0.03(8.3)	F(E)	1.26	76.4	0.02(5.7)
18	Alpine Rd/Olympic Blvd	Signal	AM	A	0.45		A	0.45		0.00	A	0.45		0.00
			PM	A	0.54		A	0.55		0.01	A	0.55		0.01
19	S. California Blvd/ Olympic Blvd	Signal	AM	A	0.41		A	0.41		0.00	A	0.41		0.00
			PM	A	0.55		B	0.61		0.06	A	0.59		0.04
20	Locust St/Olympic Blvd	Signal	AM	A	0.14		A	0.16		0.02	A	0.15		0.01
			PM	A	0.31		A	0.34		0.03	A	0.33		0.02
21	S. Main St/Olympic Blvd	Signal	AM	A	0.17		A	0.19		0.02	A	0.20		0.03
			PM	A	0.36		A	0.43		0.07	A	0.41		0.05
22	S. California Blvd/ Botelho Dr	Signal	AM	A	0.33		A	0.33		0.00	A	0.33		0.00
			PM	A	0.56		B	0.62		0.06	B	0.61		0.05
23	S. Main St/Botelho Dr	Signal	AM	A	0.16		A	0.17		0.01	A	0.18		0.02
			PM	A	0.4		A	0.45		0.05	A	0.43		0.03
24	S. Broadway/North Driveway Entrance[d,e]	One/Two-Way Stop	AM	A		0.5	A		0.4	-0.1	A		0.4	-0.1
			PM	A		1.0	A		0.4	-0.6	A		0.4	-0.6
25	S. Main St/Broadway Plaza access	Signal	AM	A	0.18		A	0.20		0.02	A	0.20		0.02
			PM	A	0.27		A	0.37		0.10	A	0.34		0.07
26	S. Broadway/South Driveway Entrance	Signal	AM	A	0.28		A	0.31		0.03	A	0.32		0.04
			PM	A	0.49		B	0.69		0.20	B	0.66		0.17
27	S. California Blvd/ Newell Ave	Signal	AM	A	0.48		A	0.48		0.00	A	0.49		0.01
			PM	A	0.57		A	0.59		0.02	A	0.58		0.01
28	S. Main St/Newell Ave	Signal	AM	A	0.56		A	0.57		0.01	A	0.58		0.02
			PM	A	0.52		A	0.57		0.05	A	0.56		0.04
29	Maria Ln/Newell Ave	Signal	AM	A	0.38		A	0.38		0.00	A	0.38		0.00
			PM	A	0.46		A	0.48		0.02	A	0.48		0.02
30	S. Broadway/Newell Ave	Signal	AM	A	0.47		A	0.47		0.00	A	0.47		0.00
			PM	A	0.53		A	0.55		0.02	A	0.54		0.01
31	San Miguel Dr/ Newell Ave[c,d,e]	All-Way Stop	AM	B		12.5	B		12.8	0.3	B		12.7	0.2
			PM	B		12.0	B		13.0	1.0	B		12.7	0.7
32	S. Main St/ I-680 SB off ramp[c,f]	Signal	AM	B(B)	0.61	10.9	B(B)	0.61	11.0	0.00(0.1)	B(B)	0.61	11.0	0.00(0.1)
			PM	C(B)	0.75	19.9	C(C)	0.76	21.1	0.01(1.2)	C(C)	0.76	20.7	0.01(0.8)

TABLE 4.13-11 (Continued)
INTERSECTION LEVEL OF SERVICE (LOS) – BASELINE AND BASELINE PLUS PROJECT CONDITIONS

				Baseline No Project			Baseline plus Project Max Commercial Scenario				Baseline plus Project Max Mixed-Use Scenario			
	Intersection	Traffic Control	Peak Hour	LOS[a]	V/C[b]	Delay	LOS[a]	V/C[b]	Delay	Change	LOS[a]	V/C[b]	Delay	Change
33	Danville Blvd/ Rudgear Rd[c,d]	Signal	AM	C		21.4	C		21.4	0	C		21.4	0.0
			PM	C		28.6	C		29.5	0.9	C		29.0	0.4
34	S. Broadway/Rudgear Rd[c,d]	Signal	AM	D		42.8	D		42.8	0.0	D		42.8	0.0
			PM	C		29.1	C		29.5	0.4	C		29.3	0.2
35	Ygnacio Valley Rd/ N. California Blvd			Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-13										
36	Ygnacio Valley Rd/ N. Broadway			Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-13										
37	Civic Dr/Locust St	Signal	AM	A	0.20		A	0.20		0.00	A	0.20		0.00
			PM	A	0.36		A	0.36		0.00	A	0.36		0.00

[a] LOS = Level of Service; two LOS are shown for CCTALOS (HCM) methods, where applicable, e.g. B(A)

[b] V/C = Volume-to-Capacity ratio;

[c] Intersection is not located within Core Area as defined by City's General Plan

[d] Average vehicle delay in seconds are reported for 1) unsignalized intersections; and 2) ramp intersections.

[e] The City has no operation standard for unsignalized intersections. LOS for unsignalized intersections are provided for information purpose only.

[f] City criteria are used to determine project impacts at these ramp intersections. Average vehicle delay is provided for information purpose only.

SOURCE: Kittelson/Dowling Associates, Inc., 2012.

Measures of Effectiveness for the Performance of Freeway Segments & Ramps

The Project, under both scenarios, would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of study freeway segments and ramps under Baseline plus Project conditions (Criteria 1 and 2). (Less than Significant)

As stated, I-680, SR 24 and Ygnacio Valley Road are regional routes in the study area. As shown in **Table 4.13-12**, the I-680 and SR 24 freeway segments and ramps would operate within acceptable level of service during both peak hours under Baseline conditions. The Project, under both scenarios, would add trips onto the regional routes; however, the added trips would not worsen the operations to substandard levels. As a result, the Project impact to freeway segments and ramps is considered less than significant. LOS calculation sheets are provided in the transportation impact analysis report (Appendix G).

Mitigation: None required.

Measures of Effectiveness for the Performance of Routes of Regional Significance

The Project, under both scenarios, would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of routes of regional significance under Baseline plus Project conditions (Criteria 1 and 2). (Less than Significant)

The incremental increase in traffic associated with the Project under both Maximum Commercial and Maximum Mixed-Use scenarios results in an increase of less than 1.5 percent on I-680, which is within normal daily fluctuation in traffic volumes. The increased travel time due to such a small increase would be imperceptible and therefore, would not increase the delay index beyond the 4.0 threshold set by the Action Plan MTSO for I-680.

With the existing delay index less than 2.0, the Baseline condition is considered to likewise to be less than 2.0 because the increase in traffic on the I-680 and Ygnacio Valley Road from existing conditions to Baseline conditions would be imperceptible to the average motorist when compared to existing peak hour volumes. As shown in **Table 4.13-13**, Ygnacio Valley Road corridor would experience marginal increase with the addition of Project-related traffic on both the westbound and eastbound directions; however, the added traffic under Baseline plus Project conditions would not increase beyond the 2.0 threshold during both peak hours. In addition, the average speed on the Ygnacio Valley Road corridor would maintain well above the 15 mph threshold under Baseline plus Project conditions.

Therefore, Project impact under both scenarios is considered to be less than significant and no mitigation measures are required. Delay Index calculations are provided in the transportation impact analysis report (Appendix G).

TABLE 4.13-12
FREEWAY MAINLINE SEGMENT AND RAMP LEVEL OF SERVICE (LOS) – BASELINE AND BASELINE PLUS PROJECT CONDITIONS

Mainline Segments

			Baseline No Project				Baseline plus Project Max Commercial Scenario				Baseline plus Project Max Mixed-Use Scenario			
			AM		PM		AM		PM		AM		PM	
No	Location	Direction	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
1	I-680 North of N. Main St	NB	21.9	C	33.0	D	21.9	C	33.2	D	22.0	C	33.1	D
		SB	17.9	B	16.6	B	18.0	B	16.7	B	18.0	B	16.7	B
2	I-680 South of S. Main St	NB	25.8	C	21.9	C	25.9	C	22.2	C	25.9	C	22.2	C
		SB	20.9	C	22.3	C	21.0	C	22.6	C	21.0	C	22.6	C
3	I-680 South of Rudgear Rd	NB	36.3	E	34.1	D	36.5	E	34.8	D	36.4	E	34.7	D
		SB	25.1	C	27.2	D	25.1	C	27.8	D	25.2	C	27.6	D
4	I-680 South of Olympic Blvd	NB	26.8	D	23.1	C	26.9	D	23.4	C	26.9	D	23.3	C
		SB	19.5	C	20.3	C	19.5	C	20.4	C	19.5	C	20.4	C
5	SR 24 West of I-680	WB	30.2	D	21.1	C	30.2	D	21.3	C	30.3	D	21.2	C
		EB	19.4	C	28.9	D	19.5	C	29.2	D	19.5	C	29.1	D

Interstate 680 Ramps

			Baseline No Project				Baseline plus Project Max Commercial Scenario				Baseline plus Project Max Mixed-Use Scenario			
			AM		PM		AM		PM		AM		PM	
No	Location	Type	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
1	NB S. Main St Off-Ramp	Diverge	33.1	D	29.9	D	33.3	D	30.6	D	33.2	D	30.4	D
2	SB S. Main St On-Ramp	Merge	21.3	C	23.1	C	21.4	C	23.8	C	21.5	C	23.6	C
3	NB Olympic Blvd Off-Ramp	Diverge	34.4	D	32.6	D	34.4	D	32.9	D	34.4	D	32.8	D
4	SB Olympic Blvd Off-Ramp	Diverge	37.4	E	33.8	D	37.5	E	34.2	D	37.5	E	34.1	D
5	SB Olympic Blvd On-Ramp	Weave B	26.0	C	29.3	D	26.0	C	29.3	D	26.0	C	29.3	D
6	NB Olympic Blvd On-Ramp	Weave A	37.7	E	41.4	E	37.7	E	41.7	E	37.8	E	41.6	E

SOURCE: Kittelson/Dowling Associates, Inc., 2012

TABLE 4.13-13
DELAY INDEX – BASELINE CONDITONS

Roadway	Limits	AM Delay Index	PM Delay Index	AM Average Speed	PM Average Speed
Baseline (No Project)					
Ygnacio WB	Oak Grove to I-680	1.14	1.55	30	22
Ygnacio EB	I-680 to Oak Grove	1.30	1.23	23	24
Baseline plus Project Max Commercial Scenario					
Ygnacio WB	Oak Grove to I-680	1.14	1.56	29	22
Ygnacio EB	I-680 to Oak Grove	1.30	1.24	23	24
Baseline plus Project Max Mixed-Use Scenario					
Ygnacio WB	Oak Grove to I-680	1.15	1.56	29	22
Ygnacio EB	I-680 to Oak Grove	1.30	1.23	23	24

SOURCE: 2000 CCTA Model, Kittelson/Dowling Associates, Inc., 2012.

Mitigation: None required.

Impact TRA-1: The Project, under both scenarios, could substantially increase hazards due to a design feature or incompatible uses (Criterion 4). (Less than Significant with Mitigation)

With the exception of the proposed partial street vacation of Broadway Plaza street, the Project under both scenarios would not alter roadway geometries or provide new roadways design features. Because detailed design plans of the proposed cul-de-sacs on Broadway Plaza street are not available at the time of this analysis, the Project impact under both scenarios is potentially significant. Implementation of **Mitigation Measure TRA-1** would reduce potential impacts to traffic safety hazards to a less-than-significant level.

> **Mitigation Measure TRA-1:** Prior to issuance of any permit for the Project, the Project Applicant shall submit design plans that are consistent with applicable City standards.

Significance after Implementation of Mitigation Measure: Less than Significant.

The Project, under both scenarios, would not result in inadequate emergency access (Criterion 5). (Less than Significant)

The Project is subject to requirements of the California Fire Code, the Fire Protection District, and the Building Code regarding emergency vehicle access. The standards are detailed and specific, and cannot be applied until a specific development program is presented. In the absence of a specific development program, it is unknown how the Project Applicant proposes to meet to the governing regulations but such regulations must be met prior to the issuance of building

permits. Thus, prior to issuance of any such permit for the Project, the Project Applicant shall submit building construction plans to the Fire Protection District for review and approval to ensure compliance with minimum fire and safety requirements. The Project Applicant would be required to work with the District to provide an emergency apparatus access as required by applicable law and regulations. Compliance with regulatory requirements will ensure that the Project will not result in inadequate emergency access.

Mitigation: None required.

The Project, under both scenarios, would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities (Criterion 6). (Less than Significant)

Bicycle

As stated in Section 4.13.1, *Setting*, the City of Walnut Creek Bicycle Plan (City of Walnut Creek, 2011a) proposes a number of new bicycle facilities along roadways in the study area, including Class III bike routes on Newell Avenue directly adjacent to the Project Site. The Project, under both scenarios, would generate additional traffic on Newell Avenue and other roadways, thereby potentially increasing conflicts between vehicles and bicycles. However, bicycle amenities and design considerations, such as bike thru lanes at the intersection of Newell Avenue and Main Street, would be provided along designated bike routes which would offer added benefits to bicyclists. Therefore, the increase in conflict is not significant. Dedicated bike lanes such as those proposed along Civic Drive would provide a separate space for bicyclists and minimize the need for bicyclists to mix in with vehicular traffic. The Project, under both scenarios, would not hinder the implementation of these facilities, which would provide access for bicyclists to the project site. Therefore, the Project's impact on bicycle facilities is considered to be less than significant.

Pedestrian

The Project, under both scenarios, would result in an increase in walk trips in the Project Site and surroundings by visitors and residents. However, the Project is not anticipated to result in unsafe condition for pedestrians or conflict with any adopted policies or plans. Project improvements would create a more pedestrian-friendly and attractive configuration of the Project Site and would be consistent with the Design Review Guidelines of the proposed new zoning district, . Specifically, the creation of a pedestrian parkway along Broadway Plaza street in the middle of the project site would provide pedestrian open spaces that are explicitly encouraged in the Design Review Guidelines. Detailed pedestrian and bicycle facilities design as well as landscaping would be developed upon gathering of community feedbacks through public outreach efforts. As a result, the Project's impact on pedestrian facilities is considered to be less than significant.

Transit

The Project, under both scenarios, would not interfere with any existing County Connection bus routes and would not remove or relocate any existing bus stops with the exception of the free shuttle service, Free Ride Trolley, which operates between Walnut Creek BART and Broadway Plaza (Route 4) via Mount Diablo Boulevard, Broadway Plaza street and South Main Street. The shuttle would need to modify the southern portion of the existing route and relocate the existing trolley stops to accommodate the proposed partial closure of Broadway Plaza street. However, the Project would provide transit opportunities to replace the public transit route that would be lost due to proposed vacation of a portion of Broadway Plaza street. The Project would provide in-kind transit opportunities in terms of transit visibility, its proximity to commercial uses, the visual and physical quality of transit stops, and ease of transit use. The Project would maintain existing headways. Therefore, the Project's impact on transit facilities and services is considered to be less than significant.

Mitigation: None required.

Near Term Cumulative plus Project Conditions

Measures of Effectiveness for the Performance of Intersections

The Project, under both scenarios, would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of study intersections under Near Term Cumulative plus Project conditions (Criteria 1 and 2). (Less than Significant)

As shown in **Table 4.13-14**, most intersections would operate within acceptable standards under Near Term Cumulative conditions. The I-680 Northbound Ramps / Olympic Boulevard intersection would operate at LOS F during the p.m. peak hour.

The Project, under both scenarios, would contribute to the already substandard operations at the above-mentioned intersection under Near Term Cumulative plus Project conditions. The Project's contributions to the cumulative impact at the I-680 northbound ramps and Olympic Boulevard intersection are considered to be less than significant using the City's measures of effectiveness because the Project would increase the v/c ratio by only 0.03 under the Maximum Commercial Scenario and by 0.02 under the Maximum Mixed-Use Scenario when compared to the Near Term Cumulative (No Project) conditions. Therefore, no mitigation measures are required.

Mitigation: None required.

TABLE 4.13-14
INTERSECTION LEVEL OF SERVICE (LOS) –
NEAR TERM CUMULATIVE AND NEAR TERM CUMULATIVE PLUS PROJECT CONDITIONS

				Near Term Cumulative No Project			Near Term Cumulative plus Project Max Commercial Scenario				Near Term Cumulative plus Project Max mixed-Use Scenario			
	Intersection	**Traffic Control**	**Peak Hour**	**LOS[a]**	**V/C**	**Delay[b]**	**LOS[a]**	**V/C**	**Delay[b]**	**Change**	**LOS[a]**	**V/C**	**Delay[b]**	**Change**
1	N. Main St/ Ygnacio Valley Rd [e]			Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-16										
2	Civic Dr/ Ygnacio Valley Rd [e]			Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-16										
3	Civic Dr/ N. California Blvd	Signal	AM	A	0.51		A	0.51		0.00	A	0.51		0.00
			PM	B	0.64		B	0.64		0.00	B	0.64		0.00
4	N. Main St/Civic Dr	Signal	AM	A	0.48		A	0.48		0.00	A	0.48		0.00
			PM	C	0.74		C	0.74		0.00	C	0.74		0.00
5	N. Broadway/Civic Dr	Signal	AM	A	0.46		A	0.47		0.01	A	0.46		0.00
			PM	C	0.74		C	0.77		0.03	C	0.76		0.02
6	S. California Blvd/Bonanza St	Signal	AM	A	0.52		A	0.53		0.01	A	0.53		0.01
			PM	B	0.68		B	0.69		0.01	B	0.68		0.00
7	Boulevard Wy/ Mt. Diablo Blvd[c,f]	Signal	AM	A(B)	0.52	17.8	A(B)	0.53	17.9	0.01(0.1)	A(B)	0.53	17.8	0.01(0.1)
			PM	A(C)	0.52	21.3	A(C)	0.55	21.1	0.03(-0.2)	A(C)	0.54	21.1	0.02(-0.2)
8	Oakland Blvd/ Mt. Diablo Blvd	Signal	AM	A	0.49		A	0.49		0.00	A	0.49		0.00
			PM	A	0.54		A	0.57		0.03	A	0.56		0.02
9	Alpine Rd/ Mt. Diablo Blvd	Signal	AM	A	0.49		A	0.49		0.00	A	0.49		0.00
			PM	C	0.70		C	0.73		0.03	C	0.72		0.02
10	Bonanza St/ Mt. Diablo Blvd	Signal	AM	A	0.38		A	0.38		0.00	A	0.38		0.00
			PM	A	0.46		A	0.48		0.02	A	0.47		0.01
11	California Blvd/ Mt. Diablo Blvd	Signal	AM	A	0.42		A	0.42		0.00	A	0.43		0.00
			PM	C	0.71		C	0.75		0.04	C	0.74		0.03
12	Locust St/ Mt. Diablo Blvd	Signal	AM	A	0.33		A	0.33		0.00	A	0.33		0.00
			PM	A	0.50		A	0.52		0.02	A	0.51		0.01
13	Main St/Mt. Diablo Blvd	Signal	AM	A	0.44		A	0.44		0.00	A	0.45		0.01
			PM	B	0.70		C	0.77		0.07	C	0.75		0.05
14	Broadway Plz st/ Mt. Diablo Blvd[d,f]	One-Way Stop	AM	A		0.1	A		0.1	0.0	A		0.1	0.0
			PM	A		0.2	A		0.2	0.0	A		0.2	0.0
15	Broadway/ Mt. Diablo Blvd	Signal	AM	B	0.62		B	0.63		0.01	B	0.63		0.01
			PM	D	0.87		E	0.91		0.04	E	0.9		0.03
16	I-680 SB off ramp/ Olympic Blvd[c,f]	Signal	AM	A(C)	0.55	24.3	A(C)	0.56	24.5	0.01(0.2)	A(C)	0.56	24.5	0.01(0.2)
			PM	B(C)	0.63	25.8	B(C)	0.64	26.1	0.02(0.3)	B(C)	0.64	26.1	0.01(0.3)
17	I-680 NB ramps/ Olympic Blvd[c,f]	Signal	AM	D(C)	0.88	27.1	D(C)	0.88	27.2	0.00(-0.2)	D(C)	0.89	27.2	0.01(-0.2)
			PM	F(F)	1.27	83.5	F(F)	1.30	93.2	0.03(9.7)	F(F)	1.29	90.3	0.02(6.8)

TABLE 4.13-14 (Continued)
INTERSECTION LEVEL OF SERVICE (LOS) –
BASELINE PLUS APPROVED DEVELOPMENT AND BASELINE PLUS APPROVED DEVELOPMENT PLUS PROJECT CONDITIONS

				Near Term Cumulative No Project			Near Term Cumulative plus Project Max Commercial Scenario				Near Term Cumulative plus Project Max mixed-Use Scenario			
	Intersection	Traffic Control	Peak Hour	LOS[a]	V/C	Delay[b]	LOS[a]	V/C	Delay[b]	Change	LOS[a]	V/C	Delay[b]	Change
18	Alpine Rd/Olympic Blvd	Signal	AM	A	0.45		A	0.45		0.00	A	0.45		0.00
			PM	A	0.56		A	0.58		0.02	A	0.57		0.01
19	S.California Blvd/ Olympic Blvd	Signal	AM	A	0.41		A	0.42		0.01	A	0.42		0.01
			PM	A	0.59		B	0.62		0.03	B	0.61		0.02
20	Locust St/Olympic Blvd	Signal	AM	A	0.18		A	0.19		0.01	A	0.19		0.01
			PM	A	0.34		A	0.36		0.02	A	0.36		0.02
21	S. Main St/Olympic Blvd	Signal	AM	A	0.21		A	0.22		0.01	A	0.23		0.02
			PM	A	0.43		A	0.50		0.07	A	0.48		0.05
22	S. California Blvd/ Botelho Dr	Signal	AM	A	0.33		A	0.33		0.00	A	0.33		0.00
			PM	A	0.59		B	0.65		0.06	B	0.63		0.04
23	S.Main St/Botelho Dr	Signal	AM	A	0.18		A	0.19		0.01	A	0.20		0.02
			PM	A	0.45		A	0.50		0.05	A	0.48		0.03
24	S. Broadway/North Driveway Entrance[d,e]	One/Two-Way Stop	AM	A		0.5	A		0.4	-0.1	A		0.4	-0.1
			PM	A		1.0	A		0.4	-0.6	A		0.4	-0.6
25	S.Main St/Broadway Plaza access	Signal	AM	A	0.19		A	0.21		0.02	A	0.21		0.02
			PM	A	0.31		A	0.41		0.10	A	0.37		0.06
26	S.Broadway/South Driveway Entrance	Signal	AM	A	0.28		A	0.32		0.04	A	0.32		0.04
			PM	A	0.51		C	0.71		0.2	B	0.68		0.17
27	S.California Blvd/ Newell Ave	Signal	AM	A	0.49		A	0.49		0.00	A	0.50		0.01
			PM	A	0.59		B	0.62		0.03	B	0.61		0.02
28	S.Main St/Newell Ave	Signal	AM	A	0.54		A	0.55		0.01	A	0.55		0.01
			PM	A	0.47		A	0.52		0.05	A	0.51		0.04
29	Maria Ln/Newell Ave	Signal	AM	A	0.38		A	0.39		0.01	A	0.39		0.01
			PM	A	0.47		A	0.49		0.02	A	0.48		0.01
30	S.Broadway/Newell Ave	Signal	AM	A	0.48		A	0.48		0.00	A	0.48		0.00
			PM	A	0.55		A	0.57		0.02	A	0.56		0.01
31	San Miguel Dr/ Newell Ave[c,d,e]	All-Way Stop	AM	B		12.6	B		12.9	0.3	B		12.8	0.2
			PM	B		12.3	B		13.4	1.1	B		13.0	0.7
32	S.Main St/ I-680 SB off ramp[c,f]	Signal	AM	B(B)	0.61	10.9	B(B)	0.61	11.0	0.00(0.1)	B(B)	0.61	11.0	0.00(0.1)
			PM	C(C)	0.75	20.2	C(C)	0.76	21.5	0.01(1.3)	C(C)	0.76	21.0	0.01(0.8)
33	Danville Blvd/ Rudgear Rd[cd]	Signal	AM	C		21.4	C		21.4	0.0	C		21.4	0.0
			PM	C		28.9	C		29.8	0.9	C		29.3	0.4
34	S.Broadway/ Rudgear Rd[c,d]	Signal	AM	D		43.0	D		43.0	0.0	D		43.4	0.4
			PM	C		29.7	C		30.1	0.4	C		30.0	0.3

TABLE 4.13-14 (Continued)
INTERSECTION LEVEL OF SERVICE (LOS) –
BASELINE PLUS APPROVED DEVELOPMENT AND BASELINE PLUS APPROVED DEVELOPMENT PLUS PROJECT CONDITIONS

				Near Term Cumulative No Project			Near Term Cumulative plus Project Max Commercial Scenario				Near Term Cumulative plus Project Max mixed-Use Scenario			
	Intersection	Traffic Control	Peak Hour	LOS[a]	V/C	Delay[b]	LOS[a]	V/C	Delay[b]	Change	LOS[a]	V/C	Delay[b]	Change
35	Ygnacio Valley Rd/ N. California Blvd [e]	Signal	AM	Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-16										
			PM											
36	Ygnacio Valley Rd/ N. Broadway [e]	Signal	AM	Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-16										
			PM											
37	Civic Dr/Locust St	Signal	AM	A	0.21		A	0.21		0.00	A	0.21		0.00
			PM	A	0.37		A	0.37		0.00	A	0.37		0.00

[a] LOS = Level of Service; two LOS are shown for CCTALOS (HCM) methods, where applicable, e.g. B(A)

[b] V/C = Volume-to-Capacity ratio;

[c] Intersection is not located within Core Area as defined by City's General Plan

[d] Average vehicle delay in seconds are reported for 1) unsignalized intersections; and 2) ramp intersections.

[e] The City does not have a level of service standard for unsignalized intersections. LOS is provided for information purpose only.

[f] City criteria are used to determine project impacts at these ramp intersections. Average vehicle delay is provided for information purpose only.

SOURCE: Kittelson/Dowling Associates, Inc., 2012.

Measures of Effectiveness for the Performance of Freeway Segments & Ramps

The Project, under both scenarios, would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of study freeway segments and ramps under Near Term Cumulative plus Project conditions (Criteria 1 and 2). (Less than Significant)

As shown in **Table 4.13-15**, the I-680 and SR 24 freeway segments and ramps would operate within acceptable level of service during both peak hours under Near Term Cumulative plus Project conditions. The Project, under both scenarios, would add trips onto the regional routes; however, the added trips would not worsen the operations to substandard levels; therefore there would be no significant near term cumulative impact. The Project's contribution to these regional routes would be less than cumulatively considerable, and no mitigation measures are required. LOS calculation sheets are provided in the transportation impact analysis report (Appendix G).

TABLE 4.13-15
FREEWAY MAINLINE SEGMENT AND RAMP LEVEL OF SERVICE (LOS) –
NEAR TERM CUMULATIVE AND NEAR TERM CUMULATIVE PLUS PROJECT CONDITIONS

Mainline Segments														
			Near Term Cumulative (No Project)				Near Term Cumulative plus Project Max Commercial Scenario				Near Term Cumulative plus Project Max Mixed-Use Scenario			
			AM		PM		AM		PM		AM		PM	
No	Location	Direction	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
1	I-680 North of N. Main St	NB	22.1	C	33.9	D	22.1	C	34.2	D	22.1	C	34.1	D
		SB	18.0	C	16.8	B	18.0	C	16.9	B	18.0	C	16.9	B
2	I-680 South of S. Main St	NB	25.9	C	22.2	C	26.0	D	22.5	C	26.0	D	22.4	C
		SB	21.0	C	22.8	C	21.0	C	23.2	C	21.1	C	23.1	C
3	I-680 South of Rudgear Rd	NB	36.8	E	34.8	D	37.0	E	35.6	E	36.9	E	35.4	E
		SB	25.1	C	28.2	D	25.2	C	28.8	D	25.3	C	28.6	D
4	I-680 South of Olympic Blvd	NB	27.0	D	23.3	C	27.1	D	23.6	C	27.1	D	23.6	C
		SB	19.5	C	20.6	C	19.5	C	20.6	C	19.5	C	20.6	C
5	SR 24 West of I-680	WB	29.9	D	21.2	C	29.9	D	21.4	C	30.4	D	21.5	C
		EB	19.3	C	28.7	D	19.4	C	29.0	D	19.6	C	29.3	D

Interstate 680 Ramps														
			Near Term Cumulative (No Project)				Near Term Cumulative plus Project Max Commercial Scenario				Near Term Cumulative plus Project Max Mixed-Use Scenario			
			AM		PM		AM		PM		AM		PM	
No	Location	Type	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
1	NB S. Main St Off-Ramp	Diverge	33.3	D	30.3	D	33.5	D	31.0	D	33.5	D	30.8	D
2	SB S. Main St On-Ramp	Merge	21.4	C	23.7	C	21.5	C	24.3	C	21.6	C	24.1	C
3	NB Olympic Blvd Off-Ramp	Diverge	34.6	D	32.9	D	34.7	D	33.2	D	34.7	D	33.1	D
4	SB Olympic Blvd Off-Ramp	Diverge	37.5	E	34.4	D	37.6	E	34.7	D	37.6	E	34.6	D
5	SB Olympic Blvd On-Ramp	Weave B	26.0	C	29.8	D	26.0	C	29.9	D	26.0	C	29.9	D
6	NB Olympic Blvd On-Ramp	Weave A	37.8	E	41.8	E	37.8	E	42.1	E	37.9	E	42.0	E

SOURCE: Kittelson/Dowling Associates, Inc., 2012.

Mitigation: None required.

Measures of Effectiveness for the Performance of Routes of Regional Significance

The Project, under both scenarios, would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of routes of regional significance under Near Term Cumulative conditions (Criteria 1 and 2). (Less than Significant)

With the existing delay index less than 2.0 on I-680, the Near Term Cumulative condition was not assumed to differ because the incremental increase in traffic on I-680 under the Near Term Cumulative conditions is imperceptible when compared to existing peak hour volumes. The incremental increase in traffic associated with the Project results in an increase of less than two percent on I-680, which is within normal daily fluctuation in traffic volumes and therefore not considerable. The increased travel time due to such a small increase would be imperceptible and therefore, is not expected to contribute considerably toward any increase in the delay index.

As shown in **Table 4.13-16**, the delay index on the Ygnacio Valley Road corridor would experience marginal increase with the addition of Project traffic on both the westbound and eastbound directions and would not increase beyond the 2.0 threshold under Near Term Cumulative conditions during both peak hours. The average speed on the Ygnacio Valley Road corridor would maintain above the 15 mph threshold under Near Term Cumulative conditions and therefore, Project impacts would be considered less than significant.

TABLE 4.13-16
DELAY INDEX – NEAR TERM CUMULATIVE CONDITONS

Roadway	Limits	AM Delay Index	PM Delay Index	AM Average Speed	PM Average Speed
Near Term Cumulative (No Project)					
Ygnacio WB	Oak Grove to I-680	1.30	1.80	26	19
Ygnacio EB	I-680 to Oak Grove	1.38	1.57	22	19
Near Term Cumulative plus Project Max Commercial Scenario					
Ygnacio WB	Oak Grove to I-680	1.31	1.83	26	18
Ygnacio EB	I-680 to Oak Grove	1.38	1.59	21	19
Near Term Cumulative plus Project Max Mixed-Use Scenario					
Ygnacio WB	Oak Grove to I-680	1. 31	1.82	26	18
Ygnacio EB	I-680 to Oak Grove	1.38	1.58	21	19

SOURCE: 2000 CCTA Model, Kittelson/Dowling Associates, Inc., 2012.

Mitigation: None required.

Cumulative Impacts

Cumulative (2030) Plus Project Conditions

Measures of Effectiveness for the Performance of Intersections

The Project, under both scenarios, would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of study intersections under Cumulative conditions (Criteria 1 and 2). (Less than Significant)

As shown in **Table 4.13-17**, the majority of intersections would operate within acceptable LOS standards, with the exception of the following eight intersections under Cumulative plus Project conditions. The results are generally similar for both the Maximum Commercial and Maximum Mixed-Use scenarios; any exceptions are noted:

- N. Main Street/Civic Drive during the p.m. peak hour
- N. Broadway/Civic Drive during the p.m. peak hour
- Boulevard Way/Mt. Diablo Boulevard during the p.m. peak hour
- Broadway/Mt. Diablo Boulevard during the p.m. peak hour
- I-680 Southbound Ramps/Olympic Boulevard during the a.m. peak hour
- I-680 Northbound Ramps/Olympic Boulevard during the a.m. and p.m. peak hours
- Danville Boulevard/Rudgear Road during the a.m. and p.m. peak hours
- S. Broadway/Rudgear Road during the a.m. and p.m. peak hours

However, the Project's contribution would not be considered cumulatively significant at any of these intersections. Compared to the Cumulative (No Project) conditions, the Project would cause the v/c ratio to increase by less than 0.05 at intersections under the City's jurisdiction and would not degrade average vehicle delay to unacceptable levels at the Rudgear Road intersections, which are under Caltrans' jurisdiction. Such changes in v/c ratio and average vehicle delay are considered to be imperceptible due to normal fluctuation in daily traffic volumes and motorists' perception of traffic conditions; therefore, the Project's contribution to the impacts at these eight intersections are not considered cumulatively considerable, and no mitigation measures are required. LOS calculation sheets are provided in the transportation impact analysis report (Appendix G).

TABLE 4.13-17
INTERSECTION LEVEL OF SERVICE (LOS) – CUMULATIVE AND CUMULATIVE PLUS PROJECT CONDITIONS

				Cumulative No Project			Cumulative plus Project Max Commercial Scenario				Cumulative plus Project Max Mixed-Use Scenario			
	Intersection	Traffic Control	Peak Hour	LOS[a]	V/C	Delay[b]	LOS[a]	V/C	Delay[b]	Change	LOS[a]	V/C	Delay[b]	Change
1	N. Main St/ Ygnacio Valley Rd			Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-19										
2	Civic Dr/Ygnacio Valley Rd			Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-19										
3	Civic Dr/ N. California Blvd	Signal	AM	B	0.64		B	0.64		0.00	B	0.64		0.00
			PM	E	0.92		E	0.93		0.01	E	0.93		0.01
4	N. Main St/Civic Dr	Signal	AM	D	0.86		D	0.86		0.00	D	0.86		0.00
			PM	F	1.22		F	1.22		0.00	F	1.22		0.00
5	S. Broadway/ Civic Dr	Signal	AM	D	0.84		D	0.84		0.00	D	0.84		0.00
			PM	E	0.96		E	0.98		0.02	E	0.98		0.02
6	S. California Blvd/ Bonanza St	Signal	AM	E	0.92		E	0.93		0.01	E	0.92		0.00
			PM	E	0.91		E	0.92		0.01	E	0.92		0.01
7	Boulevard Wy/ Mt. Diablo Blvd[c,f]	Signal	AM	C(B)	0.73	19.0	C(B)	0.74	19.3	0.01(0.3)	C(B)	0.74	19.2	0.01(0.2)
			PM	E(E)	0.96	57.9	E(E)	0.99	59.8	0.03(1.9)	E(E)	0.98	59.3	0.02(1.4)
8	Oakland Blvd/ Mt. Diablo Blvd	Signal	AM	C	0.72		C	0.73		0.01	C	0.73		0.01
			PM	D	0.81		D	0.83		0.02	D	0.82		0.01
9	Alpine Rd/ Mt. Diablo Blvd	Signal	AM	B	0.61		B	0.61		0.00	B	0.61		0.00
			PM	D	0.85		D	0.87		0.02	D	0.86		0.01
10	Bonanza St/ Mt. Diablo Blvd	Signal	AM	A	0.53		A	0.54		0.01	A	0.54		0.01
			PM	B	0.62		B	0.64		0.02	B	0.64		0.02
11	California Blvd/ Mt. Diablo Blvd	Signal	AM	A	0.58		A	0.58		0.00	A	0.58		0.00
			PM	C	0.72		C	0.75		0.03	C	0.74		0.02
12	Locust St/ Mt. Diablo Blvd	Signal	AM	A	0.28		A	0.28		0.00	A	0.28		0.00
			PM	A	0.38		A	0.39		0.01	A	0.39		0.01
13	Main St/ Mt. Diablo Blvd	Signal	AM	D	0.86		D	0.87		0.01	D	0.87		0.01
			PM	D	0.82		D	0.86		0.04	D	0.85		0.03
14	Broadway Plz st/Mt. Diablo Blvd[d,e]	One-Way Stop	AM	A		0.1	A		0.1	0.0	A		0.1	0.0
			PM	A		0.2	A		0.2	0.0	A		0.2	0.0
15	Broadway/ Mt. Diablo Blvd	Signal	AM	D	0.81		D	0.81		0.00	D	0.82		0.01
			PM	F	1.12		F	1.16		0.04	F	1.15		0.03
16	I-680 SB off ramp/Olympic Blvd[c,f]	Signal	AM	E(F)	0.96	157.5	E(F)	0.96	157.2	0.00(-0.3)	E(F)	0.96	157.3	0.00(-
			PM	C(D)	0.75	54.2	C(E)	0.76	55.4	0.01(1.2)	C(E)	0.76	55.1	0.01(0.9)
17	I-680 NB ramps/ Olympic Blvd[c,f]	Signal	AM	F(F)	1.26	214.5	F(F)	1.26	215.8	0.00(1.3)	F(F)	1.26	218.1	0.00(3.6)
			PM	F(F)	1.56	246.5	F(F)	1.58	256.1	0.02(9.6)	F(F)	1.58	253.4	0.02(6.9)

TABLE 4.13-17
INTERSECTION LEVEL OF SERVICE (LOS) – CUMULATIVE AND CUMULATIVE PLUS PROJECT CONDITIONS

				Cumulative No Project			Cumulative plus Project Max Commercial Scenario				Cumulative plus Project Max Mixed-Use Scenario			
	Intersection	Traffic Control	Peak Hour	LOS[a]	V/C	Delay[b]	LOS[a]	V/C	Delay[b]	Change	LOS[a]	V/C	Delay[b]	Change
18	Alpine Rd/ Olympic Blvd	Signal	AM	A	0.46		A	0.46		0.00	A	0.46		0.00
			PM	A	0.6		B	0.61		0.01	B	0.60		0.00
19	S. California Blvd/ Olympic Blvd	Signal	AM	A	0.53		A	0.53		0.00	A	0.54		0.01
			PM	D	0.83		D	0.85		0.02	D	0.84		0.01
20	Locust St/ Olympic Blvd	Signal	AM	A	0.31		A	0.32		0.01	A	0.32		0.01
			PM	A	0.55		A	0.57		0.02	A	0.57		0.02
21	S. Main St/ Olympic Blvd	Signal	AM	B	0.69		C	0.70		0.01	C	0.71		0.02
			PM	D	0.81		D	0.88		0.07	D	0.86		0.05
22	S. California Blvd/ Botelho Dr	Signal	AM	A	0.36		A	0.36		0.00	A	0.36		0.00
			PM	A	0.54		A	0.60		0.06	A	0.58		0.04
23	S. Main St/ Botelho Dr	Signal	AM	A	0.45		A	0.47		0.02	A	0.47		0.02
			PM	C	0.79		D	0.82		0.03	D	0.81		0.02
24	S. Broadway/ North Driveway Entrance[d,e]	One/Two-Way Stop	AM	A		0.4	A		0.3	-0.1	A		0.3	-0.1
			PM	A		1.7	A		0.4	-1.3	A		0.4	-1.3
25	Main St/Broadway Plaza access	Signal	AM	A	0.38		A	0.39		0.01	A	0.40		0.02
			PM	A	0.44		A	0.52		0.08	A	0.49		0.05
26	S. Broadway/ South Driveway Entrance	Signal	AM	A	0.35		A	0.38		0.03	A	0.39		0.04
			PM	A	0.59		C	0.80		0.21	C	0.77		0.18
27	S. California Blvd/ Newell Ave	Signal	AM	A	0.45		A	0.46		0.01	A	0.46		0.01
			PM	B	0.61		B	0.63		0.02	B	0.62		0.01
28	S. Main St/ Newell Ave	Signal	AM	B	0.67		B	0.68		0.01	B	0.68		0.01
			PM	C	0.73		C	0.77		0.04	C	0.75		0.02
29	Maria Ln/Newell Ave	Signal	AM	A	0.32		A	0.33		0.01	A	0.33		0.01
			PM	A	0.44		A	0.46		0.02	A	0.45		0.01
30	S. Broadway/ Newell Ave	Signal	AM	A	0.55		A	0.55		0.00	A	0.55		0.00
			PM	A	0.58		A	0.59		0.01	A	0.59		0.01
31	San Miguel Dr/ Newell Ave[c,d,e]	All-Way Stop	AM	E		42.4	E		43.8	1.4	E		43.6	1.2
			PM	C		17.4	C		19.6	2.2	C		18.8	1.4
32	S. Main St/I-680 SB off ramp[c,f]	Signal	AM	C(D)	0.71	54.2	C(D)	0.71	54.4	0.00(0.2)	C(D)	0.71	54.4	0.00(0.2)
			PM	D(E)	0.88	68.1	D(E)	0.89	71.0	0.01(2.9)	D(E)	0.88	70.1	0.00(2.0)
33	Danville Blvd/ Rudgear Rd[c,d]	Signal	AM	F		84.3	F		84.9	0.6	F		84.9	0.6
			PM	F		87.1	F		89.2	2.1	F		88.7	1.6
34	S. Broadway/ Rudgear Rd[c,d]			F		95.3	F		95.7	0.4	F		95.5	0.2
				F		108.3	F		110.8	2.5	F		110	1.7

TABLE 4.13-17 (Continued)
INTERSECTION LEVEL OF SERVICE (LOS) – CUMULATIVE AND CUMULATIVE PLUS PROJECT CONDITIONS

				Cumulative No Project			Cumulative plus Project Max Commercial Scenario				Cumulative plus Project Max Mixed-Use Scenario			
	Intersection	**Traffic Control**	**Peak Hour**	**LOS[a]**	**V/C**	**Delay[b]**	**LOS[a]**	**V/C**	**Delay[b]**	**Change**	**LOS[a]**	**V/C**	**Delay[b]**	**Change**
35	Ygnacio Valley Rd/ N. California Blvd			Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-19										
36	Ygnacio Valley Rd/ N. Broadway	Signal	AM	Performance standard on Ygnacio Valley Road is based on delay index and average speed – see Table 4.13-19										
			PM											
37	Civic Dr/Locust St	Signal	AM	A	0.23		A	0.23		0.00	A	0.23		0.00
			PM	A	0.33		A	0.33		0.00	A	0.33		0.00

[a] LOS = Level of Service
[b] V/C = Volume-to-Capacity ratio;
[c] Intersection is not located within Core Area as defined by City's General Plan
[d] Average vehicle delay in seconds are reported for 1) unsignalized intersections; and 2) ramp intersections.
[e] The City has no operation standard for unsignalized intersections. LOS is provided for information purpose only.
[f] City criteria are used to determine project impacts at these ramp intersections. Average vehicle delay is provided for information purpose only.

SOURCE: Kittelson/Dowling Associates, Inc., 2012.

Mitigation: None required.

Measures of Effectiveness for the Performance of Freeway Segments & Ramps

The Project, under both scenarios, would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of study freeway segments and ramps under Cumulative conditions (Criteria 1 and 2). (Less than Significant)

As shown in **Table 4.13-18**, above, the I-680 freeway segments and ramps would operate within acceptable level of service during both peak hours under Cumulative (No Project) conditions. The Project, under both scenarios, would add trips onto the regional routes; however, the added trips would not worsen the operations to substandard levels. However, the westbound segment of SR 24 west of I-680 would operate at LOS F with the demand exceeding available capacity during the a.m. peak hour. The Project, under both scenarios, would contribute to the already substandard operations on this segment of SR 24; but the added trips would represent less than one-fifth of one percent of the mainline volumes, which is well within daily traffic fluctuations and would not be noticeable. Based on these findings, the Project impact would not be considered to contribute considerably towards this cumulative impact, and no mitigation measures are required. LOS calculation sheets are provided in the transportation impact analysis report (Appendix G).

Mitigation: None required.

Measures of Effectiveness for the Performance of Routes of Regional Significance

The Project, under both scenarios, would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of routes of regional significance under Cumulative conditions (Criteria 1 and 2). (Less than Significant)

The Delay Index was calculated for the segments of I-680 between North Main Street and Rudgear Road using the 2030 Model and found to be less than 4.0 for I-680. The added traffic from the Project would represent less than one percent of the total future volumes on I-680. Therefore, the Project's cumulative contribute is not considered to be significant.

As shown in **Table 4.13-19**, the Delay Index on the Ygnacio Valley Road corridor would increase with the addition of Project traffic (under both scenarios) on both the westbound and eastbound directions, but would not increase beyond the 2.0 threshold under Cumulative plus Project conditions during either peak hour. The average speed on the Ygnacio Valley Road corridor would remain above the 15 mph threshold under Cumulative plus Project conditions. Therefore, Project's cumulative contribution is considered to be less than significant. Delay Index calculations are provided in the transportation impact analysis report (Appendix G).

TABLE 4.13-18
FREEWAY MAINLINE SEGMENT AND RAMP LEVEL OF SERVICE (LOS) – CUMULATIVE AND CUMULATIVE PLUS PROJECT CONDITIONS

Mainline Segments														
			Cumulative No Project				Cumulative plus Project Max Commercial Scenario				Cumulative plus Project Max Mixed-Use Scenario			
			AM		PM		AM		PM		AM		PM	
No	Location	Direction	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
1	I-680 North of N. Main St	NB	22.9	C	39.4	E	23.0	C	39.7	E	23.0	C	39.7	E
		SB	22.4	C	18.8	C	22.4	C	18.9	C	22.4	C	18.9	C
2	I-680 South of S. Main St	NB	40.9	E	33.9	D	41.0	E	34.5	D	41.0	E	34.4	D
		SB	30.0	D	30.0	D	30.0	D	30.5	D	30.1	D	30.4	D
3	I-680 South of Rudgear Rd	NB	42.4	E	-	F	42.6	E	-	F	42.6	E	-	F
		SB	-	F	-	F	-	F	-	F	-	F	-	F
4	I-680 South of Olympic Blvd	NB	39.7	E	34.5	D	39.9	E	35.0	D	39.9	E	34.9	D
		SB	24.5	C	23.5	C	24.5	C	23.5	C	24.5	C	23.5	C
5	SR 24 West of I-680	WB	-	**F**	33.3	D	-	**F**	33.6	D	-	**F**	33.5	D
		EB	29.7	D	**-**	F	29.8	D	**-**	F	29.8	D	**-**	F

Interstate 680 Ramps														
			Cumulative No Project				Cumulative plus Project Max Commercial Scenario				Cumulative plus Project Max Mixed-Use Scenario			
			AM		PM		AM		PM		AM		PM	
No	Location	Type	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
1	NB S. Main St Off-Ramp	Diverge	43.3	E	39.8	E	43.5	E	40.5	E	43.5	E	40.3	E
2	SB S. Main St On-Ramp	Merge	29.8	D	30.5	D	29.9	D	31.2	D	30.0	D	31.0	D
3	NB Olympic Blvd Off-Ramp	Diverge	52.6	F	42.8	E	52.7	F	43.1	E	52.7	F	43.1	E
4	SB Olympic Blvd Off-Ramp	Diverge	46.0	E	36.6	E	46.1	E	36.9	E	46.1	E	36.9	E
5	SB Olympic Blvd On-Ramp	Weave B	33.2	D	32.7	D	33.2	D	32.8	D	33.3	D	32.8	D
6	NB Olympic Blvd On-Ramp	Weave A	74.6	F	94.9	F	74.7	F	95.6	F	74.7	F	95.4	F

SOURCE: Kittelson/Dowling Associates, Inc., 2012

TABLE 4.13-19
DELAY INDEX – CUMULATIVE CONDITONS

Roadway	Limits	AM Delay Index	PM Delay Index	AM Average Speed	PM Average Speed
Cumulative (No Project)					
Ygnacio WB	Oak Grove to I-680	1.59	1.83	21	18
Ygnacio EB	I-680 to Oak Grove	1.56	1.70	19	18
Cumulative plus Project Max Commercial Scenario					
Ygnacio WB	Oak Grove to I-680	1.60	1.86	21	18
Ygnacio EB	I-680 to Oak Grove	1.57	1.73	19	17
Cumulative plus Project Max Mixed-Use Scenario					
Ygnacio WB	Oak Grove to I-680	1.60	1.85	21	18
Ygnacio EB	I-680 to Oak Grove	1.57	1.72	19	17

SOURCE: 2000 CCTA Model, Kittelson/Dowling Associates, Inc., 2012.

Mitigation: None required.

Construction Impacts

Impact TRA-2: Remediation, demolition and construction activities associated with the Project, under both scenarios, would result in temporary circulation impacts on the street system (Criteria 1, 4, and 6). (Less than Significant with Mitigation)

The Project, under both scenarios, would be constructed over a multi-year period. This analysis assumed that development would be compressed into a single phase lasting a total of 30 to 36 months (2.5 to 3 years). Construction-related activities would include numerous disruptions to the transportation system in and around the Project Site and surroundings, including temporary street closures, lane closures and sidewalk closures. Heavy vehicles would access the Project Site and surroundings, and equipment and materials would need to be staged for construction. Short-term demolition and construction activities and staging of construction vehicles and equipment would result in degraded roadway operations.

Demolition and construction activities occur in distinct phases that do not generally overlap. Based on information provided by the Project Applicant, it was estimated that the peak transport activities would occur during the demolition phase, which is estimated to last approximately five months. A total of 247,000 cubic yards (CY) of demolition materials, including soil excavated from the Project Site, would be exported, which equates to 12,350 truckloads or 24,700 truck trips (assuming 20-CY capacity trucks). On average, the activity would add 247 truck trips per workday on the roadway during the five-month (100 working days) period. The peak amount of deliveries would occur during concrete pour phase when up to 100 delivery truck loads or 200 truck trips are projected per day.

In addition to on-haul and off-haul trips, vehicular trips would be generated by an estimated maximum of 500 construction employees on the site at any one time. Parking for construction workers would be located in existing Broadway Plaza parking facilities or off-site locations within reasonable walking or transit distance of the site. The work day for construction employees would typically commence at or prior to the beginning of the morning commuter peak period of 7:00 a.m. to 9:00 a.m. Therefore, construction employee-generated trips would not have a significant effect on the traffic operations on the roadway during the a.m. peak hour. The end of the work day would coincide with the afternoon commuter peak period of 4:00 p.m. to 6:00 p.m. However, the impact of the trips generated by the construction workers would not likely exceed those identified for the Project. It should also be noted that the demolition of the existing commercial square footage during the construction period would correspondingly reduce the number of shopping trips generated by those commercial spaces.

There would likely be multiple destination for off-haul materials and origins for on-haul materials. Construction workers would also be arriving from different directions. Travel routes for employees, demolition export and material import would be determined in consultation with the City and scheduled to avoid peak traffic periods.

Accordingly, the Project would not create significant impacts in terms of performance of the circulation system. However, Project construction activities including the import and export of materials and heavy equipment could result in impacts to vehicle and pedestrian safety, and conflict with plans relating to pedestrian accessibility in and around the Project Site, resulting in a potentially significant impact. Implementation of **Mitigation Measure TRA-2** would reduce construction-related impacts to a less-than-significant level.

> **Mitigation Measure TRA-2:** The Project Applicant and/or its contractor(s) shall prepare and implement a traffic control plan to reduce construction related traffic impacts on the roadways at, and near the work site, as well as to reduce potential traffic safety hazards and ensure adequate access for emergency responders. The Project Applicant and/or its contractor(s) shall coordinate development and implementation of this plan with jurisdictional agencies (e.g., City of Walnut Creek departments, Contra Costa County Transit Authority, Contra Costa Fire Protection Districts, etc.), as appropriate. To the extent applicable, the traffic control plan shall conform to Part 6 (Temporary Traffic Control) of the *California Manual on Uniform Traffic Control Devices* (Caltrans, 2010b), and shall include, but not be limited to, the following elements:
>
> - Circulation and detour plans to minimize impacts on local road circulation during road and lane closures. Flaggers and/or signage shall be used to guide vehicles through and/or around the construction zone.
>
> - Identifying truck routes designated by Contra Costa County and City of Walnut Creek. Haul routes that minimize truck traffic on local roadways shall be utilized to the extent possible.
>
> - Providing sufficient-sized staging areas for trucks accessing construction zones to minimize disruption of access to adjacent public right-of-ways.

- Controlling and monitoring construction vehicle movement through the enforcement of standard construction specifications by on-site inspectors.
- Scheduling truck trips outside the peak morning and evening commute hours to the extent possible.
- Limiting the duration of road and lane closures to the extent possible.
- Maintaining pedestrian and bicycle access and circulation during Project construction where safe to do so. If construction activities encroach on a bicycle routes or multi-use paths, advance warning signs (e.g., "Bicyclists Allowed Use of Full Lane" and/or "Share the Road") shall be posted that indicate the presence of such users.
- Identifying detours for bicycles and pedestrians, where applicable, in all areas where maintaining pedestrian and bicycle access and circulation during Project construction cannot be safely done.
- Storing all equipment and materials in designated contractor staging areas on or adjacent to the worksite, such that traffic obstruction is minimized.
- Implementing roadside safety protocols. Advance "Road Work Ahead" warning and speed control signs (including those informing drivers of state-legislated double fines for speed infractions in a construction zone) shall be posted to reduce speeds and provide safe traffic flow through the work zone.
- Providing advance notification to administrators of police and fire stations (including fire protection agencies), ambulance service providers, and recreational facility managers of the timing, location, and duration of construction activities and the locations of detours and lane closures, where applicable. Maintain access for emergency vehicles within, and/or adjacent to, roadways affected by construction activities at all times.
- Repairing and restoring affected roadway rights-of way to their original condition after construction is completed.

A copy of the traffic control plan shall be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct roadways.

Significance after Implementation of Mitigation Measure: Less than Significant.

Planning Related Non-CEQA Issues

The item discussed in this section includes:

- Parking Considerations

Parking Considerations

The City of Walnut Creek, in its review of the Project, wants to ensure that the Project's provision of additional parking spaces along with measures to lessen parking demand (by encouraging the use of non-auto travel modes) would result in minimal adverse effects to project occupants and visitors. Accordingly, the following discussion addresses the regulatory issue of compliance with City of Walnut Creek Municipal Code requirements.

The following analysis evaluates if the Project's estimated parking demand (both project-generated and project-displaced) under both scenarios, could be met by the Project's proposed parking supply or (during temporary construction periods) by the existing parking supply within a reasonable walking distance of the project site. Project-displaced parking results from the Project's removal of standard on-street parking, City-owned/controlled parking and/or legally required off-street parking (non-open-to-the-public parking which is legally required).

Parking-Related Conditions

Existing Parking Conditions

Parking supply within the Broadway Plaza Center currently includes parking facilities, adjoining on-street spaces, and off-street parking lots and garages. Broadway Plaza currently provides approximately 2,529 parking spaces, excluding 72 offsite spaces for employee parking procured by Project Applicants in 2011. These exceed the 2,589 spaces required under Baseline conditions under the City's Municipal Code. In addition, there are approximately 58 on-street metered parking spaces, four commercial loading spaces, and one handicapped space on Broadway Plaza street, for a total of 63 spaces. There are additional parking facilities located throughout the downtown area, such as three public garages, a surface parking lot at North Broadway and Lincoln Avenue, and on-street parking.

Based on occupancy surveys conducted in February and March 2008, the existing parking for Broadway Plaza is essentially fully parked during the middle of the day on Saturdays, but Friday and Sunday still had more than 350 spaces available at peak occupancy. Parking demand on weekdays was even lower with only 50 percent occupancy (approximately 1,250 spaces) during the afternoon commuter peak period (Kimley-Horn and Associates, 2008).

Proposed Parking Changes Due to the Project

For the purpose of this analysis, it is projected that the Project, under both scenarios, would alter the existing parking facilities resulting in a net increase of up to 1,058 spaces, for a total of up to 3,587 spaces. The actual number of spaces and their locations will depend upon the development program that is actually proposed for construction. Some garages would be reconstructed to provide more parking while a new garage would be built as a central underground garage. **Table 4.13-20** shows the parking that is proposed to be completed with the Project. Each of these facilities are summarized below and discussed in detail in Chapter 3, *Project Description*.

Garage A is an existing garage with 753 parking spaces that is accessed off South Main Street and Botelho Drive. This garage, as well as the 14-space surface lot near Nordstrom store would be unaffected by the Project under both scenarios. Garage B would be constructed as a new

TABLE 4.13-20
CONCEPTUAL DISTRIBUTION OF PROPOSED PARKING FACILITIES

Parking Facility	Number of Spaces
Garage A on South Main	753
Garage B underground garage	650
Garage C on South Broadway	1,100
Garage D on South Broadway	1,070
Surface Lot near Nordstrom store	14
Total	**3,587**

underground parking garage that would house 650 parking spaces, including a gated area for reserved residential parking under the Maximum Mixed-Use Scenario, but the garage would not be affected under the Maximum Commercial Scenario. Garage C would replace the current Nordstrom Garage; this garage would provide up to approximately 1,100 parking spaces. However, depending upon the final configuration, Garage C may increase to as many as 1,250 spaces. The Macy's Garage would also be demolished and reconstructed as Garage D. The new garage is proposed to have up to about 1,070 parking spaces.

Parking Code Requirements for Proposed Project

The Project's parking requirements were analyzed for the Maximum Commercial Scenario and the Maximum Mixed-Use Scenario. Under the Maximum Commercial Scenario, the Project would result in a net increase of up to 295,095 square feet of rentable commercial floor area in Broadway Plaza; whereas under the Maximum Mixed-Use Scenario, the Project would result in a net increase of up to 198,034 square feet of rentable commercial floor area along with a maximum of 200 residential units (refer to Chapter 3, *Project Description*, for detailed information on each Project scenario).

Maximum Commercial Scenario. As stated in Section 10-2.3.204 of the City of Walnut Creek Municipal Code, current parking requirements mandate one parking space per 300 square feet of rentable floor area for commercial uses; therefore the Project, under the Maximum Commercial Scenario would require 984 parking spaces or 74 fewer than what is proposed to be built as shown in **Table 4.13-21**.

TABLE 4.13-21
PROPOSED PARKING –
MAXIMUM COMMERCIAL SCENARIO VERSUS PARKING REQUIRED BY CODE

Parking		Number of Spaces
Proposed		1,058
Code Required Commercial-Only		984
	Difference	74

SOURCE: City of Walnut Creek Municipal Code, 2011; Kittelson/Dowling Associates, Inc., 2012.

Maximum Mixed-Use Scenario. The commercial land use of the Project, under the Maximum Mixed-Use Scenario, would require 667 parking spaces to meet City code of one space per 300 square feet of rentable floor area. This would leave a potential for 398 extra parking spaces to accommodate the 200 residential unitsas shown in **Table 4.13-22**.

TABLE 4.13-22
PROPOSED PARKING –
MAXIMUM MIXED-USE VERSUS PARKING REQUIRED BY CODE

Parking	Number of Spaces
Proposed	1,058
Code Required Commercial-Only	660
Available for Residential Component	398

SOURCE: City of Walnut Creek Municipal Code, 2011; Kittelson/Dowling Associates, Inc., 2012.

Table 4.13-23 shows the required parking per residential unit and the total number of spaces required if all 200 proposed residential units were of the same type, and if no adjustment were made for shared parking due to the mixed use nature of the project. For example, the potential for 398 parking spaces above those needed to satisfy the commercial parking requirements could accommodate 200 units of either studio or one bedroom units. However, if 200 two-bedroom units are constructed, there would not be enough parking provided in the proposed garages to meet City code requirements. The final parking supply shall comply with the parking ordinance and City Code.

TABLE 4.13-23
PARKING REQUIREMENTS FOR MULTIPLE FAMILY RESIDENTIAL UNITS

Residential Unit Type	Parking Spaces per Unit	Required for 200 Units
Studio	1.25	250
One Bedroom	1.5	300
Two Bedrooms	2	400
Two + Bedrooms	2.25	450

SOURCE: City of Walnut Creek Municipal Code, 2011; Kittelson/Dowling Associates, Inc., 2012.

Vacating Broadway Plaza street

The Project, under both scenarios, proposes the vacation of Broadway Plaza street. The vacation of this street would also eliminate up to 63 on-street metered parking spaces (including four loading spaces and one handicapped space) that are currently on this street. The Project is required to accommodate all 63 existing parking spaces that would be lost in the off-street parking facilities. These 63 lost spaces would be accommodated by the excess parking provided under the Maximum Commercial Scenario, which would have 74 extra parking spaces. There would be a potential shortfall of five spaces; however, this shortfall may be overstated due to the use of gross floor area rather than rentable floor area in the calculation of parking requirement in

this analysis. The final parking requirement will be determined using rentable floor area information.

The 63 lost spaces may also be fully accommodated by the Maximum Mixed-Use Scenario if the residential land use requires an average of 1.5 spaces per residential unit, which would result in 98 extra parking spaces. The sufficiency of the final parking supply would be determined as a part of the City's review process.

4.13.5 References

City of Walnut Creek, 2006. City of Walnut Creek General Plan 2025 (April 4, 2006).

City of Walnut Creek, 2009. City of Walnut Creek Design Review Guidelines 1996 (updated July, 26, 1999). Accessed online at: http://www.walnut-creek.org/citygov/depts/cd/planning/guide_dr/dr_guidelines1996.asp#Ch4 Addtl Guides (November 18, 2011).

City of Walnut Creek, 2010. City of Walnut Creek 2010-2012 Capital Investment Program (June 15, 2010).

City of Walnut Creek, 2011a. City of Walnut Creek Bicycle Plan (August 2011).

City of Walnut Creek, 2011b. City of Walnut Creek Municipal Code (August 2, 2011).

Central Costa County Transit Authority (CCCTA), 2011. CCCTA "County Connection" Bus Routes and Timetables (August 27, 2011).

Contra Costa Transportation Authority (CCTA), 2006. Contra Costa County Technical Procedures Update Final (July 19, 2006).

Contra Costa Transportation Authority (CCTA), 2008. Contra Costa County 2007 Traffic Service Objective Monitoring Final Report (September 24, 2008).

Contra Costa Transportation Authority (CCTA), 2009a. 2009 Countywide Comprehensive Transportation Plan (June 17, 2009).

Contra Costa Transportation Authority (CCTA), 2009b. Central Contra Costa County Updated Action Plan for Routes of Regional Significance (July 9, 2009).

Contra Costa Transportation Authority (CCTA), 2011a. 2011 Congestion Management Program Draft Report (2011).

Contra Costa Transportation Authority (CCTA), 2011b. Congestion Monitoring Program – Draft Monitoring Report (August 2, 2011).

Dowling Associates, 2008. Downtown Walnut Creek Commercial Trip Generation Memorandum, March 11, 2008.

Institute of Transportation Engineers (ITE), 2004. *Trip Generation Handbook* (2004).

Institute of Transportation Engineers (ITE), 2008. *Trip Generation*, 8th edition (2008).

Kimley-Horn and Associates, Inc., 2008. Kimley-Horn and Associates, Inc. conducted parking occupancy surveys of Broadway Plaza in December 2007, February 2008 and March 2008.

State of California, Department of Transportation (Caltrans), 2002. *Guide for the Preparation of Traffic Impact Studies* (December 2002).

State of California, Department of Transportation (Caltrans), 2010a. *California Manual on Uniform Traffic Control Devices for Streets and Highways - Part 4 Highway Traffic Signals Warrant 3* (January 21, 2010).

State of California, Department of Transportation (Caltrans), 2010b. *California Manual on Uniform Traffic Control Devices for Streets and Highways - Part 6 Temporary Traffic Control* (January 21, 2010).

Transportation Research Board (TRB), *Highway Capacity Manual* (December 2000).