4.4 TRANSPORTATION AND CIRCULATION

INTRODUCTION

This section of the EIR, which was prepared by Fehr & Peers, analyzes transportation impacts that would result from the implementation of the proposed Covell Village project. The information is based on traffic movement counts, traffic projections, and technical analyses conducted for this EIR by Fehr & Peers (see Appendix D).[1] Potential impacts to the off-site roadway, bicycle, pedestrian, and transit systems are evaluated, as well as site access, on-site circulation, and parking. Mitigation measures are suggested to reduce or eliminate potential significant impacts of the project.

ENVIRONMENTAL SETTING

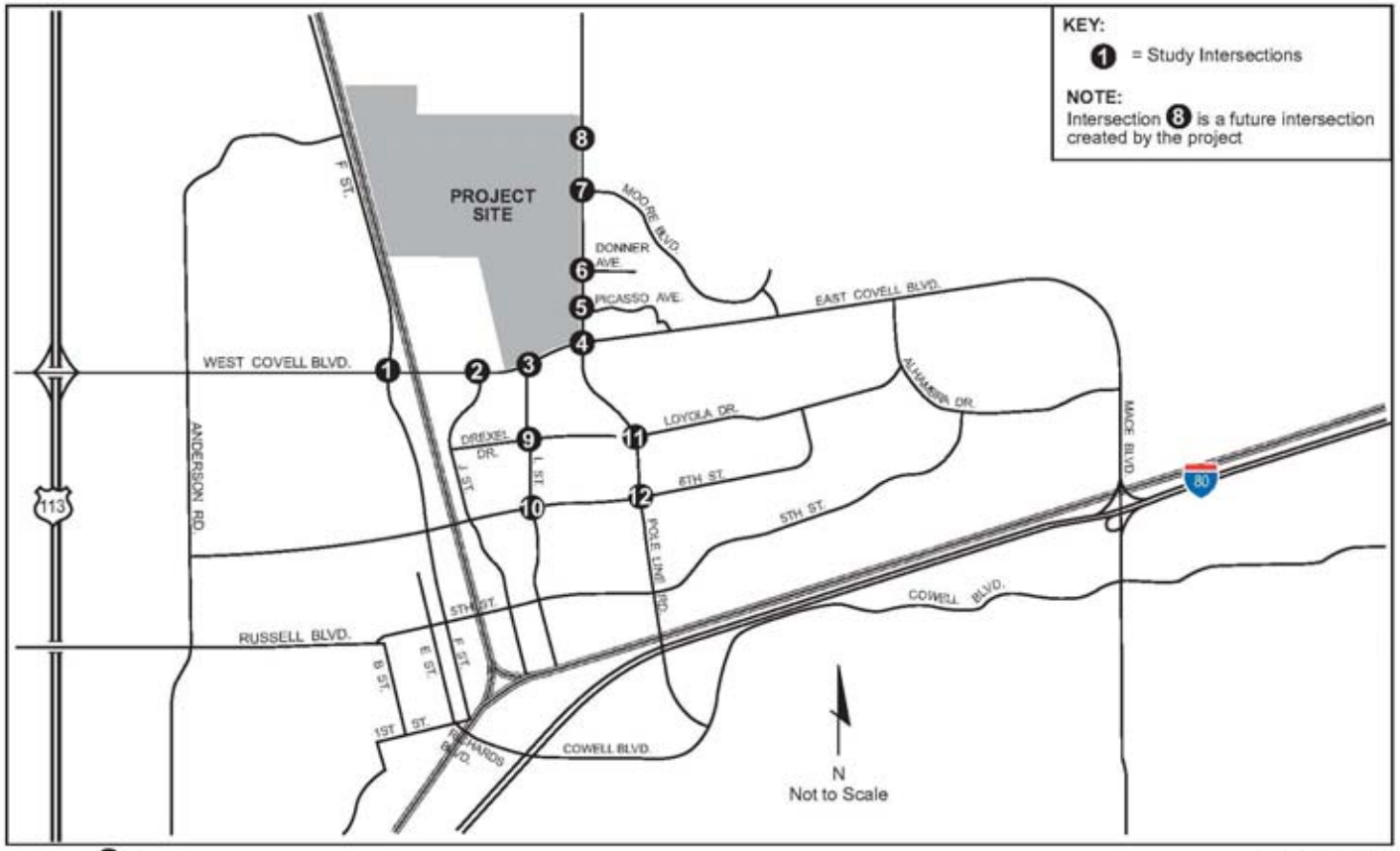
The project site and surrounding roadway network are shown in Figure 4.4-1. The key intersections in the transportation analysis project study area are also shown on this figure.

Existing Roadway Network

The primary access routes to the Covell Village site are via Covell Boulevard, Pole Line Road, F Street, J Street, and L Street. Descriptions of these roads and other local roads in the vicinity of the project are provided below.

Covell Boulevard is a four-lane east-west major arterial that borders the southern edge of the site. Speed limits vary, from 35 miles per hour (mph) west of F Street to 45 mph east of Manzanita Lane. The speed limit is 35 mph adjacent to the site. Travel lanes are separated by a raised landscaped median and bike lanes are provided on both sides of the street. To the east, Covell Boulevard turns into Mace Boulevard before its interchange with Interstate 80. To the west, Covell Boulevard intersects and provides full access to State Route 113.

Pole Line Road is a two-lane roadway that borders the project site to the east. To the north, Pole Line is classified as a major arterial and is undivided with a 35-mile per hour speed limit from Covell Boulevard to Moore Boulevard. The posted speed limit increases to 45 mile per hour north of Moore Boulevard. South of Covell Boulevard, Pole Line Road is a minor arterial to Fifth Street. South of Fifth Street, Pole Line is classified as a major arterial and crosses over Interstate 80 terminating at Cowell Boulevard in South Davis. Pole Line Road provides access to Wildhorse Golf Course, Nugget Soccer Fields, and Playfields Park. Bike lanes are provided on Pole Line Road south of Covell Boulevard, and a bike path is provided between Covell Boulevard and Moore Boulevard.



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December 2004
2068-4.4-1 project location

PROJECT SITE AND STUDY INTERSECTION LOCATIONS

FIGURE 4.4-1

F Street is a two-lane north-south minor arterial located to the west of the project site with a speed limit of 25 mph south of Covell Boulevard and 35 mph north of Covell Boulevard. Two travel lanes exist with a two-way left turn lane in the middle. F Street provides access to Davis Community Park, Little League Ball Park, and downtown Davis. Bike lanes are provided along F Street.

J Street is a two-lane north-south, undivided collector street that extends from Covell Boulevard to Second Street; the posted speed limit is 25 mph. Bike lanes are provided along J Street.

L Street is a two-lane north-south, undivided collector street that extends from Covell Boulevard across from the project site to Second Street. The posted speed limit along L Street is 25 mph, and bike lanes are provided on both sides of the street.

Picasso Avenue is a two-lane local street that runs east-west and intersects Pole Line Road opposite the project site. Picasso Avenue has a speed limit of 25 mph.

Donner Avenue is a two-lane collector street that runs east-west and intersects Pole Line Road opposite the project site. Donner Avenue has a speed limit of 25 mph and bike lanes on both sides of the street.

Moore Boulevard is a two-lane minor arterial that runs east-west and intersects Pole Line Road opposite the project site. Moore Boulevard has a speed limit of 25 mph and provides access to Nugget Soccer Fields, Sandy Motley Park, and Frank Lloyd Wright Park. Bike lanes are provided on Moore Boulevard, as well as bike paths parallel to and on both sides of Moore Boulevard.

Eighth Street is a two-lane east-west minor arterial that extends across the City from west of Sycamore Lane to Tulip Lane. Eighth Street has a speed limit of 25 mph and provides bike lanes.

Drexel Drive is a two-lane east-west local street that extends from J Street to east of L Street. Drexel Drive has a speed limit of 25 mph and does not have a median. Drexel Drive runs adjacent to Oliver Wendell Homes Junior High School.

Loyola Drive is a two-lane east-west collector street without a median that extends from Pole Line Road to Alhambra Boulevard. Loyola Drive has a speed limit of 25 mph and bike lanes.

Existing Pedestrian and Bicycle Facilities

The area surrounding the project site provides excellent access for cyclists and pedestrians. All of the roads mentioned above have sidewalks or bike/pedestrian paths on at least one side of the street. All signalized intersections provide pedestrian signal heads and striped crosswalks; stop controlled intersections have striped crosswalks.

Bicycle facilities include bike paths (Class I), bike lanes (Class II), and bike routes (Class III). Bike paths are paved trails that are separated from roadways. Bike lanes are lanes on roadways designated for use by bicycles by striping, pavement legends, and signs. Bike routes are roadways that are designated for bicycle use with signs but do not necessarily include any additional pavement width. Davis has an extensive bicycle network (both Class I and Class II facilities) throughout the City. In the vicinity of the project, bike paths exist to the east along Moore Boulevard, Pole Line Road, Donner Avenue and within the Wildhorse neighborhood; to the south along Covell Boulevard; and to the west around the North Area Drainage Pond and Northstar Park. In addition, bike lanes exist along Donner Avenue, Pole Line Road, F Street, J Street, and L Street. Figure 4.4-2 depicts the existing bicycle facilities near the project site.

Existing Transit System

Transit services to the project area are provided by Yolobus, a local and inter-city bus system that services Yolo County and neighboring areas; and Unitrans, a student-run organization offering local bus service throughout the City of Davis. Figure 4.4-3 shows the existing transit routes that serve the project area. Davis Community Transit also provides service for registered riders (senior citizens and persons with disabilities) using a reservation system.

Yolobus

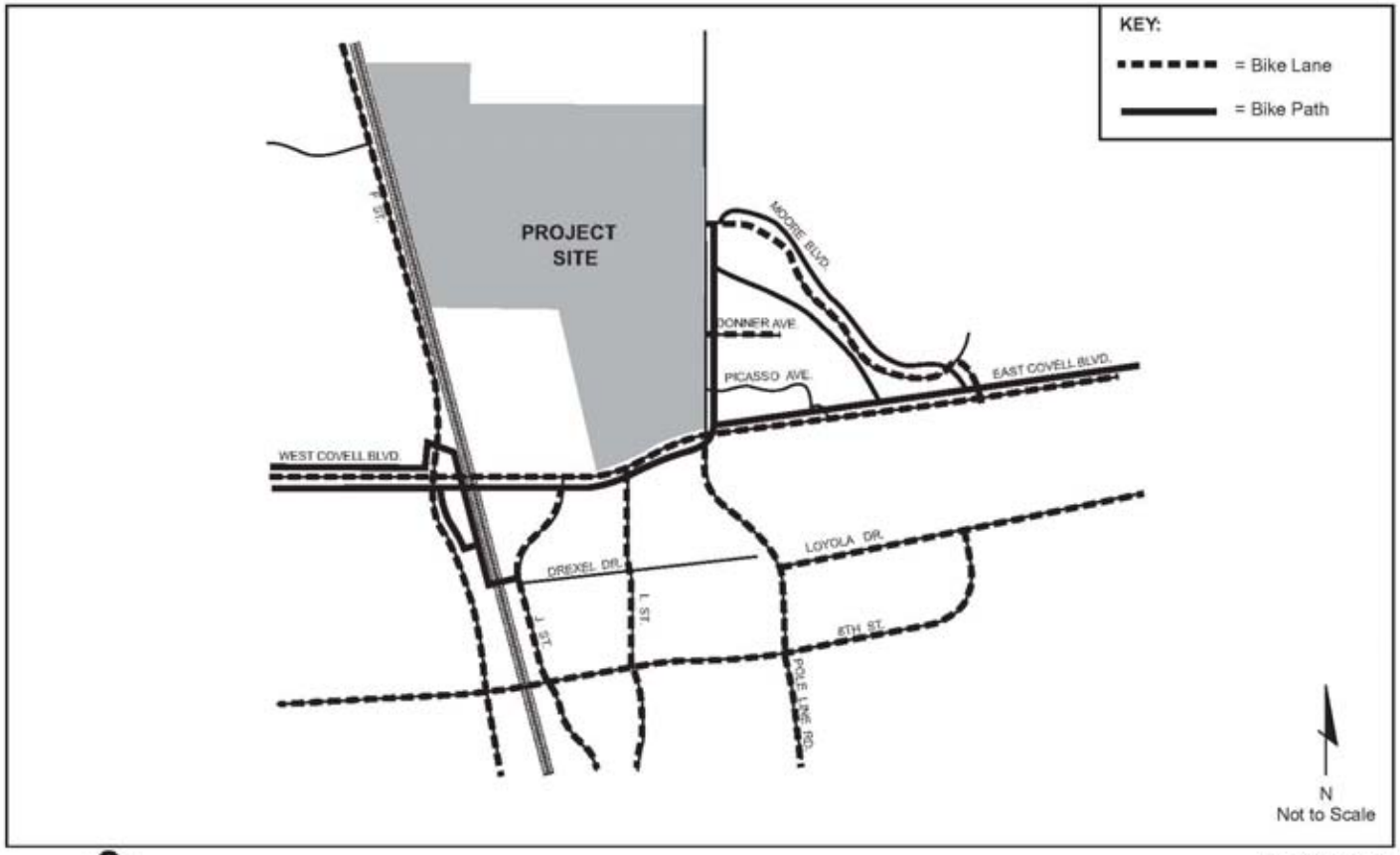
Yolobus is run by the Yolo County Transportation District, which operates local and inter-city bus service 365 days a year in Yolo County and neighboring areas. Yolobus serves Davis, West Sacramento, Winters, Woodland, downtown Sacramento, Sacramento International Airport, Cache Creek Casino, Esparto, Madison and Knights Landing. Two Yolobus routes (42 and 43) serve the site:

- ***Route 42*** services Davis, Woodland, Sacramento International Airport, and West Sacramento. Route 42 buses traverse Covell Boulevard with a stop near F Street. Service is provided between approximately 5:00 a.m. and 12:00 a.m. daily with morning and night service only on weekdays with 60-minute headways.

- ***Route 43*** is an express route from the City of Davis to Sacramento. Route 43 buses traverse Covell Boulevard with stops near F Street and Pole Line Road. Service is provided between 6:00 a.m. and 8:00 a.m. and between 4:00 p.m. and 7:00 p.m.

Unitrans

Unitrans is a student-run public transportation bus system that serves the City of Davis. Bus service is provided on weekdays from 7:00 a.m. to 11:00 p.m., and on Saturdays from 9:00 a.m. to 6:00 p.m. Buses run more frequently during the UCD academic year when ridership is higher, and less frequently during the summer and breaks. Unitrans charges one-dollar cash fare, and many types of prepaid discounted tickets and passes are



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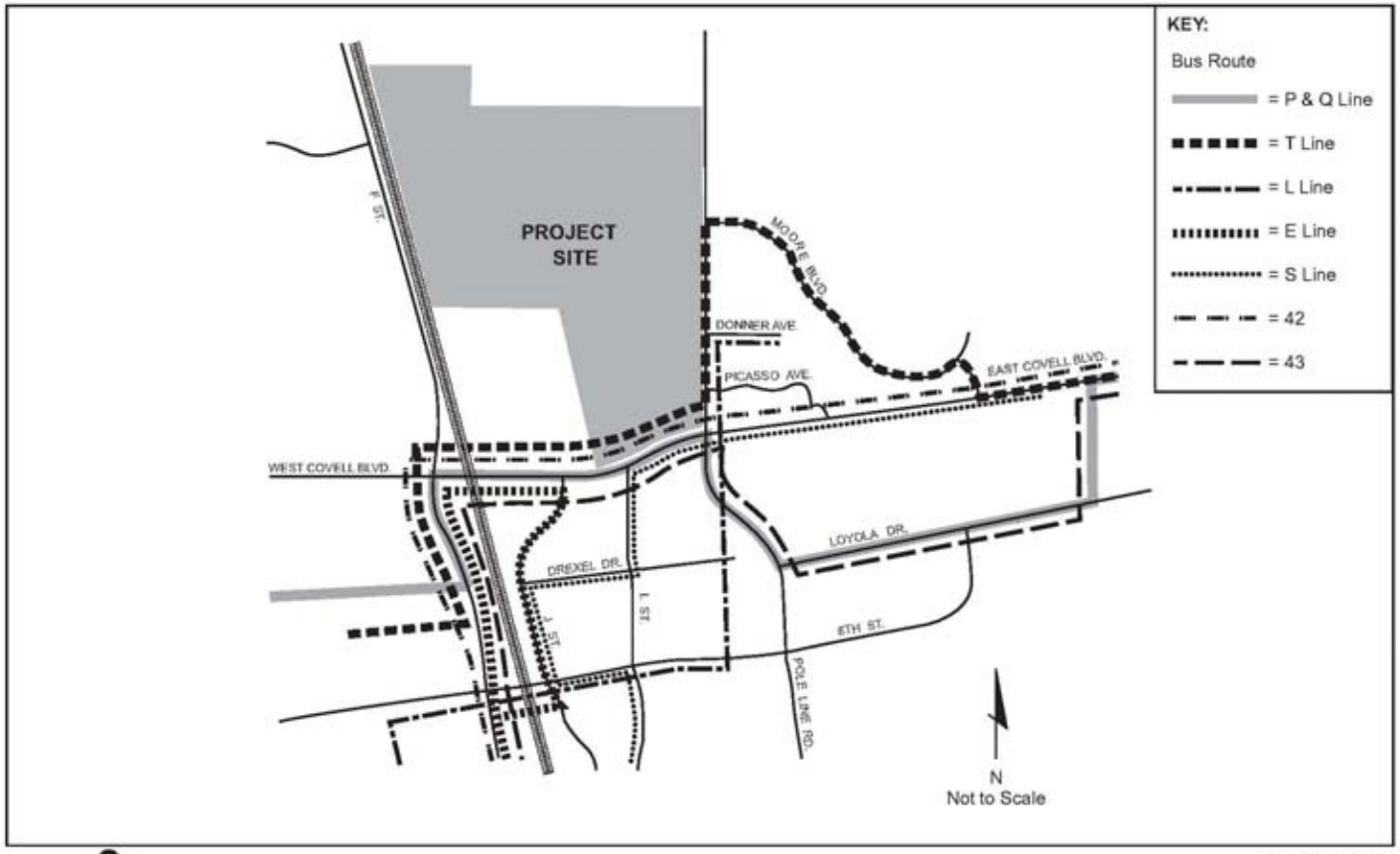
EXISTING BICYCLE FACILITIES
FIGURE 4.4-2



EXISTING TRANSIT LINES
FIGURE 4.4-3

available. One special fare category is University of California, Davis (UCD) Undergraduate students, who can show a valid ID instead of a cash fare, because they pay a portion of their quarterly ASUCD fee to Unitrans. Seniors (60+) may also ride free with an ID card available from the Senior Center.

Six (6) Unitrans routes (E, L, P, Q, S, and T) serve the project area:

- ***Route E*** traverses F Street, Covell Boulevard, and J Street. Route E stops at the Memorial Union Terminal at the Quad on the UCD campus. Near the project site, Route E stops on Covell Boulevard near the F Street and J Street intersections. Service is provided between approximately 7:00 a.m. and 11:00 p.m. on weekdays with headways between 25 and 30 minutes.

  Route L travels along B Street, Fifth Street, and Pole Line Road between Hutchison Drive (at the Art Building at UCD) and Donner Avenue at Green Meadows.

  Near the project site, Route L travels along Pole Line Road, with stops near Covell Boulevard, Picasso Avenue, and Donner Avenue. Service is provided between approximately 7:00 a.m. and 11:30 p.m. on weekdays with headways between 20 and 40 minutes.

- ***Routes P and Q*** travel in opposing loop routes around the City of Davis. Some of the roadways traversed are Lake Boulevard, Russell Boulevard, Fifth Street, Cowell Boulevard, Mace Boulevard, and Covell Boulevard.

  Near the project site, Routes P and Q traverse Covell Boulevard with stops near F Street, J Street, and Pole Line Road. Service is provided between approximately 7:00 a.m. and 11:00 p.m. on weekdays with headways between 25 and 30 minutes on each route.

- ***Route S*** provides service between Holmes Junior High School, Harper Junior High School and West and South Davis. Route S runs in the morning and in the afternoon. In the vicinity of the project, Route S traverses Covell Boulevard with a stop near Pole Line Road.

- ***Route T*** provides service between Davis High School and West and South Davis. Route T runs in the morning and in the afternoon. In the vicinity of the project, Route T traverses Covell Boulevard, with stops near F Street, J Street, and Pole Line Road, and traverses Pole Line Road with stops near Picasso Avenue, Donner Avenue, and Moore Boulevard.

Study Intersections

In general, the operational characteristics of a roadway network are defined by the operations of key intersections within the network. Intersections are typically considered to be the critical analysis locations, because conflicting traffic movements at intersections impose capacity constraints on the overall roadway network.

Twelve (12) study intersections were selected with input from City staff as locations to include in the transportation analysis:

1. F Street and Covell Boulevard
2. J Street and Covell Boulevard
3. L Street and Covell Boulevard
4. Pole Line Road and Covell Boulevard
5. Pole Line Road and Picasso Avenue
6. Pole Line Road and Donner Avenue
7. Pole Line Road and Moore Boulevard
8. Pole Line Road and Covell Village Road (Future)
9. L Street and Drexel Drive
10. L Street and Eighth Street
11. Pole Line Road and Loyola Drive
12. Pole Line Road and Eighth Street

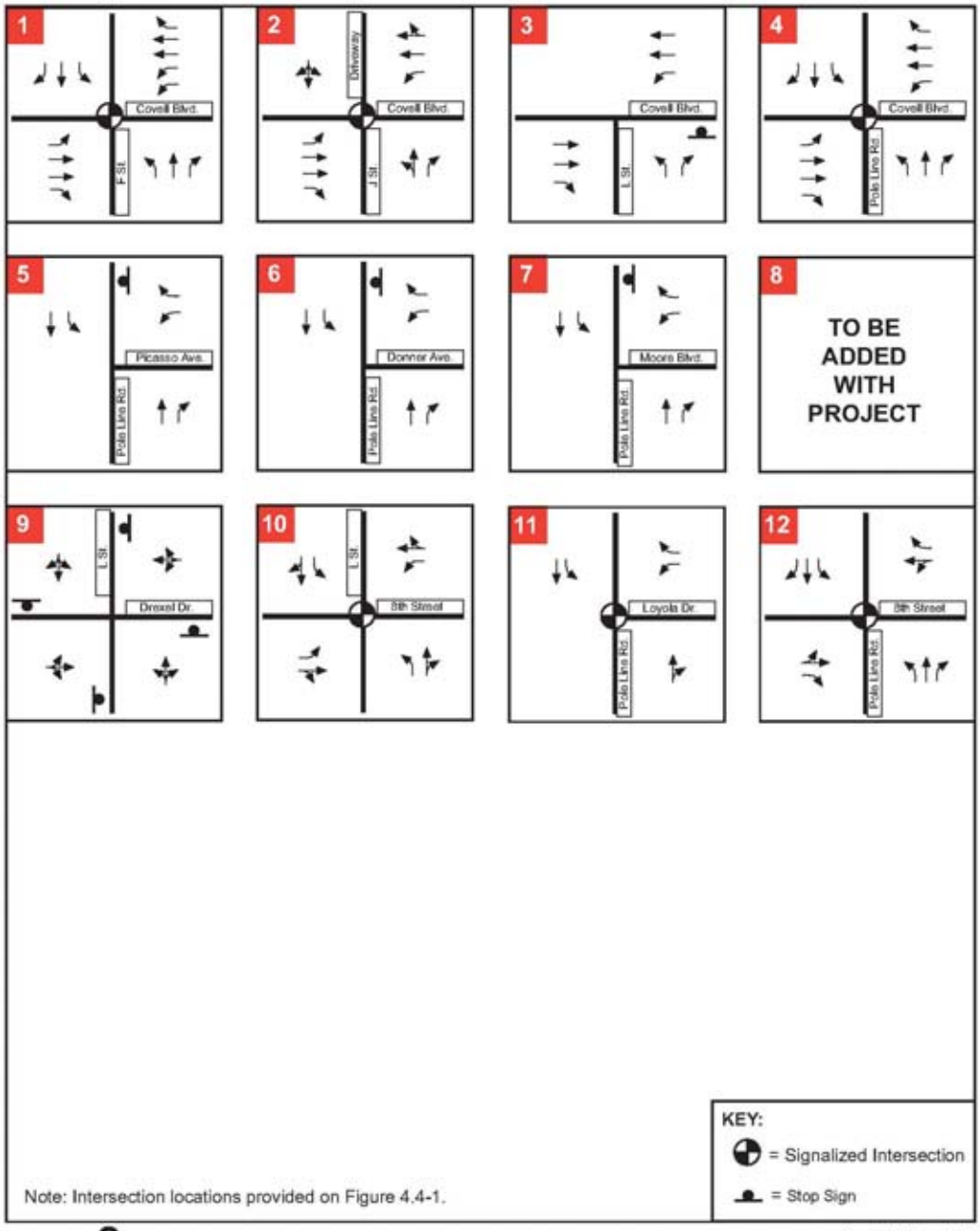
The locations of the study intersections are shown in Figure 4.4-1. Figure 4.4-4 illustrates the existing lane configurations and associated traffic control devices (i.e., traffic signals or stop signs) at each study intersection.

Existing Conditions Analysis

The following discussion includes a description of the criteria utilized to determine the existing conditions of the study intersections and roadways surrounding the project site.

Existing Intersection Traffic Volumes

Operations of the key intersections were analyzed under weekday morning (AM) and evening (PM) peak-hour traffic conditions. Peak conditions usually occur during the morning and evening commute periods between 7:00 a.m. and 9:00 a.m. and 4:00 p.m. and 6:00 p.m., respectively. Intersection operations were evaluated using the highest one-hour volume counted during each of these periods. Intersection turning movement counts were collected on October 12, 2004 (Intersections 11 and 12), September 22 and 23, 2004 (Intersections 9 and 10), and June 8, 2004 (Intersections 1 through 7). Figure 4.4-5 presents the existing AM and PM peak-hour turning movement counts at the study intersections.



Covell Village EIR

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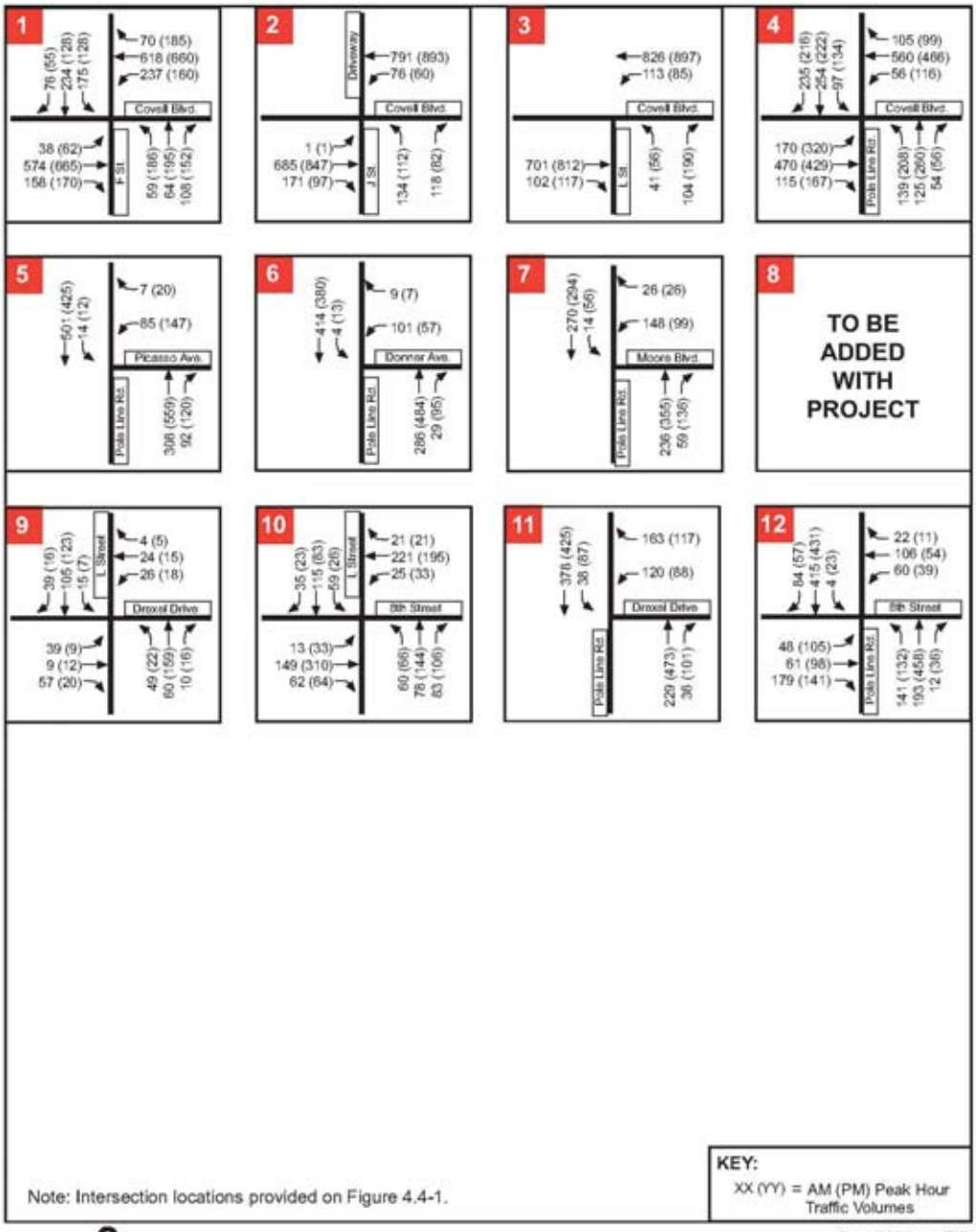
EXISTING CONDITIONS
INTERSECTION CONFIGURATIONS AND CONTROLS
FIGURE 4.4-4


1
76 (55)
234 (128)
175 (128)
70 (185)
618 (660)
237 (160)
Covell Blvd.
I-5
38 (62)
574 (665)
158 (170)
59 (186)
64 (195)
106 (152)
2
Driveway
791 (893)
76 (60)
Covell Blvd.
J St.
1 (1)
685 (847)
171 (97)
134 (112)
118 (82)
3
826 (897)
113 (85)
Covell Blvd.
L St.
701 (812)
102 (117)
41 (56)
104 (190)
4
205 (216)
264 (222)
97 (134)
105 (99)
560 (466)
56 (116)
Covell Blvd.
Pole Line Rd.
170 (320)
470 (429)
115 (167)
139 (208)
125 (260)
54 (56)
5
501 (425)
14 (12)
7 (20)
85 (147)
Picasso Ave.
Pole Line Rd.
306 (559)
92 (120)
6
414 (380)
4 (13)
9 (7)
101 (57)
Donner Ave.
Pole Line Rd.
286 (484)
29 (95)
7
270 (294)
14 (56)
26 (26)
148 (99)
Moore Blvd.
Pole Line Rd.
236 (355)
59 (136)
8
TO BE ADDED WITH PROJECT
9
39 (16)
105 (123)
15 (7)
L Street
4 (5)
24 (15)
26 (18)
Drexel Drive
39 (9)
9 (12)
57 (20)
49 (22)
60 (159)
10 (16)
10
35 (23)
115 (83)
59 (26)
L Street
21 (21)
221 (195)
25 (33)
8th Street
13 (33)
149 (310)
62 (64)
60 (66)
78 (144)
83 (106)
11
376 (425)
38 (67)
163 (117)
120 (88)
Drexel Drive
Pole Line Rd.
229 (473)
36 (101)
12
84 (57)
415 (431)
4 (23)
22 (11)
106 (54)
60 (39)
8th Street
Pole Line Rd.
48 (105)
61 (98)
179 (141)
141 (132)
193 (458)
12 (36)
Note: Intersection locations provided on Figure 4.4-1.
KEY:
XX (YY) = AM (PM) Peak Hour Traffic Volumes
Covell Village EIR
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December 2004
2068-4.4-5
EXISTING CONDITIONS
PEAK HOUR INTERSECTION VOLUMES
FIGURE 4.4-5

Existing Roadway Volumes

In addition to peak hour intersection counts, daily roadway volumes were gathered from the City's database for the arterials and collectors in the vicinity of the project site. Table 4.4-1 presents daily roadway volumes for segments of Covell Boulevard, Pole Line Road, F Street, and L Street.

Table 4.4-1
Roadway Segment Volumes – Existing Conditions

Roadway Segment	Facility Class	Lanes	Volume (Bi-Directional)
Covell Boulevard, between F Street and J Street	Arterial	4	23,000
Covell Boulevard, between J Street and L Street	Arterial	4	20,300
Covell Boulevard between L Street and Pole Line Road	Arterial	4	19,700
Covell Boulevard, east of Pole Line Road	Arterial	4	15,300
Pole Line Road, north of Covell Boulevard	Arterial	2	11,800
Pole Line Road, between Covell Boulevard and Eighth Street	Arterial	2	10,600
Pole Line Road, south of Eighth Street	Arterial	2	14,700
L Street, between Covell Boulevard and Eighth Street	Collector	2	3,400
F Street, between Covell Boulevard and Eighth Street.	Arterial	2	9,400

Source: Fehr & Peers, October 2004

Intersection and Roadway Levels of Service

The operations of roadway facilities are described using the *level of service* concept. Level of service (LOS) is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six (6) levels are defined from LOS A, as the best operating conditions, to LOS F, as the worst operating conditions. LOS E represents "at capacity" operations. When volumes exceed capacity, heavy congestion results and operations are designated as LOS F.

Signalized Intersection Analysis

The peak hour operations of the signalized study intersections were evaluated using the methodology in Chapter 16 of the *2000 Highway Capacity Manual (HCM)* (Transportation Research Board). This methodology correlates the LOS to the average control delay experienced at the intersection in seconds per vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. The average delay for the signalized intersections is correlated to a level of service designation as presented in Table 4.4-2.

Table 4.4-2
Signalized Intersection Level of Service Definitions

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

Source: Transportation Research Board, *Highway Capacity Manual*, 2000.

Unsignalized Intersection Analysis

For unsignalized (four-way stop-controlled and side-street stop-controlled) intersections, the level of service calculations were conducted using the methodology in Chapter 17 of the *2000 Highway Capacity Manual*. The LOS rating is based on the average control delay expressed in seconds per vehicle. At all-way stop-controlled intersections, LOS is based on the average delay experienced on all approaches. At side-street stop-controlled intersections, level of service is calculated for the stopped movements only. Typically

the movement (or lane if more than one movement occurs in a lane) with the worst LOS rating is reported. Table 4.4-3 summarizes the relationship between delay and LOS for unsignalized intersections.

Table 4.4-3
Unsignalized and Roundabout Intersection Level of Service Definitions

Level of Service	Description	Average Control Delay in Seconds/Vehicle
A	Little or no delay.	≤ 10
B	Short traffic delays.	> 10 and ≤ 15
C	Average traffic delays.	> 15 and ≤ 25
D	Long traffic delays.	> 25 and ≤ 35
E	Very long traffic delays.	> 35 and ≤ 50
F	Extreme traffic delays with intersection capacity exceeded.	> 50

Source: Transportation Research Board, *Highway Capacity Manual*, 2000.

Roundabout Analysis

Roundabouts were analyzed using the guidelines provided by the Federal Highway Administration's *Roundabouts: An Informational Guide* (2000). Average control delay is based on the same methodology as unsignalized intersections. LOS criteria are the same as unsignalized intersections as shown in Table 4.4-3.

The TRAFFIX analysis software was used to calculate intersection delays using the methods described above. The City of Davis General Plan states that LOS E or better is acceptable for intersection and segment operations on arterials and collectors during the peak hours.

Roadway Segment Analysis

A level of service analysis was conducted by comparing existing and projected roadway segment daily volumes surrounding the project site.

LOS measures differ by roadway type because a driver's perceptions and expectations vary by roadway type. In urban areas, arterial and collector roadways do not typically operate at LOS A or LOS B conditions. Table 4.4-4 describes the characteristics of each LOS designation likely to occur within the study area. Table 4.4-5 presents roadway segment volume thresholds and corresponding service levels used to assess daily roadway conditions in this Draft EIR.

Table 4.4-4 **Level of Service Definitions for Roadway Segments**	
Level of Service	**Description of Operation**
C	Traffic flow is stable; however, ability to change lanes may be restricted by other vehicles. There may be noticeable vehicle queues approaching signalized intersections along the road segment.
D	Traffic flow becomes less stable. Small increases in traffic levels can result in substantial increases in congestion and decreases in travel speed. Delays at signalized intersections along the road segment reach levels that may begin to be intolerable to some drivers.
E	Significant delays and reduction of travel speeds along the road segment occurs. Average travel speeds decrease to about 30 percent of those during uncongested traffic flow.
F	Extremely low travel speeds prevail along the road segment. Intersection congestion is likely at signalized intersections, with high delays, high volumes, and extensive queuing. Conditions are intolerable for most drivers.
Sources: Fehr & Peers, October 2004; Transportation Research Board, 2000 *Highway Capacity Manual.*	

Table 4.4-5 **Roadway Segment Service Volume Level of Service Thresholds (Bi-Directional)**				
Facility Class	**Lane Count**	**LOS C**	**LOS D**	**LOS E**
Arterial	2 lanes	10,800	15,600	17,000
	4 lanes	24,000	32,000	33,800
	6 lanes	38,000	48,200	50,800
	8 lanes	52,200	64,400	67,800
Collector	2 lanes	9,400	11,900	12,500
	4 lanes	19,000	24,000	25,400
Sources: Fehr & Peers, October 2004; Transportation Research Board, 2000 *Highway Capacity Manual*				

Mace Boulevard Overcrossing Analysis

This study also evaluates the impacts of the project on the Mace Boulevard overcrossing. The overcrossing was reconstructed in 2001. Its six-lane cross-section includes two southbound lanes, two northbound left-turn lanes (for access to westbound Interstate 80), and two northbound through lanes. The outside southbound lane also provides access to the eastbound loop on-ramp. Upon the request of Public Works staff, this study evaluates operations on Mace Boulevard in the southbound direction at the loop on-ramp to eastbound Interstate 80. The purpose of the analysis is to assess whether an auxiliary

lane to the on-ramp would be needed in the future. Accommodating the lane would require that the freeway overcrossing and railroad overpass be widened.

A volume-to-capacity analysis was conducted to evaluate the current configuration and the need for widening . Two parameters were considered: (1) the volume of traffic during the peak hour in the outside southbound lane of the overcrossing (which serves traffic headed to the loop on-ramp as well as traffic headed to Chiles Road); and (2) the volume of traffic during the peak hour on the loop on-ramp. The ideal design capacity for a single travel lane is 1,900 vehicles per hour (Transportation Research Board, 2000 Highway Capacity Manual). There are many factors (lane width, shoulder width, and composition of traffic, for example) that reduce the capacity of a given roadway. For this analysis, a design capacity of 1,850 vehicles per hour (vph) was assumed for the right-most southbound travel lane, which incorporates a slight reduction in capacity due to truck traffic. The design capacity of a loop on-ramp also varies depending on the geometric design and composition of traffic. The maximum design capacity of a loop on-ramp is 1,500 vph (Caltrans, Highway Design Manual, 5th Edition). Also to account for some truck traffic, a design capacity of 1,450 vph was assumed for this analysis.

The method described above is intended to provide a planning-level analysis. A more detailed analysis would be needed to fully evaluate the loop on-ramp in conjunction with adjacent intersections and the freeway.

Existing Intersection Levels of Service

The existing lane configurations and the peak-hour turning movement volumes were used to calculate the levels of service for the study intersections during the AM and PM peak hours. The results of the LOS analysis under existing conditions are presented in Table 4.4-6.

The results of the analysis indicate that all study intersections are operating at an acceptable level during the AM and PM peak hours under existing conditions. It should be noted that the Picasso Avenue stop-controlled approach to Pole Line Road currently operates at LOS E during the PM peak hour, and the L Street stop-controlled approach to Covell Boulevard operates at LOS D during both peak hours. While these intersections do currently meet the City's criteria for acceptable operations, the intersections are operating at or near capacity.

Each unsignalized intersection was also checked against the Manual on Uniform Traffic Control Device's (MUTCD) peak hour signal warrant. Currently, the only intersection with volumes satisfying the peak hour signal warrant is Covell Boulevard/L Street.

Table 4.4-6
Intersection Level of Service Summary – Existing Conditions

Intersection	Traffic Control	Peak Hour	Delay	LOS
1. F Street/Covell Boulevard	Signal	AM	20.3	C
		PM	20.3	C
2. J Street/Covell Boulevard	Signal	AM	10.7	B
		PM	9.6	A
3. L StreetCovell Boulevard	Side Street Stop [a]	AM	33.6	D
		PM	29.1	D
4. Pole Line Road/Covell Boulevard	Signal	AM	22.8	C
		PM	25.0	C
5. Pole Line Road/Picasso Avenue	Side Street Stop [a]	AM	21.0	C
		PM	43.2	E
6. Pole Line Road/Donner Avenue	Side Street Stop [a]	AM	19.9	C
		PM	19.7	C
7. Pole Line Road/Moore Boulevard	Side Street Stop [a]	AM	16.9	C
		PM	18.1	C
8. Pole Line Road/Covell Village Road	*With Project Only*			
9. L Street/Drexel Drive	All Way Stop	AM	8.5	A
		PM	8.2	A
10. L Street/Eighth Street	Signal	AM	10.3	B
		PM	10.5	B
11. Pole Line Road/Loyola Drive	Signal	AM	11.6	B
		PM	9.5	A
12. Pole Line Road/Eighth Street	Signal	AM	14.3	B
		PM	14.4	B

Source: Fehr & Peers, December 2004.
Notes:
a. Delay and LOS for the worst movement or approach are reported.

Existing Roadway Segment Levels of Service

The results for the roadway segments are presented in Table 4.4-7. As shown, all of the studied roadway segments currently operate at an acceptable LOS D or better based on a comparison of their traffic volumes to theoretical LOS thresholds based on facility type.

Table 4.4-7 **Roadway Segment Level of Service Summary – Existing Conditions**				
Roadway Segment	**Facility Class**	**Lanes**	**Volume (Bi-Directional)**	**LOS**
Covell Boulevard, between F Street and J Street	Arterial	4	23,000	C
Covell Boulevard, between J Street and L Street	Arterial	4	20,300	C
Covell Boulevard between L Street and Pole Line Road	Arterial	4	19,700	C
Covell Boulevard, east of Pole Line Road	Arterial	4	15,300	C
Pole Line Road, north of Covell Boulevard	Arterial	2	11,800	D
Pole Line Road, between Covell Boulevard and Eighth Street	Arterial	2	10,600	C
Pole Line Road, south of Eighth Street	Arterial	2	14,700	D
L Street, between Covell Boulevard and Eighth Street	Collector	2	3,400	C
F Street, between Covell Boulevard and Eighth Street.	Arterial	2	9,400	C
Source: Fehr & Peers, October 2004				

Existing Operations of Mace Boulevard Overcrossing

Counts were taken on the Mace Boulevard overcrossing for a 48-hour period on November 17 and 18, 2004, to measure southbound traffic volumes. The highest peak hour occurred on Wednesday, November 17, 2004, between 8:00 AM and 9:00 AM. A total of 1,269 vehicles were counted in the outside southbound lane. Of those, 747 vehicles used the loop on-ramp to access eastbound Interstate 80. As described earlier in this section, design capacities of 1,850 vph for the overcrossing lane and 1,450 vph for the on-ramp were used in this analysis. Table 4.4-8 summarizes the results. Currently, the outside southbound travel lane and the loop on-ramp are at 69% and 52% of their design capacities, respectively, during the AM peak hour.

Table 4.4-8 **Mace Boulevard Overcrossing – Existing Conditions AM Peak Hour**			
Facility	**ExistingVolume (vph)**	**Capacity (vph)**	**Volume/Capacity (%)**
Southbound travel lane	1,269	1,850	69%
Loop on-ramp	747	1,450	52%

Source: Fehr & Peers, December 2004

It should be noted that of the two southbound travel lanes that approach Chiles Road, the majority (about 70 percent) of traffic uses the outside lane. This is likely because motorists are turning right on Chiles Road or just past Chiles Road and, thus, prefer to travel in the outside lane across the overcrossing.

REGULATORY CONTEXT

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

Local Regulations

City of Davis General Plan

The following are applicable goals and policies from the City of Davis General Plan related to transportation and circulation:

Goal MOB 1.	Provide attractive streets designed to serve a broad spectrum of travel modes as well as automobiles. A multi-modal street is illustrated in Figure 18.
Policy MOB 1.1	Provide and maintain a roadway network to meet the needs of vehicular traffic in Davis.
Policy MOB 1.2	As part of the initial project review for any new project, the City Engineer may determine that a project-specific traffic study shall be prepared. Studies shall identify impacted roadway segments and intersections and recommend mitigation measures designed to reduce these impacts to acceptable levels.
Policy MOB 1.3	Encourage the use of alternative transportation modes.
Policy MOB 1.4	Create a network of street and bicycle facilities that provides for multiple routes between various origins and destinations.
Policy MOB 1.5	Develop a traffic calming program and implement traffic calming measures, where appropriate and feasible, to minimize the impacts on the use of local streets by vehicular traffic and to maintain, or as necessary enhance, livability of the neighborhoods. Consider traffic calming measures along collector and minor arterial streets, where appropriate and feasible, to slow speeds where needed. Examples of assorted traffic claming treatments are shown in Figure 20.
Policy MOB 1.6	Build new intersections and redesign existing intersections to maximize pedestrian and bike convenience and safety relative to automobile needs.

Policy MOB 1.7	Adopt development policies to improve the appearance of each major aterial street, as illustrated in Figure 21.
Policy MOB 1.9	Implement the following specific projects to improve traffic flow and increase the use of non-vehicular transportation modes.
Policy MOB 1.11	Promote the use of electric vehicles and other low-polluting vehicles, including neighborhood Electric Vehicles.
Goal MOB 2	Balance the needs to provide adequate parking for residential and commercial developments with the desire to limit automobile travel.
Policy MOB 2.1	Use parking as a transportation system management technique.
Goal MOB 3	Increase walking and the use of non-polluting forms of transportation, including bicycles.
Policy MOB 3.1	Develop continuous trails and bikeway network for both recreation and transportation that serves the Core, neighborhoods, employment centers, schools and other institutions, minimizes conflicts between pedestrian, bicyclists, equestrians, and automobiles, and that minimizes impacts on wildlife. Greenbelts and Greenstreets should serve as the backbone of much of this network. Figure 23 shows the City's existing and planned primary bicycle network.
Policy MOB 3.2	Continue to build transportation improvements specifically targeted at bicycles.
Policy MOB 3.3	Provide pedestrian and bicycle amenities.
Policy MOB 3.4	Attempt to provide safe and convenient pedestrian access to all areas of the city.
Policy MOB 3.5	Develop a system of trails at the periphery of the city and within the city for recreational use and to allow walkers and bicyclist ot reach open space and natural areas.
Goal MOB 4	Reduce automobile use by improving transit service and encouraging transit use.
Policy MOB 4.1	Facilitate the provision of convenient, frequent, dependable and efficient scheduled transit and demand responsive transit for Davis residents.
Policy MOB 4.2	Make transit more available and accessible to students and youth.
Policy MOB 4.3	Require new development designs that maximize transit potential.
Goal MOB 5	Develop alternative transportation solutions which will help alleviate peak hour congestion and improve air quality.

Policy MOB 5.1	Develop and maintain a trip-reduction program designed to achieve a 10-percent reduction by 2010 in motor vehicle trips per capita relative to 1987 levels, or higher if so required by the US Environmental Protection Agency, the California Air Resources Board, or the Yolo-Solano Air Quality Management Districts.
Policy MOB 5.2	Develop a student trip reduction program with DJUSD.
Goal MOB 6	Increase safety of and decrease noise and air pollution from transportation throughout the city.
Policy MOB 6.1	Safety and noise concerns should take priority over traffic flow in roadway planning.
Policy MOB 6.2	Cooperate with the school district in promoting safe and convenient student bicycle/pedestrian routes between school and home.

Impacts and Mitigation Measures

The standards of significance, methods of analysis, and traffic impacts and mitigation measures are summarized below for the Proposed Project and the High Density Alternative, where applicable.

Standards of Significance

According to State CEQA Guidelines, a project results in a significant impact if it causes an increase in traffic that is substantial and adverse in relation to the traffic load and capacity of the existing street system. This standard of significance relates to automobile traffic only and does not address the potential effects on other travel modes including transit, bicycle, and pedestrian facilities. In order to evaluate a broad range of travel characteristics, the following standards of significance apply to the transportation impacts discussed in this Draft EIR.

Traffic Impacts

According to the *City of Davis General Plan*, intersection and roadway operations at LOS E or better are acceptable. For the purposes of this EIR analysis, potentially significant traffic impacts at intersections are defined when the addition of project traffic causes any of the following:

- For signalized intersections, cause overall intersection operations to deteriorate from an acceptable level (LOS E or better) to an unacceptable level (LOS F);
- For unsignalized intersections, cause the worst-case movement (or average of all movements for all-way stop-controlled intersections) to deteriorate from an

acceptable level (LOS E or better) to an unacceptable level (LOS F) *and* meet MUTCD peak hour signal warrant;[1]

- For signalized intersections, exacerbate unacceptable (LOS F) operations by increasing an intersection's average delay by five seconds or more;
- For unsignalized intersections that operate unacceptably (LOS F) and meet MUTCD's peak hour signal warrant without the project, exacerbate operations by increasing the overall intersection's volume by more than one percent;
- For unsignalized intersections that operate unacceptably but do not meet MUTCD's peak hour signal warrant without the project, add sufficient volume to meet the peak hour signal warrant;
- Cause the operating level of a roadway segment to deteriorate from LOS E (or better) to LOS F; or
- Increase traffic volume on a roadway segment already operating at LOS F without the project by more than five percent.

Transit, Bicycle, and Pedestrian Impacts

The Proposed Project is considered to result in a potentially significant transit, bicycle, and/or pedestrian impact if:

- The project conflicts with existing, planned, or possible future transit, bicycle, and/or pedestrian facilities and services;
- The project conflicts or creates demand for public transit services above that which is provided, or planned;
- The path of travel between the project site and transit stops would not meet current California Title 24 handicap accessibility standards; or
- The project does not provide connections to bicycle and pedestrian circulation systems of the surrounding area.

Additional Impacts

The Proposed Project is considered to result in a potentially significant impact if any of the following conditions occur:

[1] The use of the peak hour signal warrant is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. The traffic analysis presented in this document estimates future development-generated traffic compared against a sub-set (peak hour warrant) of the standard traffic signal warrants recommended in the Federal Highway Administration *Manual on Uniform Traffic Control Devices* and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions. The City of Davis should undertake regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

- Proposed parking does not satisfy required parking;
- The site plan does not accommodate truck maneuvers;
- The project does not provide for adequate emergency vehicle access and on-site circulation; or
- Construction-related traffic causes significant intersection impacts as defined by the traffic system criteria described above.

Method of Analysis

The impact analysis considered the roadway, transit, bicycle, and pedestrian components of the transportation system. The specific method of analysis for roadway system impact analysis is described below. For the transit, bicycle, and pedestrian systems impact analysis, the Proposed Project was evaluated for consistency with existing and planned service and facilities and well as consistency with related policies of the City of Davis and the YCTD.

Proposed Project

Existing Plus Proposed Project Scenario

Traffic projections for the Proposed Project were estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In the first step, the amount of traffic added to the surrounding roadway system was estimated. In the second step, the directions the trips use to approach and depart the site were estimated. In the third step, the trips were assigned to specific street segments and intersection turning movements.

Trip Generation

Trip generation estimates for the Proposed Project were developed using two sources: (1) City of Davis trip generation rates as documented in the Davis Travel Demand Model Development Report (Fehr & Peers, March 2003), and (2) Institute of Transportation Engineers (ITE) *Trip Generation* (7th Edition) manual. The Proposed Project trip generation assumes that the project will contain the following uses:

Within Village Center	Outside Village Center
• 60 apartments	• 893 single-family dwelling units
• 20 live/work residence	• 289 multi-family dwelling units
• 58,200 square feet of retail space	• 185 senior dwelling units
• 43,300 square feet of office space	• Senior core care facility with 130 beds
• 9,700-square foot church	• Hospice with 16 beds
• 30,000-square foot athletic club	• 30 co-housing units
• 11,300 square feet of meeting space	• 24 6-plex dwelling units
• 2,800-square foot day care center	• 600 student elementary school
• 58-room hotel	• 3,000 square foot pre-school

• 6,000 square feet of restaurant space	• 14 live/work residences
• Gas station with a 3,600-square foot market	

Table 4.4-9 presents the trip generation rates used for the Proposed Project and Table 4.4-10 presents the trip estimates. With the mix of uses proposed for the project, internalization of trips would occur. For example, a resident in Covell Village may choose to visit a restaurant in the Village Center rather than traveling off-site. Thus, this vehicle trip remains within the project site and does not continue to the public transportation system. A 10 percent internalization factor was used to account for retail trips coming from and going to residential land uses within Covell Village based on internal capture rates published in ITE's *Trip Generation Handbook*. To capture internal trips between office and residential and between office and retail, internalization factors of 2 and 3 percent were used based on ITE methodology. Internalization between residential and healthclub land uses was estimated to be 10 percent. For school, pre-school, and daycare trips, a 45 percent internalization factor was used based on prior studies conducted by Fehr & Peers. Linked trips, which are those from the residential area that travel to the school and then travel beyond Covell Village (e.g., parents dropping their children off at school and continuing to work), were assumed to be 15 percent of the total estimated school, pre-school, and daycare trips. Trip estimates were also reduced to account for pass-by trips. Pass-by trips are trips that are not net new trips generated from the project, but diverted trips made by motorists passing by the project site on their way to another destination. Pass-by rates for the PM peak hour of 34 percent and 43 percent were used for retail and restaurant land uses, respectively. For the gas station, an AM pass-by rate of 62 percent and a PM pass-by rate of 56 percent was used based on ITE *Trip Generation Handbook* data.

Table 4.4-9
Covell Village Proposed Project Trip Generation Rates

Land Use	Units	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Single Family	d.u.	0.26	0.77	1.03	0.89	0.52	1.41	12.81
Apartments	d.u.	0.10	0.38	0.48	0.35	0.19	0.54	5.96
Senior Homes	d.u.	0.08	0.12	0.20	0.16	0.10	0.26	3.71
Senior Core Care Facility	beds	0.09	0.05	0.14	0.10	0.12	0.22	2.66
Hospice	beds	0.09	0.05	0.14	0.10	0.12	0.22	2.66
Co-housing	d.u.	0.08	0.40	0.48	0.36	0.18	0.54	5.96
6-plex Cluster Homes	d.u.	0.08	0.40	0.48	0.36	0.18	0.54	5.96
School	students	0.17	0.08	0.24	0.04	0.04	0.08	1.02
Pre-school	ksf	6.78	6.01	12.79	6.19	6.99	13.18	79.26
Multifamily	d.u.	0.08	0.40	0.48	0.36	0.18	0.54	5.96
Live/Work	d.u.	0.29	0.41	0.71	0.24	0.41	0.65	6.50
Retail	ksf	0.63	0.39	1.03	3.61	3.91	7.53	42.94
Office	ksf	2.16	0.29	2.45	0.39	1.89	2.28	17.50
Church	ksf	0.39	0.33	0.72	0.34	0.32	0.66	9.11
Health Club	ksf	0.47	0.65	1.12	2.07	1.98	4.05	40.50
Meeting	ksf	0.99	0.63	1.62	0.48	1.16	1.64	22.80
Daycare	ksf	6.78	6.01	12.79	6.19	6.99	13.18	79.26
Hotel	rooms	0.34	0.22	0.56	0.31	0.28	0.59	2.52
Restaurant	ksf	27.09	26.02	53.11	18.01	16.63	34.64	496.12
Gas Station	ksf	39.62	38.06	77.68	48.19	48.19	96.37	963.70

Notes: d.u. = dwelling units; ksf= 1,000 square feet
Source: Institute of Transportation Engineers' (ITE) *Trip Generation* (7th Edition); Fehr & Peers

Table 4.4-10
Covell Village Proposed Project Trip Generation Estimates

Land Use	Units		AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Single Family	893	d.u.	229	687	916	793	466	1,259	11,447
Apartments	242	d.u.	23	92	116	85	46	130	1,443
Senior Homes	185	d.u.	14	23	37	29	19	48	686
Senior Core Care Facility	130	beds	12	6	18	13	16	29	346
Hospice	16	beds	1	1	2	2	2	4	43
Co-housing	30	d.u.	2	12	14	11	5	16	179
6-plex Cluster Homes	24	d.u.	2	9	11	9	4	13	143
School	600	stud.	101	46	147	23	26	49	612
Pre-school	3.0	ksf	20	18	38	19	21	40	238
Multifamily (other land ded.)	47	d.u.	4	19	22	17	8	25	280
Live/Work Residence	14	d.u.	4	6	10	3	6	9	91
Village Center									
Apartments	60	d.u.	6	23	29	21	11	32	358
Live/Work Residence	20	d.u.	6	8	14	5	8	13	130
Retail	58.2	ksf	37	23	60	210	228	438	2,499
Office	43.3	ksf	93	13	106	17	82	99	758
Church	9.7	ksf	4	3	7	3	3	6	88
Health Club	30.0	ksf	14	19	34	62	60	122	1,215
Meeting	11.3	ksf	11	7	18	5	13	19	258
Daycare	2.8	ksf	19	17	36	17	20	37	222
Hotel	58	rooms	20	13	32	18	16	34	146
Restaurant	6.0	ksf	163	156	319	108	100	208	2,977
Gas Station	3.6	ksf	143	137	280	173	173	347	3,469
Village Center Subtotal			*514*	*419*	*934*	*640*	*714*	*1,354*	*12,119*
Total Trip Generation			928	1,338	2,266	1,643	1,332	2,975	27,627
Internalization, Pass-by, and Linked-Trip Reductions									
Retail/Restaurant to Residential Internalization (10%)			*20*	*18*	*38*	*32*	*33*	*65*	*548*
Residential to Retail/Restaurant Internalization			*18*	*20*	*38*	*33*	*32*	*65*	*548*
Office to Residential Internalization (2%)			*2*	*0*	*2*	*0*	*2*	*2*	*15*
Residential to Office Internalization			*0*	*2*	*2*	*2*	*0*	*2*	*15*
Retail/Restaurant to Office Internalization (3%)			*6*	*5*	*11*	*10*	*10*	*19*	*164*
Office to Retail/Restaurant Internalization			*5*	*6*	*11*	*10*	*10*	*19*	*164*
Retail pass-by (34% PM only)			-	-	-	*74*	*74*	*149*	*1,489*
Restaurant pass-by (43% PM only)			-	-	-	*45*	*45*	*89*	*894*
Gas Station pass-by (62% AM; 56% PM)			*87*	*87*	*173*	*97*	*97*	*194*	*1,943*
School to Residential Internalization (45%)			*46*	*20*	*66*	*10*	*12*	*22*	*275*
Residential to School Internalization			*20*	*46*	*66*	*12*	*10*	*22*	*275*
Residential/School Linked Trips (15%)			*11*	*11*	*22*	*4*	*4*	*8*	*92*
Pre-school to Residential Internalization (45%)			*9*	*8*	*17*	*8*	*9*	*18*	*107*
Residential to Pre-school Internalization			*8*	*9*	*17*	*9*	*8*	*18*	*107*
Residential/Pre-school Linked Trips (15%)			*3*	*3*	*6*	*3*	*3*	*6*	*36*
Daycare to Residential Internalization (45%)			*9*	*8*	*16*	*8*	*9*	*17*	*100*
Residential to Daycare Internalization			*8*	*9*	*16*	*9*	*8*	*17*	*100*
Residential/Daycare Linked Trips (15%)			*3*	*3*	*6*	*3*	*3*	*6*	*33*
Health Club to Residential Internalization (10%)			*1*	*2*	*3*	*6*	*6*	*12*	*122*
Residential to Health Club Internalization			*2*	*1*	*3*	*6*	*6*	*12*	*122*
Total Reduction			***258***	***257***	***515***	*380*	*381*	*761*	***7,148***
TOTAL ADDED TRIP GENERATION			**670**	**1,081**	**1,751**	**1,263**	**952**	**2,214**	**20,479**

Therefore, applying the trip rates discussed above, the Proposed Project is estimated to generate 1,751 new AM peak hour trips (670 inbound/1,081 outbound), and 2,214 new PM peak hour trips (1,263 inbound/952 outbound). A total daily trip generation of 20,479 new trips due to the Proposed Project was estimated.

Trip Distribution

The directions of approach and departure for project trips were based on a distribution pattern developed using the Davis Travel Demand Model. This method considers roadway capacity, trip type, and the locations of major attractions and sources of trip productions. The trip distribution pattern is presented in Figure 4.4-6 (Note: a different trip distribution pattern, discussed later in this section, was developed for cumulative conditions that assumes development of the ConAgra [formerly Hunt Wesson] site).

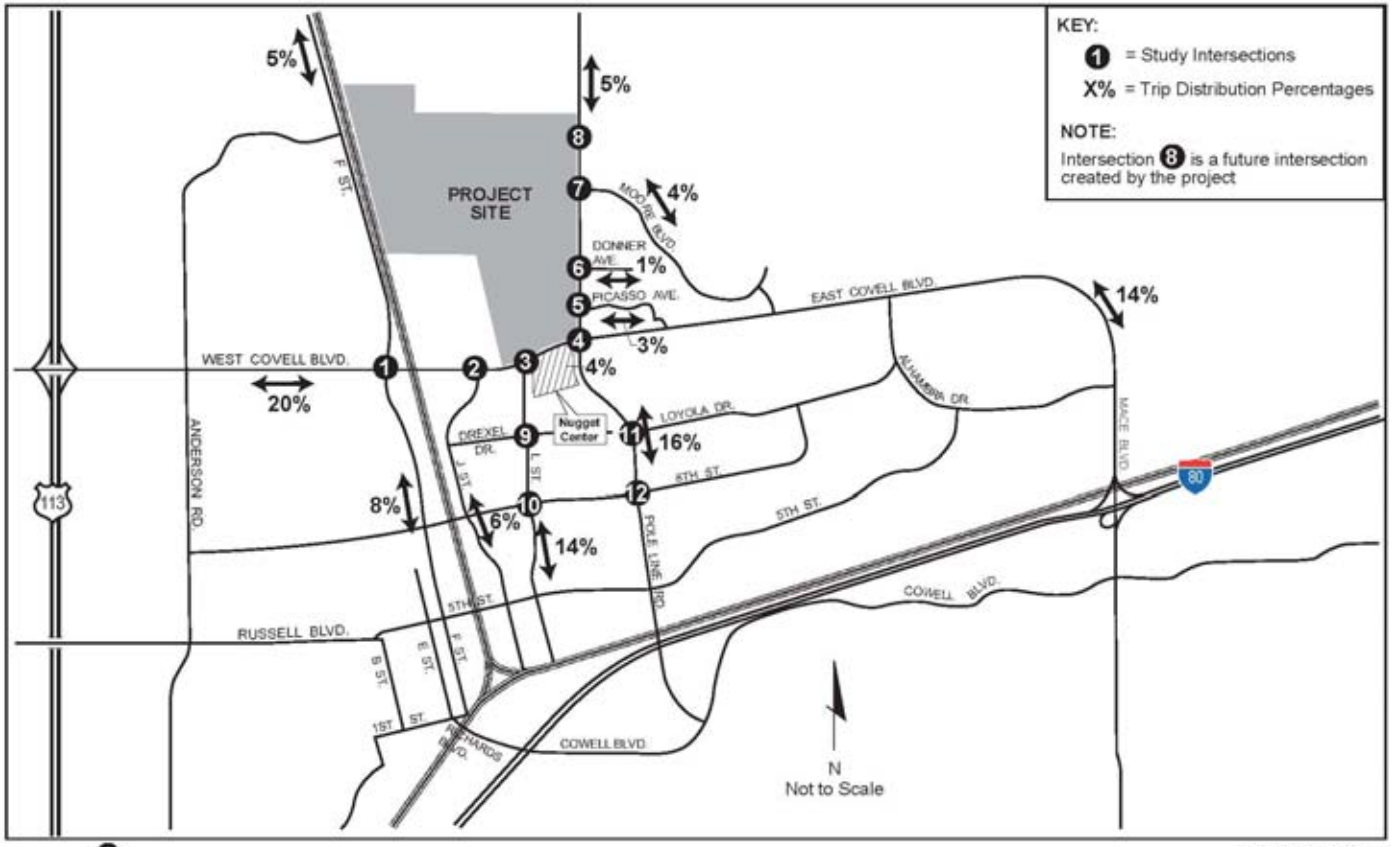
In general, approximately 20 percent of the project traffic is distributed to the west of F Street on Covell Boulevard; 14 percent is distributed to the east on Covell Boulevard; 44 percent is distributed to the south on Pole Line Road, F Street, J Street, and L Street; 10 percent is distributed to the north via Pole Line Road and F Street; and 12 percent is distributed locally on Moore Boulevard, Donner Avenue, Picasso Avenue, and Oak Tree Plaza.

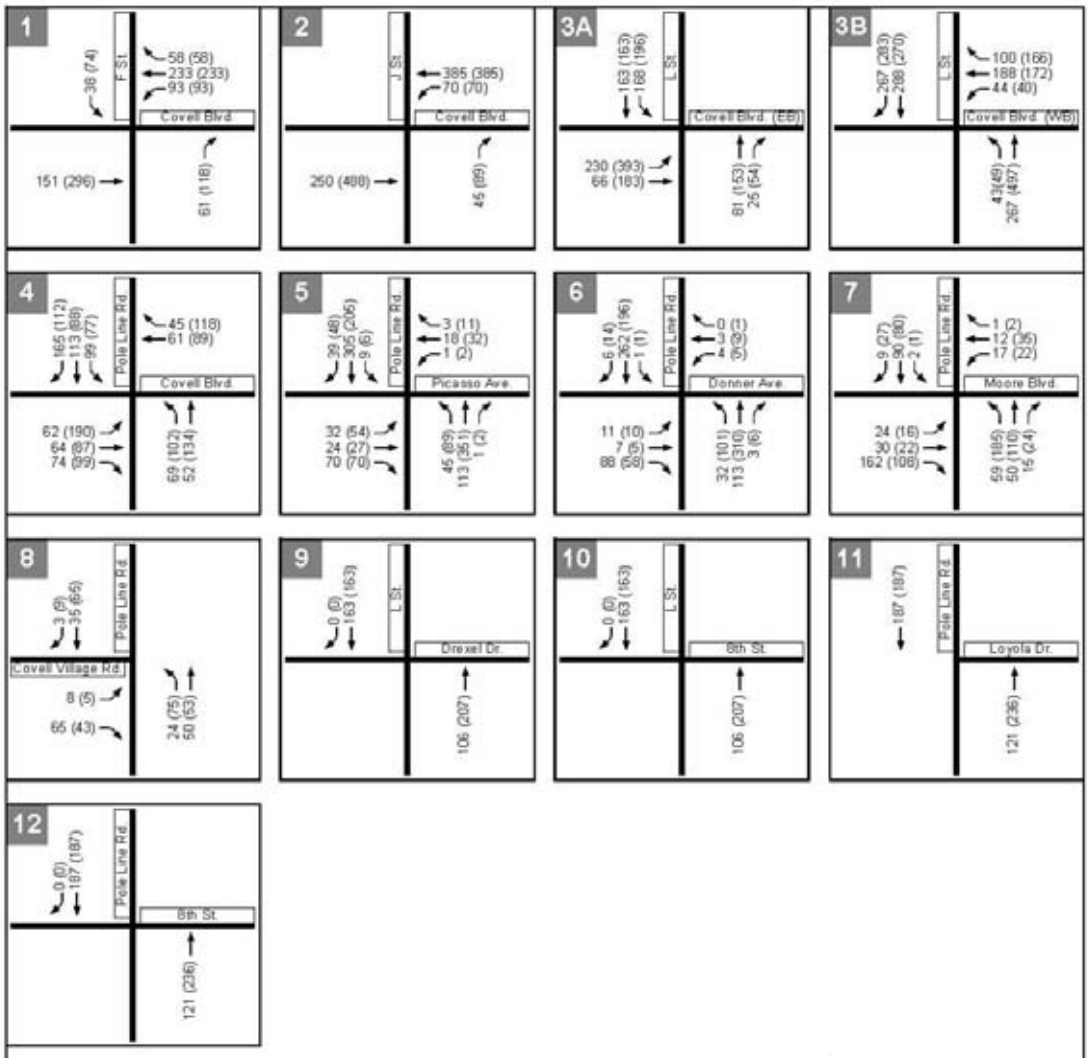
Trip Assignment

The two primary vehicle access points to the project site would be located at Covell Boulevard/L Street and Pole Line Road/Moore Boulevard. Secondary access points would be located on Pole Line Road at proposed Covell Village Road, existing Donner Avenue, and existing Picasso Avenue. Additional access points to the Village Center would be provided on Covell Boulevard between Pole Line Road and L Street. Project trips were assigned to the roadway network based on the distribution of uses on-site, the location of access points, and the general directions of approach and departure illustrated in Figure 4.4-6. Figure 4.4-7 presents the project trip assignment, including adjustments for pass-by trips, at each of the study intersections. The project trip assignment was combined with intersection turning movement volumes under existing conditions to develop estimated intersection turning movement volumes under Project Conditions. Project Condition volumes are presented in Figure 4.4-8.

Existing Plus Project Intersection Levels of Service

As proposed by the project, the section of Covell Boulevard between L Street and Pole Line Road would be reconfigured as a couplet. Thus, the Covell Boulevard/L Street intersection was analyzed as two separate intersections (one with Covell Boulevard eastbound and the other with Covell Boulevard westbound). As directed by Public Works staff, three intersections along Pole Line Road (at Picasso Avenue, Donner Avenue, and Moore Boulevard) were analyzed as both side-street stops, as they are controlled today, and as roundabouts, as they are proposed with the project. The Project Condition intersection configuration and controls are illustrated in Figure 4.4-9.

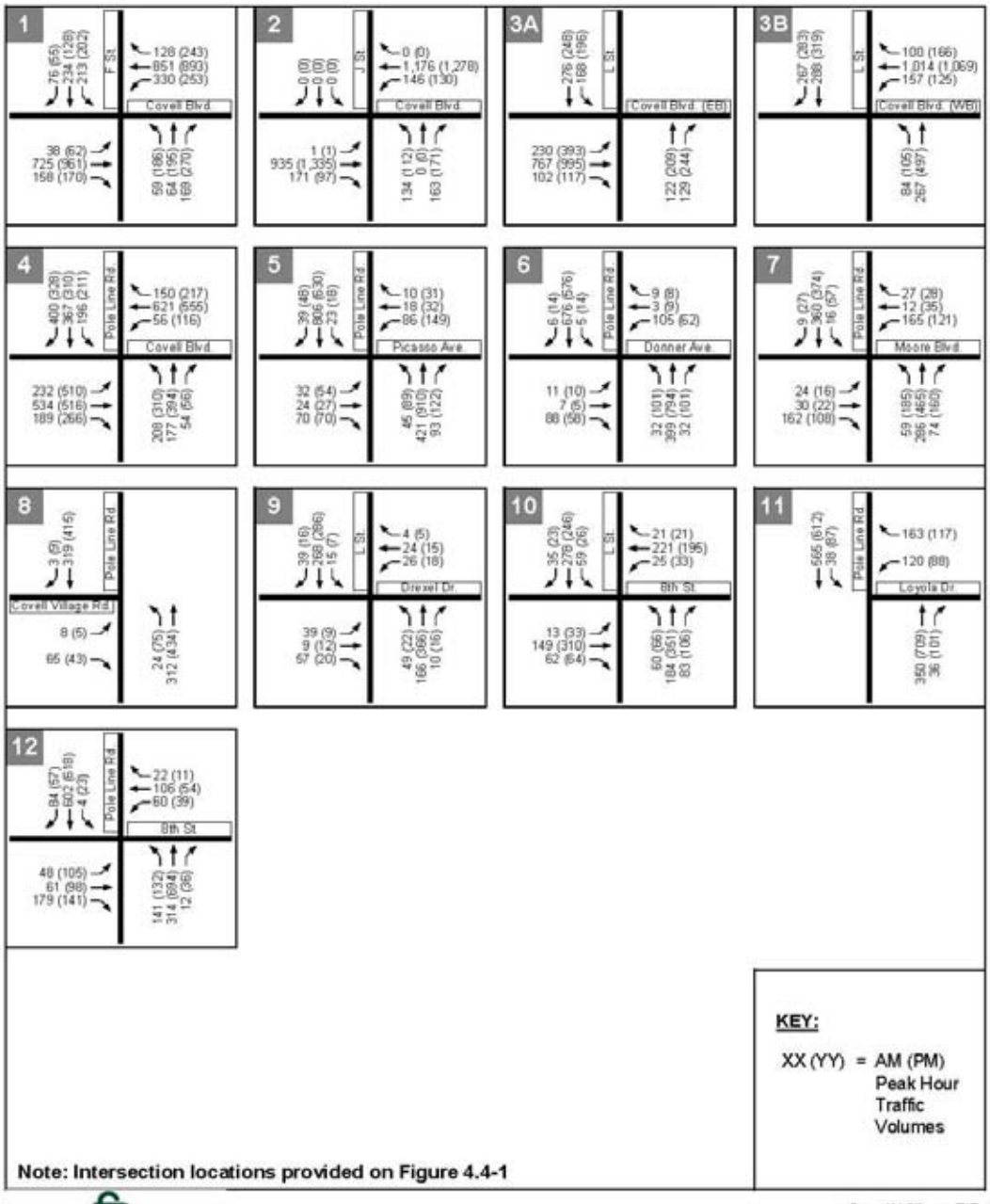

KEY:
1 = Study Intersections
X% = Trip Distribution Percentages
NOTE:
Intersection 8 is a future intersection created by the project
PROJECT SITE
5%
5%
4%
1%
3%
4%
14%
20%
16%
8%
6%
14%
WEST COVELL BLVD.
EAST COVELL BLVD.
DONNER AVE.
PICASSO AVE.
MOORE BLVD.
DREXEL DR.
LOYOLA DR.
ALHAMBRA DR.
Nugget Center
ANDERSON RD.
POLE LINE RD.
RUSSELL BLVD.
COWELL BLVD.
5TH ST.
6TH ST.
I ST.
J ST.
F ST.
E ST.
B ST.
1ST ST.
RICHARDS BLVD.
113
80
N
Not to Scale
Covell Village EIR
FEHR & PEERS
TRANSPORTATION CONSULTANTS
December 2004
2068-4.4-6 nearterm trip dist
PROJECT TRIP DISTRIBUTION
FIGURE 4.4-6



FEHR & PEERS
TRANSPORTATION CONSULTANTS
December 2004
1041-2068

Covell Village EIR

PROJECT TRIP ASSIGNMENT
PEAK HOUR INTERSECTION VOLUMES
FIGURE 4.4-7

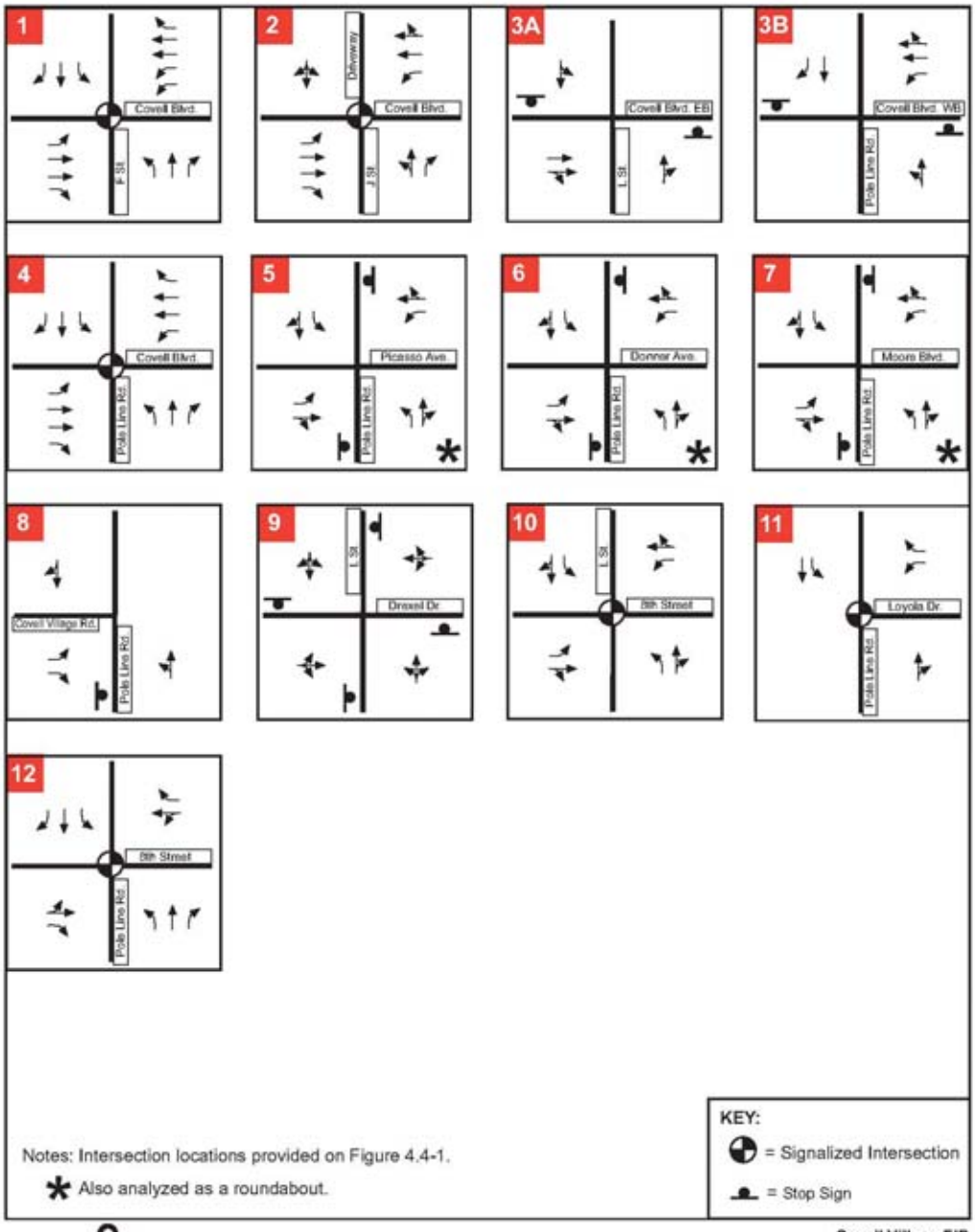


FEHR & PEERS
TRANSPORTATION CONSULTANTS
December 2004
1041-2068

Covell Village EIR

EXISTING WITH PROJECT CONDITIONS PEAK HOUR INTERSECTION VOLUMES

FIGURE 4.4-8


1
Covell Blvd.
I St
2
Driveway
Covell Blvd.
J St
3A
Covell Blvd. EB
L St
3B
Covell Blvd. WB
Pole Line Rd
4
Covell Blvd.
Pole Line Rd
5
Picasso Ave.
Pole Line Rd
6
Donner Ave.
Pole Line Rd
7
Moore Blvd.
Pole Line Rd
8
Covell Village Rd.
Pole Line Rd
9
L St
Drexel Dr.
10
L St
8th Street
11
Loyola Dr.
Pole Line Rd
12
8th Street
Pole Line Rd
Notes: Intersection locations provided on Figure 4.4-1.
Also analyzed as a roundabout.
KEY:
= Signalized Intersection
= Stop Sign
Covell Village EIR
FEHR & PEERS
TRANSPORTATION CONSULTANTS
December 2004
2068-6_4.4-9
PROJECT CONDITIONS
INTERSECTION CONFIGURATIONS AND CONTROLS
FIGURE 4.4-9

The project volumes were used in level of service calculations for the study intersections. The calculations were conducted to analyze the potential impacts of the Proposed Project on the local roadway system. The results of the calculations under Existing and Project Conditions are presented under Impact 4.4-1 below in Table 4.4-15.

Cumulative (Year 2015) No Project Conditions

A Cumulative Conditions analysis was performed to identify potential project impacts in year 2015. Year 2015 is the furthest analysis year forecasted by the City of Davis' Travel Forecasting Model and represents UCD's 2003 Long Range Development Plan (LRDP) time horizon. The 2015 conditions incorporate full buildout of the Davis General Plan (which has a 2010 planning horizon), extrapolated residential growth within the City for an additional 5 years to 2015, and full buildout of the UCD 2003 Long Range Development Plan. The project site was assumed vacant for the "Cumulative No Project" condition.

Cumulative Conditions without the project are presented to establish the future, long-term background conditions.

Cumulative No Project Roadway System

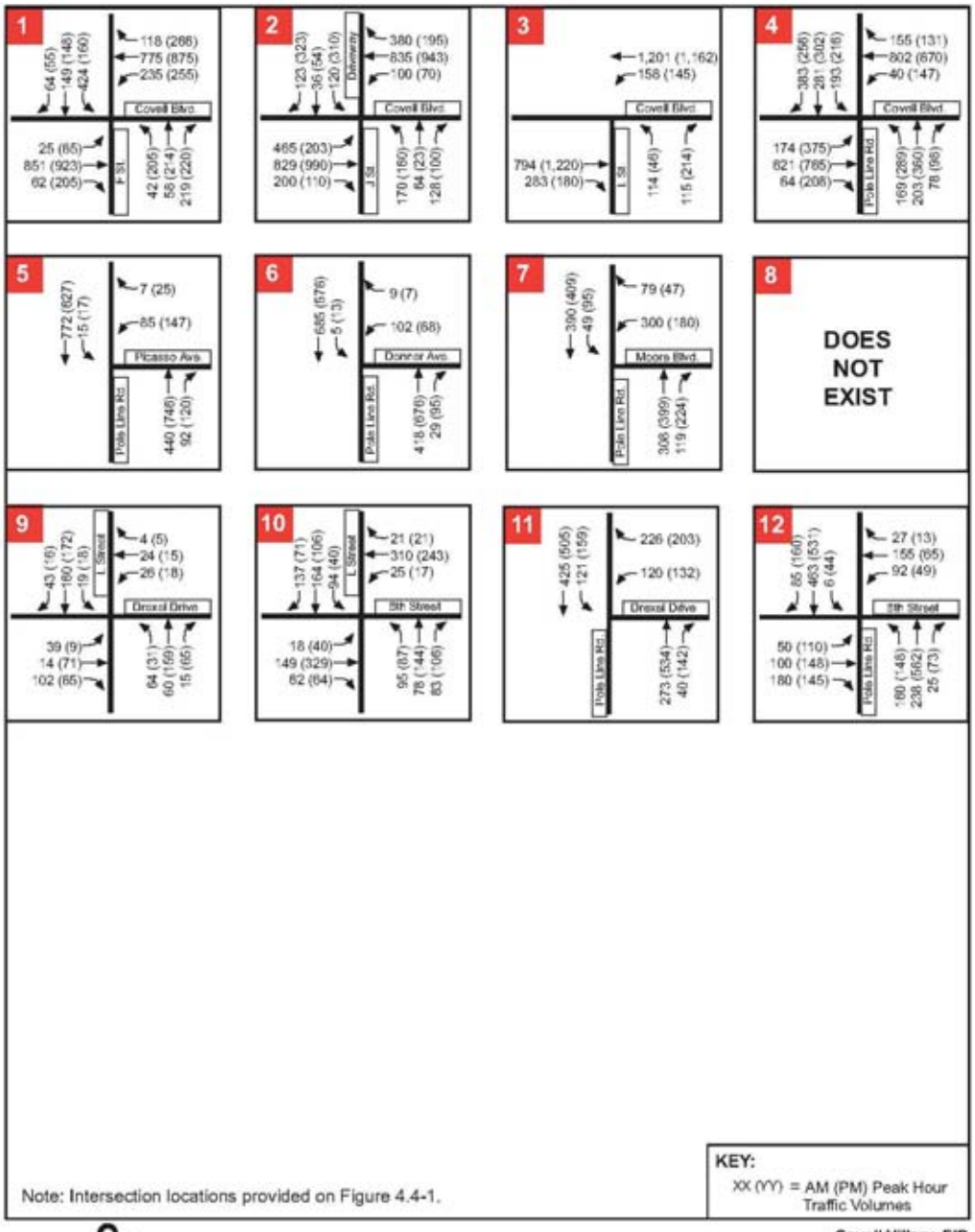
The City has very few roadway improvements planned between now and 2015, and none are located within the project study area. Thus, the roadway system within the study area for Cumulative 2015 Conditions is assumed to be the same as under existing conditions.

Cumulative No Project Intersection Volume Estimates

Volumes under this scenario were developed using the following process:

1. Existing volumes were furnessed to produce background cumulative intersection volumes. Furnessing is the process of extracting AM and PM link volumes for the existing year and the cumulative (2015) year from the Davis Travel Demand Model and applying the change in link volumes to the turning movements at each intersection. The Davis Travel Demand Model was modified to account for the development on the ConAgra (former Hunt Wesson) site with 100 acres of Business Park and development of a Target Store and additional retail on Second Street near Mace Boulevard.
2. To account for traffic generated by the Spring Lake Development in Woodland to the north, traffic was manually added to background cumulative intersection volumes on Pole Line Road.

The "Cumulative No Project Condition" turning movement volumes are presented in Figure 4.4-10.



Covell Village EIR

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CUMULATIVE (YEAR 2015) WITHOUT PROJECT CONDITIONS PEAK HOUR INTERSECTION VOLUMES

December 2004
2068.4.4-12

FIGURE 4.4-10

Cumulative No Project Intersection Levels of Service

Levels of service were calculated for the study intersections using the cumulative traffic volumes illustrated in Figure 4.4-10. Table 4.4-11 presents the LOS results under "Cumulative No Project Conditions." The results indicate that, during the AM and PM peak hours, operations at the Covell Boulevard/L Street intersection are expected to degrade to an unacceptable level (LOS F) and meet the peak hour volume signal warrant. During the PM peak hour, operations at Pole Line Road/Picasso Avenue are projected to degrade to an unacceptable level (LOS F), and the intersection meets the peak hour volume signal warrant. All other study intersections are expected to maintain acceptable operations (LOS E or better) during the AM and PM peak hours.

Table 4.4-11
Intersection Level of Service Summary – Cumulative (2015) No Project Conditions

Intersection	Traffic Control	Peak Hour	Delay	LOS
1. F Street/Covell Boulevard	Signal	AM	32.0	C
		PM	23.3	C
2. J Street/Covell Boulevard	Signal	AM	26.6	C
		PM	23.2	C
3. L Street/Covell Boulevard	Side Street Stop [a]	AM	>50	F
		PM	>50	F
4. Pole Line Road/Covell Boulevard	Signal	AM	25.9	C
		PM	36.2	D
5. Pole Line Road/Picasso Avenue	Side Street Stop [a]	AM	35.6	E
		PM	>50	F
6. Pole Line Road/Donner Avenue	Side Street Stop [a]	AM	30.4	D
		PM	33.7	D
7. Pole Line Road/Moore Boulevard	Side Street Stop [a]	AM	46.0	E
		PM	40.6	E
8. Pole Line Road/Covell Village Road	*With Project Only*			
9. L Street/Drexel Drive	All Way Stop	AM	8.7	A
		PM	9.2	A
10. L Street/Eighth Street	Signal	AM	10.8	B
		PM	10.6	B
11. Pole Line Road/Loyola Drive	Signal	AM	12.9	B
		PM	13.1	B
12. Pole Line Road/Eighth Street	Signal	AM	16.3	B
		PM	15.7	B

Source: Fehr & Peers, December 2004.
Notes:
a. Delay and LOS for the worst movement or approach are reported.

Cumulative No Project Roadway Segment Levels of Service

Levels of service were determined for 2015 conditions without the project using the same methodology described previously. The results are presented in Table 4.4-12. Without the addition of project traffic, one segment is expected to operate at an unacceptable LOS F in 2015: Pole Line Road, north of Covell Boulevard. Although operating at an acceptable level, Pole Line Road, south of Eighth Street, would be at capacity at LOS E.

Table 4.4-12
Roadway Segment Level of Service Summary – Cumulative (2015) No Project Conditions

Roadway Segment	Facility Class	Lanes	Volume (Bi-Directional)	LOS
Covell Boulevard, between F Street and J Street	Arterial	4	29,990	D
Covell Boulevard, between J Street and L Street	Arterial	4	28,980	D
Covell Boulevard between L Street and Pole Line Road	Arterial	4	30,460	D
Covell Boulevard, east of Pole Line Road	Arterial	4	22,530	C
Pole Line Road, north of Covell Boulevard	Arterial	2	18,230	F
Pole Line Road, between Covell Boulevard and Eighth Street	Arterial	2	15,600	D
Pole Line Road, south of Eighth Street	Arterial	2	16,760	E
L Street, between Covell Boulevard and Eighth Street	Collector	2	4,760	C
F Street, between Covell Boulevard and Eighth Street.	Arterial	2	13,850	D

Source: Fehr & Peers, October 2004

Cumulative No Project Mace Boulevard Overcrossing

Volumes on the Mace Boulevard overcrossing for 2015 were projected using the City's travel demand model. About 30% growth is expected to occur. Table 4.4-13 compares the future volumes to the design capacities described previously. The existing volumes are also presented for comparison purposes. By 2015, the outside southbound travel lane and the loop on-ramp are expected to be at 91% and 65% of the design capacity, respectively, during the AM peak hour.

Table 4.4-13
Mace Boulevard Overcrossing – Cumulative (2015) No Project Conditions

Facility	Existing Volume (vph)	2015 Volume (vph)	Capacity (vph)	2015 Volume/ Capacity (%)
Southbound travel lane	1,269	1,686	1,850	91%
Loop on-ramp	747	940	1,450	65%

Source: Fehr & Peers, December 2004

Cumulative (Year 2015) With Proposed Project Conditions

The "Cumulative with Project Condition" adds project-related traffic to the "Cumulative No Project Condition" to determine the project's contribution to cumulative effects.

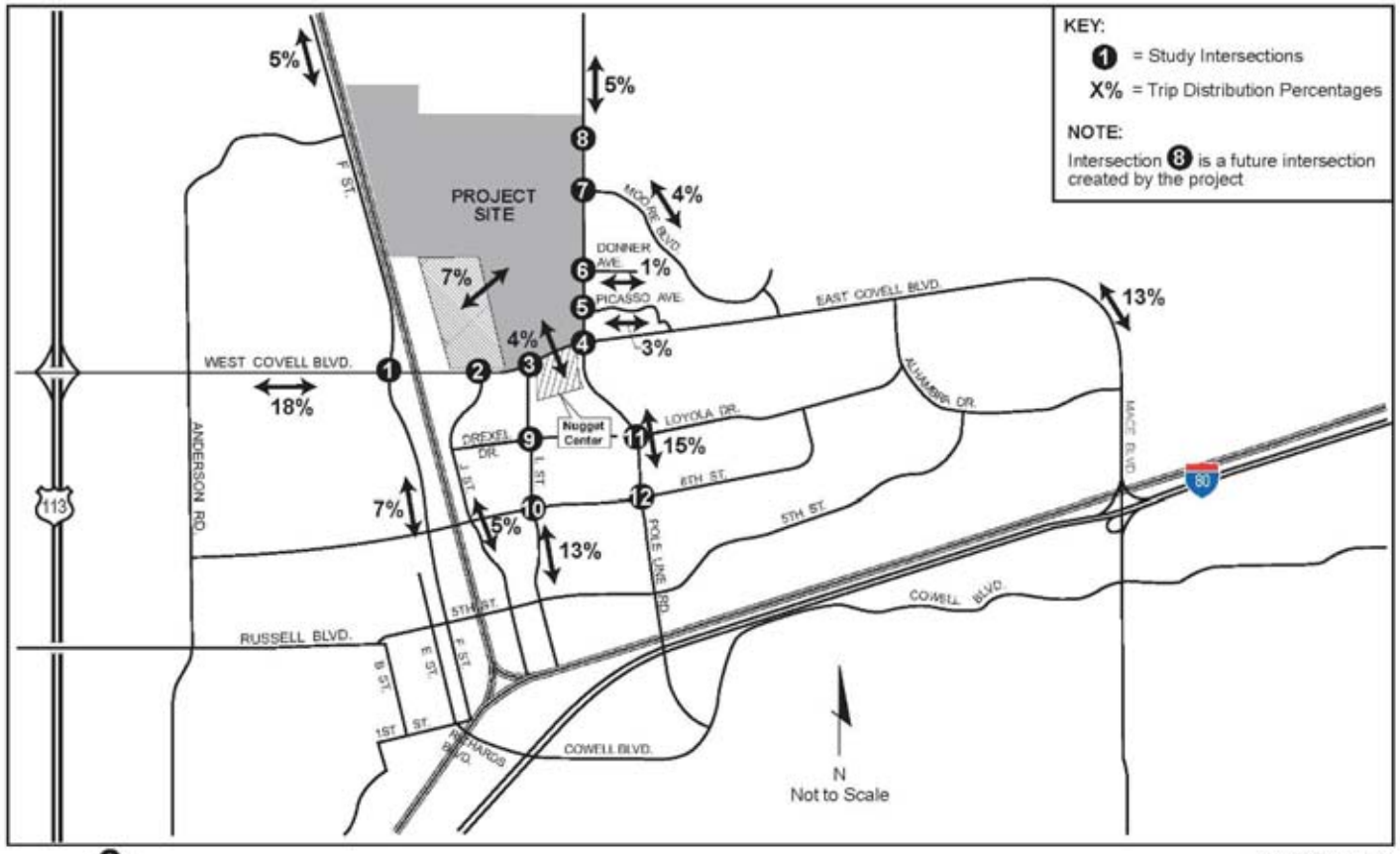
Cumulative With Project Intersection Volume Estimates

The project trip distribution percentages used for 2015 are slightly different than those used for existing project conditions, which were presented earlier in Figure 4.4-6. The difference can be attributed to the interaction between the Proposed Project and the ConAgra site. In 2015, the ConAgra site is assumed to be a business park. The close proximity and assumed internal connections would allow for internalization of traffic between the two uses. Therefore, a portion of the trips to and from Covell Village (seven percent) that were assigned onto the external roadway network under existing project conditions were re-assigned to the internal roadway network under cumulative conditions (Some of these trips could be made via bicycle or by walking). The cumulative project trip distribution is illustrated in Figure 4.4-11. The cumulative project trip assignment at each study intersection is presented in Figure 4.4-12.

To estimate volumes under "Cumulative with Project Conditions," traffic from the Proposed Project (as shown in Figure 4.4-12) was added to the "Cumulative No Project Conditions" volumes. The "Cumulative With Project Conditions" volumes are presented in Figure 4.4-13.

Cumulative With Project Intersection Levels of Service

Levels of service were calculated for the study intersections using cumulative traffic volumes plus traffic from the Proposed Project, as presented in Figure 4.4-13.



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CUMULATIVE PROJECT TRIP DISTRIBUTION
FIGURE 4.4-11

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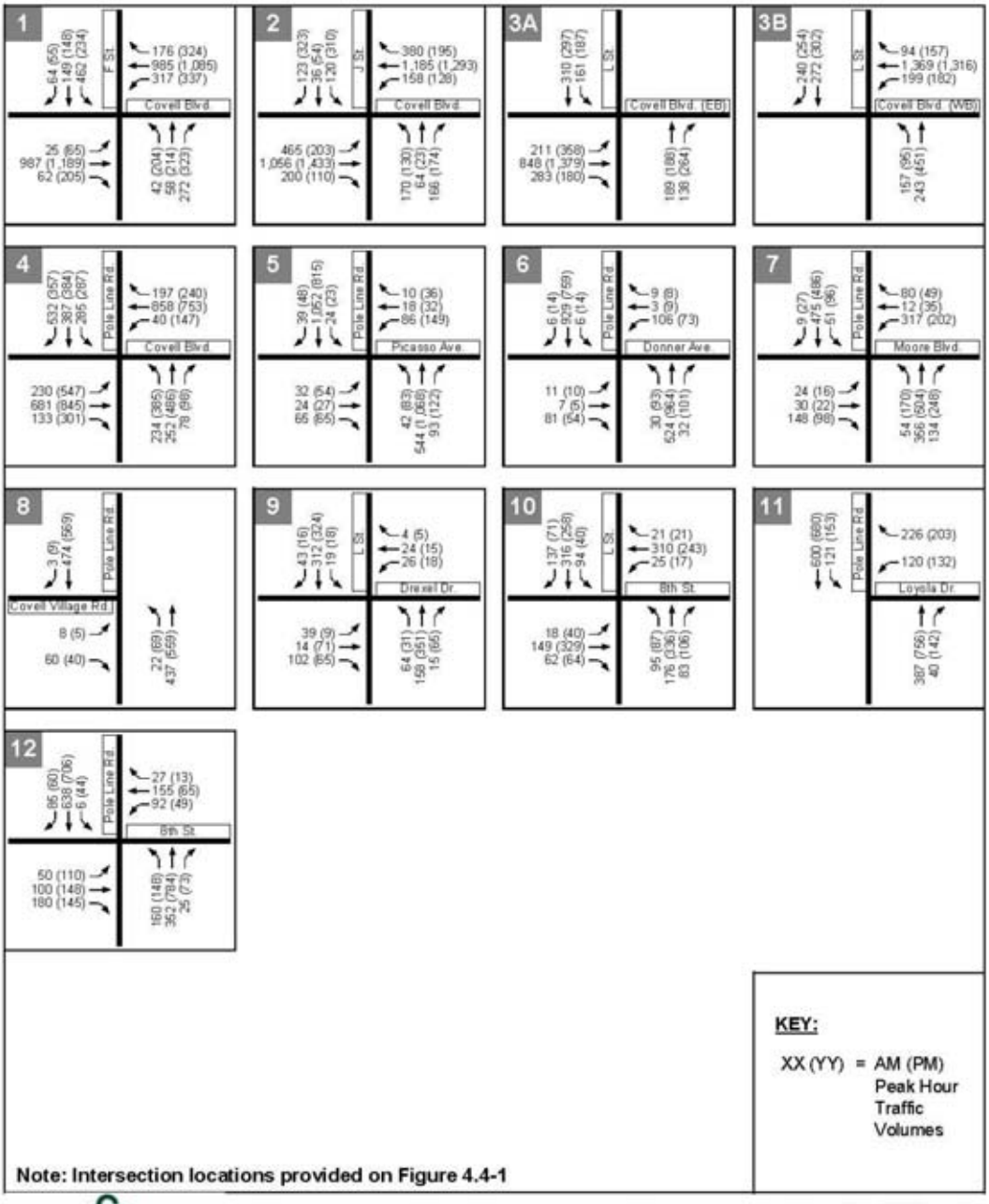
CUMULATIVE PROJECT TRIP ASSIGNMENT
PEAK HOUR INTERSECTION VOLUMES
FIGURE 4.4-12



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CUMULATIVE WITH PROJECT CONDITIONS PEAK HOUR INTERSECTION VOLUMES

FIGURE 4.4-13

High Density Alternative

Existing Plus High Density Alternative

Trip Generation

Trip generation estimates for the High Density Alternative were developed assuming that the alternative would contain the following (**bold** numbers indicate a change from the Proposed Project assumptions):

Within Village Center	**Outside Village Center**
• 60 apartments	• **1,236** single-family dwelling units
• 20 live/work residence	• 289 multi-family dwelling units
• 58,200 square feet of retail space	• **347** co-housing units and townhomes
• 43,300 square feet of office space	• 24 6-plex dwelling units
• 9,700-square foot church	• 600 student elementary school
• 30,000-square foot athletic club	• 3,000 square foot pre-school
• 11,300 square feet of meeting space	• 14 live/work residence
• 2,800-square foot day care center	• Hospice with 16 beds
• 58-room hotel	
• 6,000 square feet of restaurant space	
• Gas station with a 3,600-square foot market	

The High Density Alternative does not include the senior homes or the core care facility.

The same trip rates as the Proposed Project were used to estimate trip generation for the High Density Alternative. Table 4.4-14 presents the trip estimates. Internalization and pass-by rates used in the Proposed Project trip generation were also applied to the High Density Alternative.

Therefore, the High Density Alternative would generate 2,199 new AM peak hour trips (757 inbound/1,441 outbound), and 2,792 new PM peak hour trips (1,640 inbound/1,152 outbound). A total daily trip generation of 25,733 new trips due to the High Density Alternative was estimated. The High Density Alternative would thus produce approximately 5,250 more daily trips than the Proposed Project, with about 450 more AM peak hour trips and 550 more PM peak hour trips.

Table 4.4-14 -- High Density Alternative Trip Generation Estimates									
Land Use	**Units**		**AM Peak Hour**			**PM Peak Hour**			**Daily**
			In	**Out**	**Total**	**In**	**Out**	**Total**	**Total**
Single Family	1,236	d.u.	317	951	1,268	1,098	645	1,743	15,844
Apartments	242	d.u.	23	92	116	85	46	130	1,443
Co-housing/Townhomes	347	d.u.	28	137	165	125	61	186	2,068
6-plex Cluster Homes	24	d.u.	2	9	11	9	4	13	143
School	600	stud.	101	46	147	23	26	49	612
Pre-school	3.0	ksf	20	18	38	19	21	40	238
Multifamily (other land ded.)	47	d.u.	4	19	22	17	8	25	280
Live/Work Residence	14	d.u.	4	6	10	3	6	9	91
Hospice	16	Beds	1	1	2	2	2	4	43
Village Center									
Apartments	60	d.u.	6	23	29	21	11	32	358
Live/Work Residence	20	d.u.	6	8	14	5	8	13	130
Retail	58.2	ksf	37	23	60	210	228	438	2,499
Office	43.3	ksf	93	13	106	17	82	99	758
Church	9.7	ksf	4	3	7	3	3	6	88
Health Club	30.0	ksf	14	19	34	62	60	122	1,215
Meeting	11.3	ksf	11	7	18	5	13	19	258
Daycare	2.8	ksf	19	17	36	17	20	37	222
Hotel	58	rooms	20	13	32	18	16	34	146
Restaurant	6.0	ksf	163	156	319	108	100	208	2,977
Gas Station	3.6	ksf	143	137	280	173	173	347	3,469
Village Center Subtotal			514	419	934	640	714	1,354	12,119
Total Trip Generation			1,015	1,698	2,714	2,020	1,533	3,552	32,881
Internalization, Pass-by, and Linked-Trip Reductions									
Retail/Restaurant to Residential Internalization (10%)			*20*	*18*	*38*	*32*	*33*	*65*	*548*
Residential to Retail/Restaurant Internalization			*18*	*20*	*38*	*33*	*32*	*65*	*548*
Office to Residential Internalization (2%)			*2*	*0*	*2*	*0*	*2*	*2*	*15*
Residential to Office Internalization			*0*	*2*	*2*	*2*	*0*	*2*	*15*
Retail/Restaurant to Office Internalization (3%)			*6*	*5*	*11*	*10*	*10*	*19*	*164*
Office to Retail/Restaurant Internalization			*5*	*6*	*11*	*10*	*10*	*19*	*164*
Retail pass-by (34% PM only)			*-*	*-*	*-*	*74*	*74*	*149*	*1,489*
Restaurant pass-by (43% PM only)			*-*	*-*	*-*	*45*	*45*	*89*	*894*
Gas Station pass-by (62% AM; 56% PM)			*87*	*87*	*173*	*97*	*97*	*194*	*1,943*
School to Residential Internalization (45%)			*46*	*20*	*66*	*10*	*12*	*22*	*275*
Residential to School Internalization			*20*	*46*	*66*	*12*	*10*	*22*	*275*
Residential/School Linked Trips (15%)			*11*	*11*	*22*	*4*	*4*	*8*	*92*
Pre-school to Residential Internalization (45%)			*9*	*8*	*17*	*8*	*9*	*18*	*107*
Residential to Pre-school Internalization			*8*	*9*	*17*	*9*	*8*	*18*	*107*
Residential/Pre-school Linked Trips (15%)			*3*	*3*	*6*	*3*	*3*	*6*	*36*
Daycare to Residential Internalization (45%)			*9*	*8*	*16*	*8*	*9*	*17*	*100*
Residential to Daycare Internalization			*8*	*9*	*16*	*9*	*8*	*17*	*100*
Residential/Daycare Linked Trips (15%)			*3*	*3*	*6*	*3*	*3*	*6*	*33*
Health Club to Residential Internalization (10%)			*1*	*2*	*3*	*6*	*6*	*12*	*122*
Residential to Health Club Internalization			*2*	*1*	*3*	*6*	*6*	*12*	*122*
Total Reduction			***258***	***257***	***515***	*381*	*380*	*761*	***7,148***
TOTAL ADDED TRIP GENERATION			**757**	**1,441**	**2,199**	**1,640**	**1,152**	**2,792**	**25,733**

Trip Distribution and Assignment

The directions of approach and departure used for the Proposed Project were also used for the High Density Alternative. The trip distribution pattern was presented earlier in Figure 4.4-6 (Project Trip Distribution), and the project alternative trip assignment is presented in Figure 4.4-14.

Existing Plus High Density Alternative Intersection Levels of Service

The High Density Atlternative trip assignment added to the existing traffic volumes is presented in Figure 4.4-15. The Proposed Project intersection configuration and controls, which were illustrated in Figure 4.4-9, would remain the same for the High Density Alternative. The results of the intersection level of service calculations under Existing plus High Density Alternative conditions are presented in Table 4.4-16.

Cumulative (Year 2015) With High Density Alternative

Because the High Density Alternative would generate more traffic than the Proposed Project, a cumulative analysis was conducted for the alternative to determine whether the same or additional impacts would occur. The "Cumulative with High Density Alternative Condition" adds project alternative-related traffic to the "Cumulative No Project Condition" to determine the High Density Alternative's contribution to cumulative effects.

Cumulative With High Density Alternative Intersection Volume Estimates

The High Density Alternative trip distribution percentages used for 2015 are the same as those used for the Proposed Project, as illustrated in Figure 4.4-11. The cumulative project alternative trip assignment at each study intersection is presented in Figure 4.4-16. To estimate cumulative volumes with the High Density Alternative, traffic from the project alternative (as shown in Figure 4.4-16) was added to the "Cumulative No Project" volumes. The "Cumulative With High Density Alternative" volumes are presented in Figure 4.4-17.

Cumulative With High Density Alternative Intersection Levels of Service

Levels of service were calculated for the study intersections using cumulative traffic volumes plus traffic from the High Density Alternative, as presented in Figure 4.4-17.

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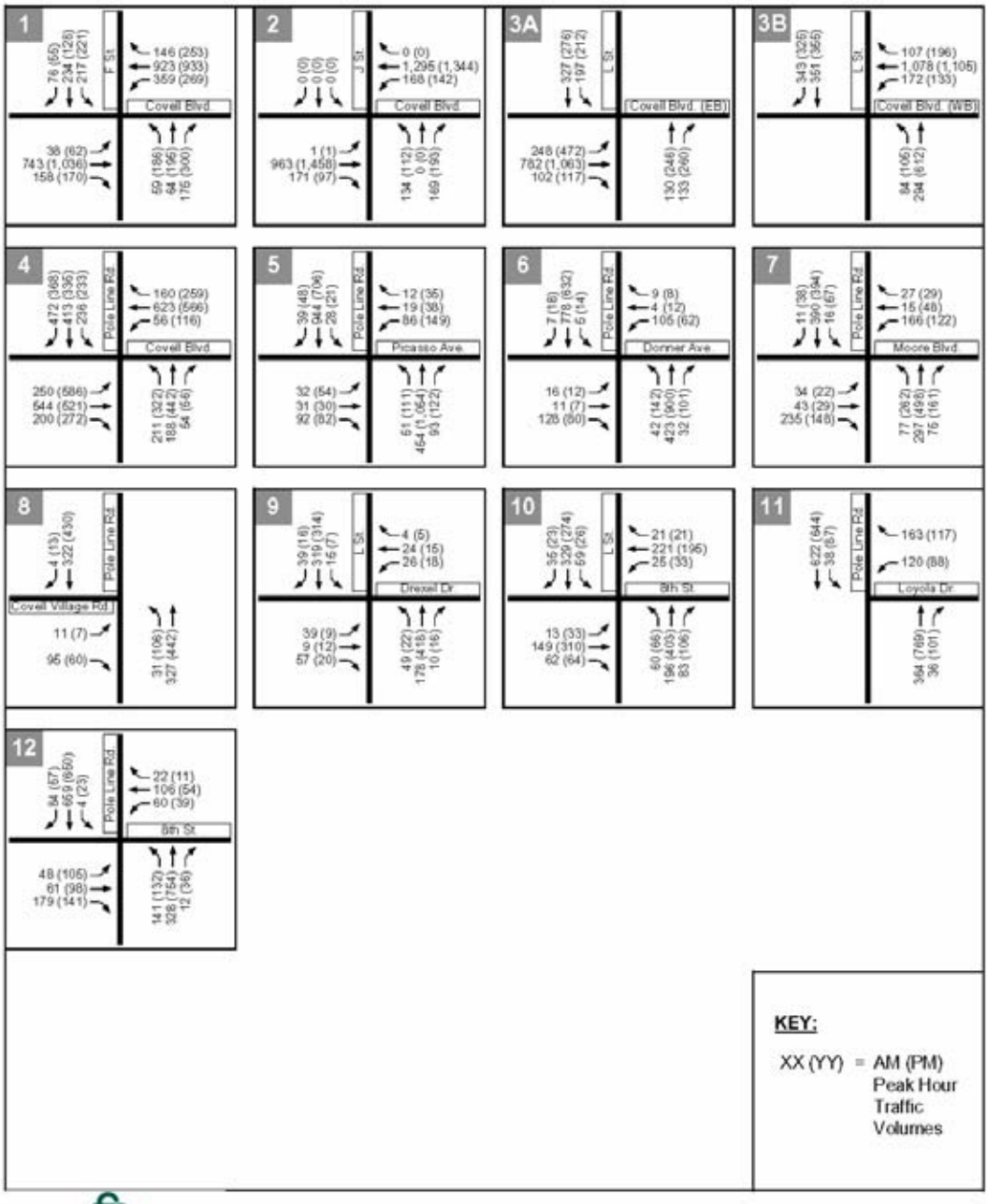
EXISTING PLUS HIGH DENSITY TRIP ASSIGNMENT
PEAK HOUR INTERSECTION VOLUMES
FIGURE 4.4-14



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EXISTING PLUS HIGH DENSITY ALTERNATIVE PEAK HOUR INTERSECTION VOLUMES

FIGURE 4.4-15

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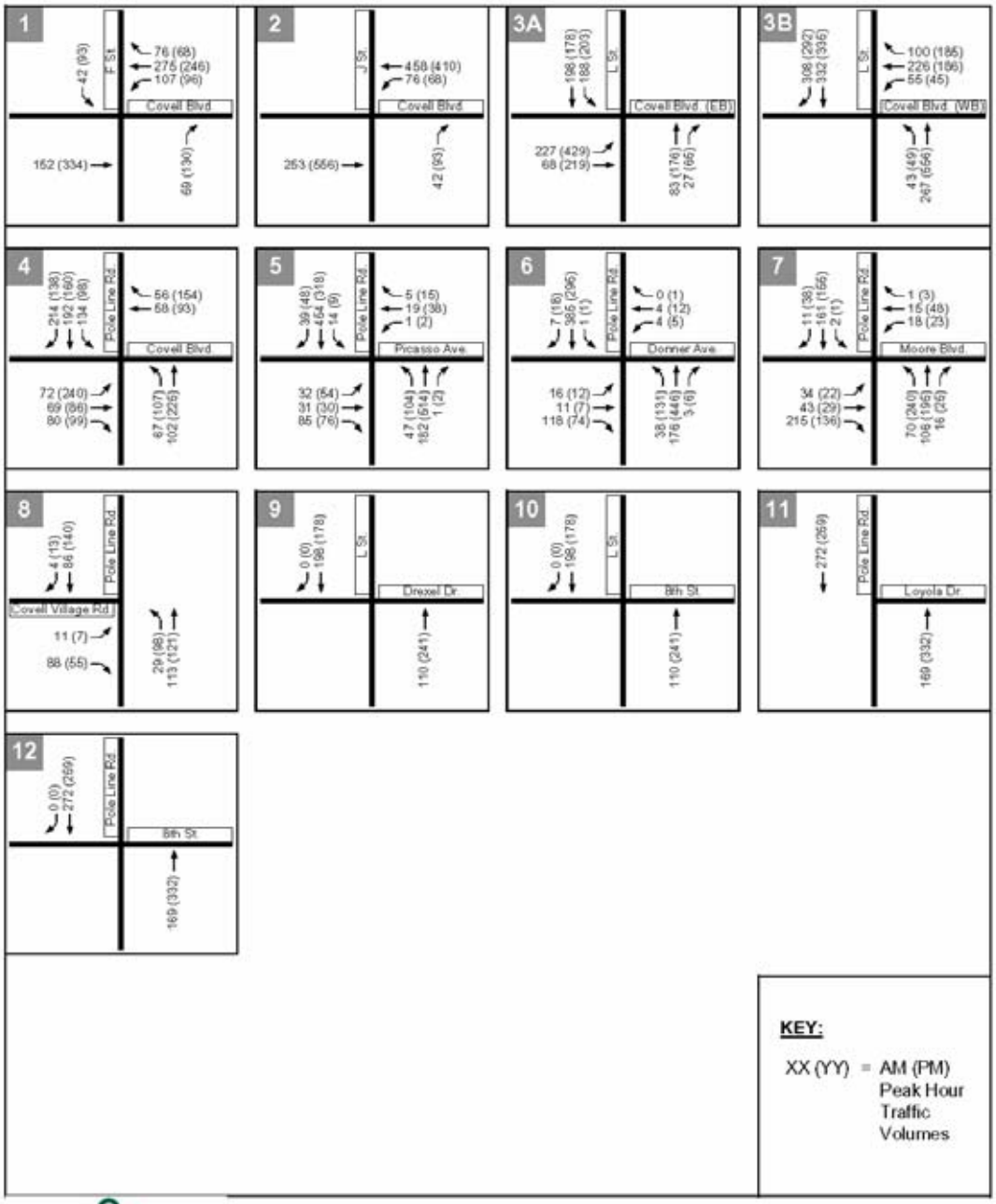

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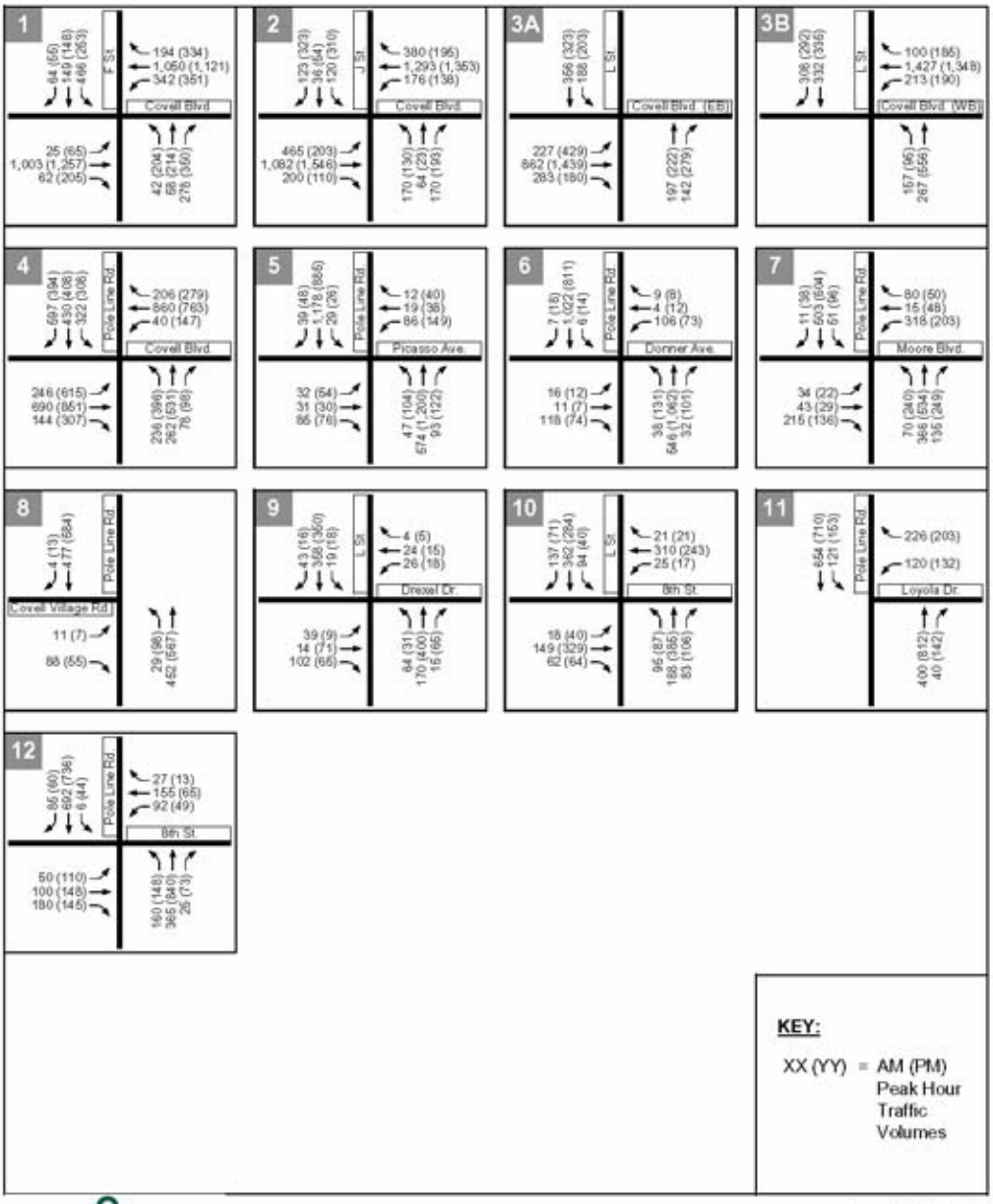
CUMULATIVE HIGH DENSITY TRIP ASSIGNMENT
PEAK HOUR INTERSECTION VOLUMES
FIGURE 4.4-16



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CUMULATIVE PLUS HIGH DENSITY ALTERNATIVE PEAK HOUR INTERSECTION VOLUMES

FIGURE 4.4-17

Phasing Analysis

An interim phasing analysis was conducted by Fehr & Peers to determine if a portion of the Covell Village project could be constructed prior to triggering significant transportation impacts. As indicated in the phasing information submitted by the applicant, the project contains three phases. Phase 1 contains 33 percent of the Village Center and 34 percent of the residential. During this phase, the Village Center is estimated to generate 178 AM and 400 PM peak hour trips and the external residential area is estimated to generate 367 AM and 487 PM peak hour trips. These trips were assigned to the intersections identified as having significant project impacts and were evaluated with level of service calculations. The intersections of Picasso Avenue/Pole Line Road, Covell Boulevard (EB)/L Street, and Covell Boulevard (WB)/L Street are projected to operate at an unacceptable level of service (LOS F) in both the AM and PM peak period with the Phase 1 traffic. Therefore, mitigation measures would be required at these intersections with the implementation of Phase 1. The results of the phasing analysis show that only a portion of Phase 1 could be built without triggering impacts.

PROJECT IMPACTS AND MITIGATION MEASURES

4.4-1 Impacts to the surrounding roadway network under Existing Plus Project conditions.

Proposed Project

The effect of the project on the surrounding roadway network was evaluated based on the level of expected new traffic. The Proposed Project is predicted to generate about 20,479 new daily trips. Of these new trips, 1,751 trips would occur during the AM peak hour and 2,214 trips would occur during the PM peak hour. The increased volumes on the roadway network would cause the side-street stop-controlled approaches at Pole Line Road/Picasso Avenue and at Covell Boulevard/L Street to deteriorate to LOS F during the AM and PM peak hours and would result in the intersections meeting the peak hour volume signal warrant.

In addition, Pole Line Road/Donner Avenue and Pole Line Road/Moore Boulevard degrade to LOS F; however, they would not meet the peak hour volume signal warrant. Thus, the added traffic from the project would not constitute a significant impact to the Pole Line Road/Donner Avenue and Pole Line Road/Moore Boulevard intersections. The remaining intersections are projected to operate at LOS D or better during the peak hours.

It should be noted that according to Table 4.4-15, three intersections projected to operate at LOS F with the addition of project traffic would operate acceptably with the installation of roundabouts. These intersections are Pole Line Road/Picasso, Pole Line Road/Donner Avenue, and Pole Line Road/Moore Boulevard.

Table 4.4-15
Intersection Level of Service – Existing and Project Conditions

Intersection	Traffic Control	Peak Hour	Existing		Existing + Project	
			Delay	LOS	Delay	LOS
1. F Street/Covell Boulevard	Signal	AM	20.3	C	32.1	C
		PM	20.3	C	35.3	D
2. J Street/Covell Boulevard	Signal	AM	10.7	B	18.4	B
		PM	9.6	A	16.6	B
3A. L Street/Covell Boulevard (EB)	Side Street Stop [a]	AM	*See Note b*		>50	F
		PM			>50	F
3B. L Street/Covell Boulevard (WB)	Side Street Stop [a]	AM	*See Note b*		>50	F
		PM			>50	F
4. Pole Line Road/Covell Boulevard	Signal	AM	22.8	C	40.1	D
		PM	25.0	C	54.7	D
5. Pole Line Road/Picasso Avenue	Side Street Stop [a] (Roundabout)	AM	21.0	C	>50 (12.4)	F (B)
		PM	43.2	E	>50 (36.1)	F (E)
6. Pole Line Road/Donner Avenue [c]	Side Street Stop [a] (Roundabout)	AM	19.9	C	>50 (8.2)	F (B)
		PM	19.7	C	>50 (15.5)	F (C)
7. Pole Line Road/Moore Boulevard [c]	Side Street Stop [a] (Roundabout)	AM	16.9	C	>50 (5.6)	F (A)
		PM	18.1	C	>50 (9.0)	F (A)
8. Pole Line Road/Covell Village	Side Street Stop [a]	AM	N/A		10.8	B
		PM			11.9	B
9. L Street/Drexel Drive	All Way Stop	AM	8.5	A	10.9	B
		PM	8.2	A	11.0	B
10. L Street/Eighth Street	Signal	AM	10.3	B	16.1	B
		PM	10.5	B	17.6	B
11. Pole Line Road/Loyola Drive	Signal	AM	11.6	B	12.8	B
		PM	9.5	A	27.8	C
12. Pole Line Road/Eighth Street	Signal	AM	14.3	B	16.6	B
		PM	14.4	B	16.4	B

Source: Fehr & Peers, December 2004.
Notes:
Shaded information denotes significant impacts.

a. Delay and LOS for the worst movement or approach are reported.
b. Covell Boulevard and L Street is one intersection in existing conditions (AM Peak Hour: 33.6 (D); PM Peak Hour: 29.1 (D))
c. Because the peak hour signal warrant would not be met at these intersections under Existing Plus Project conditions, project-generated traffic would not constitute a significant impact.

Because traffic associated with the Proposed Project would result in applicable intersection thresholds of significance being exceeded without the incorporation of intersection improvements, a ***significant*** impact would result.

High Density Alternative

The effect of the High Density Alternative on the surrounding roadway network was evaluated based on the level of expected new traffic. The Alternative is predicted to generate about 25,690 new daily trips. Of these new trips, 2,197 trips would occur during the AM peak hour and 2,788 trips would occur during the PM peak hour. Similar to the Proposed Project, the increased volumes on the roadway network would cause the side-street stop-controlled approaches at Pole Line Road/Picasso Avenue and at Covell Boulevard/L Street to deteriorate to LOS F during the AM and PM peak hours and would result in the intersections meeting the peak hour volume signal warrant.

In addition, Pole Line Road/Donner Avenue and Pole Line Road/Moore Boulevard degrade to LOS F; however, they would not meet the peak hour volume signal warrant. Thus, like the Proposed Project, the added traffic from the High Density Alternative would not constitute a significant impact to the Pole Line Road/Donner Avenue and Pole Line Road/Moore Boulevard intersections. The remaining intersections are projected to operate at LOS D or better during the peak hours.

It should be noted that the roundabout analysis performed for the High Density Alternative showed that the Pole Line Road/Picasso Avenue intersection would not operate acceptably during the PM peak hour with the installation of a roundabout (See Table 4.4-16 – numbers in parentheses correspond to roundabout analyses).

Therefore, overall, the results of the level of service calculations under the High Density Alternative indicate that the alternative would cause significant impacts at the same locations as the Proposed Project (See Table 4.4-16). Therefore, the addition of traffic associated with the High Density Alternative would result in a ***significant*** traffic impact.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the significant traffic impacts at Pole Line Road/Picasso Avenue and Covell Boulevard/L Street to a *less-than-significant* level. It should be noted that for the High Density Alternative, signalization alone is not adequate to improve Covell Boulevard/L Street to an acceptable level. Additional improvements are needed, as identified below.

Mitigation Measures 4.4-1(a) and 4.4-1(b) are identified for the Proposed Project and the High Density Alternative.

Table 4.4-16
Intersection LOS Summary – Proposed Project vs. High Density Alternative

Intersection	Traffic Control	Peak Hour	Existing + Project		Existing + Alternative	
			Delay	LOS	Delay	LOS
1. F Street/Covell Boulevard	Signal	AM	32.1	C	32.5	C
		PM	35.3	D	38.3	D
2. J Street/Covell Boulevard	Signal	AM	18.4	B	19.1	B
		PM	16.6	B	18.1	B
3A. L Street/Covell Boulevard (EB)	Side Street Stop [a]	AM	>50	F	>50	F
		PM	>50	F	>50	F
3B. L Street/Covell Boulevard (WB)	Side Street Stop [a]	AM	>50	F	>50	F
		PM	>50	F	>50	F
4. Pole Line Road/Covell Boulevard	Signal	AM	40.1	D	45.3	D
		PM	54.7	D	72.5	E
5. Pole Line Road/Picasso Avenue	Side Street Stop [a] (Roundabout)	AM	>50 (12.4)	F (B)	>50 (24.5)	F (C)
		PM	>50 (36.1)	F (E)	>50 (>50)	F (F)
6. Pole Line Road/Donner Avenue [b]	Side Street Stop [a] (Roundabout)	AM	>50 (8.2)	F (B)	>50 (11.6)	F (B)
		PM	>50 (15.5)	F (C)	>50 (31.2)	F (E)
7. Pole Line Road/Moore Boulevard [b]	Side Street Stop [a] (Roundabout)	AM	>50 (5.6)	F (A)	>50 (6.4)	F (A)
		PM	>50 (9.0)	F (A)	>50 (12.7)	F (B)
8. Pole Line Road/Covell Village	Side Street Stop [a]	AM	10.8	B	11.1	B
		PM	11.9	B	12.5	B
9. L Street/Drexel Drive	All Way Stop	AM	10.9	B	12.1	B
		PM	11.0	B	12.1	B
10. L Street/Eighth Street	Signal	AM	16.1	B	16.0	B
		PM	17.6	B	17.8	B
11. Pole Line Road/Loyola Drive	Signal	AM	12.8	B	12.6	B
		PM	27.8	C	37.7	D
12. Pole Line Road/Eighth Street	Signal	AM	16.6	B	17.4	B
		PM	16.4	B	17.0	B

Source: Fehr & Peers, December 2004.
Notes: Shaded information denotes significant impacts.
a. Delay and LOS for the worst movement or approach are reported.
b. Because the peak hour signal warrant would not be met at these intersections under Existing Plus High Density Alternative conditions, Alternative-generated traffic would not constitute a significant impact.

4.4-1(a) *The applicant shall fully fund the installation of a traffic signal at Pole Line Road/Picasso Avenue. Prior to initial occupancy of a commercial building or residential unit, the signal at the Pole Line Road/Picasso Avenue intersection shall be installed and operational as determined by the City Engineer.*

4.4-1(b) *The applicant shall fully fund the installation of a traffic signal at Covell Boulevard/L Street. Prior to initial occupancy of a commercial building or residential unit, the signal at the Covell Boulevard/L Street intersection shall be installed and operational as determined by the City Engineer. The configuration of Covell Boulevard could remain as a couplet; however, the signals at the eastbound and westbound travelways would need to operate as one signal system.*

Mitigation Measure 4.4-1(c) is identified as an alternative mitigation measure for the Proposed Project but not for the High Density Alternative, which would reduce Proposed Project impacts to Pole Line Road/Picasso Avenue intersection to a less-than-significant level. It should be noted that the cumulative scenario requires signalization of the Pole Line Road/Picasso Avenue intersection.

4.4-1(c) *Prior to the submittal of the first tentative map, the Public Works Department shall determine whether the applicant shall fully fund the conversion of the Pole Line Road/Picasso Avenue intersection to a roundabout rather than signalizing the intersection (See MM 4.4-1(a)). Prior to initial occupancy of a commercial building or residential unit, the roundabout at the Pole Line Road/Picasso Avenue intersection shall be installed and operational as determined by the City Engineer.*

A roundabout installed at Pole Line Road/Picasso Avenue would likely require dedication of right-of-way by the project applicant on the west side and may encroach upon private property on the east side.

Mitigation Measure 4.4-1(d) is identified for the High Density Alternative but not for the Proposed Project.

4.4-1(d) *Prior to approval of improvement plans for the first phase of the project, the applicant shall submit to the City Engineer, for review and approval, plans for the modification of the Covell Boulevard/L Street intersection to include a separate left-turn lane for L Street traffic turning onto westbound Covell Boulevard, and stripe the southbound approach with a left-turn lane and a shared through/right-turn lane. The intersection modifications shall be complete prior to initial occupancy of a commercial building or residential unit.*

Installation of a left-turn lane from northbound L Street to westbound Covell Boulevard would likely require the widening of L Street by a few feet on either the east or west side of the road up to 100 feet beyond the back-of-crosswalk.

4.4-2. Impacts to segments of Pole Line Road and Covell Boulevard under Existing Plus Project conditions.

Proposed Project

Study roadway segments for the Proposed Project were reviewed to identify potential roadway impacts. The results of the roadway segment level of service analysis are summarized below in Table 4.4-17. As shown, the sections of Pole Line Road north of Covell Boulevard and south of Eighth Street would deteriorate from LOS D to LOS F.

Table 4.4-17
Roadway Segment Level of Service Summary – Existing and Project Conditions

Roadway Segment	Facility Class	Lanes	Existing		Existing Plus Project	
			Volume (Bi-Directional)	LOS	Volume (Bi-Directional)	LOS
Covell Boulevard, between F Street and J Street	Arterial	4	23,000	C	31,360	D
Covell Boulevard, between J Street and L Street	Arterial	4	20,300	C	32,380	E
Covell Boulevard between L Street and Pole Line Road	Arterial	4	19,700	C	31,060	D
Covell Boulevard, east of Pole Line Road	Arterial	4	15,300	C	18,570	C
Pole Line Road, north of Covell Boulevard	Arterial	2	11,800	D	21,890	F
Pole Line Road, between Covell Boulevard and Eighth Street	Arterial	2	10,600	C	16,140	E
Pole Line Road, south of Eighth Street	Arterial	2	14,700	D	18,450	F
L Street, between Covell Boulevard and Eighth Street	Collector	2	3,400	C	7,660	C
F Street, between Covell Boulevard and Eighth Street.	Arterial	2	9,400	C	13,360	D

Source: Fehr & Peers, October 2004
Note:
Shaded information denotes significant impacts.

Because intersections along these roadway segments (i.e., Pole Line Road/Eighth Street) were found to operate at acceptable levels with the addition of Proposed Project traffic, a note on roadway segment analysis methodology is appropriate here. Roadway intersections are typically considered the constrained points of a roadway network because vehicles traveling in conflicting directions need to share the same space. Consequently, traffic control devices are put into place to control the conflicting movements, which results in added delay to motorists. To evaluate worst-case conditions, the hours of peak travel are examined. For these reasons, peak hour intersection LOS is the industry standard measure of traffic impacts. In addition, roadway segment analysis can provide a method to assess

the adequacy of a roadway classification and cross section, but is not as informative or precise as a peak hour intersection analysis. The capacity thresholds are generalized for various roadway classifications without consideration for the unique character of each roadway.

Although roadway segment analyses are not the industry standard of measure for traffic impacts, because the Proposed Project would conflict with the City of Davis General Plan (See Policy MOB 1.1, Standard c.) by degrading Pole Line Road north of Covell Boulevard and south of Eighth Street from LOS D to F, a ***significant*** impact would result.

High Density Alternative

The results of the roadway segment level of service analysis for the High Density Alternative are summarized in Table 4.4-18. The High Density Alternative would result in four roadway segments being adversely impacted as compared to the Proposed Project, which would adversely impact two roadway segments. As shown, the segment of Covell Boulevard between J Street and L Street would operate at LOS F with the High Density Alternative. In addition, the sections of Pole Line Road both north and south of Covell Boulevard would deteriorate to LOS F.

Because the High Density Alternative would conflict with the City of Davis General Plan (See Policy MOB 1.1, Standard c.) by degrading Pole Line Road and Covell Boulevard to unacceptable levels of service, a ***significant*** impact would result.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to Pole Line Road north of Covell Boulevard to a *less-than-significant* level. Because the segment of Pole Line Road south of Covell Boulevard is in a developed area where right-of-way may not be available, the impact would remain *significant and unavoidable*. For Covell Boulevard, although widening Covell Boulevard from four to six lanes between J and L Street would reduce the above identified impact to a less-than-significant level, because this segment of Covell Boulevard is not planned for being widened up to six lanes (See Table 6 of the Davis General Plan), the impact would remain *significant and unavoidable*.

Mitigation Measure 4.4-2(a) is identified for the Proposed Project and the High Density Alternative.

4.4-2 *Prior to approval of improvement plans, the applicant shall submit to the City Engineer, for review and approval, plans for the widening of Pole Line Road north of Covell Boulevard to the northern boundary of the project site from two to four lanes. The Pole Line Road widening shall be complete prior to initial occupancy of a commercial building or residential unit.*

Table 4.4-18
Roadway Segment LOS Summary – Proposed Project vs. High Density Alternative

Roadway Segment	Facility Class	Lanes	Existing Plus Project		Existing Plus High Density Alternative	
			Volume (Bi-Directional)	LOS	Volume (Bi-Directional)	LOS
Covell Boulevard, between F Street and J Street	Arterial	4	31,360	D	33,460	E
Covell Boulevard, between J Street and L Street	Arterial	4	32,380	E	35,420	F
Covell Boulevard between L Street and Pole Line Road	Arterial	4	31,060	D	32,990	E
Covell Boulevard, east of Pole Line Road	Arterial	4	18,570	C	19,460	C
Pole Line Road, north of Covell Boulevard	Arterial	2	21,890	F	24,700	F
Pole Line Road, between Covell Boulevard and Eighth Street	Arterial	2	16,140	E	17,150	F
Pole Line Road, south of Eighth Street	Arterial	2	18,450	F	19,470	F
L Street, between Covell Boulevard and Eighth Street	Collector	2	7,660	C	9,990	D
F Street, between Covell Boulevard and Eighth Street.	Arterial	2	13,360	D	13,870	D

Source: Fehr & Peers, October 2004

4.4-3. Mace Boulevard Overcrossing

Proposed project

As shown on Figure 4.4-6, an estimated 14 percent of the project traffic would travel to/from the east along Covell Boulevard. Of those, about 12 percent would use the Mace Boulevard overcrossing for access to south Davis or Interstate 80. These AM peak hour trips added to existing traffic volumes on the overcrossing are presented in Table 4.4-19. With the project, the outside southbound travel lane and the loop on-ramp are expected to be at 75 percent and 56 percent of their design capacities, respectively, during the AM peak hour. Because the project would not cause the facilities to operate above-capacity, the impact of the proposed project on the Mace Boulevard overcrossing is considered ***less-than-significant***.

Table 4.4-19
Mace Boulevard Overcrossing – Existing Plus Project Conditions AM Peak Hour

Facility	Existing Volume (vph)	Existing + Project Volume (vph)	Capacity (vph)	Existing + Project Volume/Capacity (%)
Southbound travel lane	1,269	1,389	1,850	75%
Loop on-ramp	747	818	1,450	56%

Source: Fehr & Peers, December 2004

High Density Alternative

The High Density Alternative, which would generate more traffic than the Proposed Project, would consequently add more traffic to the Mace overcrossing. These AM peak hour trips added to existing traffic volumes on the overcrossing are presented in Table 4.4-20. With the high density alternative, the outside southbound travel lane and the loop on-ramp are expected to be at 77% and 58% of their design capacities, respectively, during the AM peak hour. Because the high density alternative would not cause the facilities to operate above-capacity, the impact of the proposed project on the Mace Boulevard overcrossing is considered ***less-than-significant***.

Table 4.4-20
Mace Boulevard Overcrossing – High Density Alternative Conditions AM Peak Hour

Facility	Existing Volume (vph)	Existing + HD Alt Volume (vph)	Capacity (vph)	Existing + HD Alt Volume/Capacity (%)
Southbound travel lane	1,269	1,425	1,850	77%
Loop on-ramp	747	838	1,450	58%

Source: Fehr & Peers, December 2004

CUMULATIVE IMPACTS AND MITIGATION MEASURES

The following impact discussions pertain to cumulative impacts associated with the Proposed Project and the High Density Alternative.

4.4-4. Cumulative impacts to study intersections.

Proposed Project

During the AM and PM peak hours the intersections of Covell Boulevard/L Street and Pole Line Road/Picasso Avenue are expected to operate at LOS F, an unacceptable level. Because the "Cumulative Without Project Condition" at these two intersections also resulted in LOS F operations, and both intersections met the peak hour volume signal warrant with or without the project, the volume contribution of the project is hereby examined. The Covell Boulevard/L Street

total intersection volume increases by about 50 percent, and the Pole Line Road/Picasso Avenue intersection total volume increases by about 45 percent. At each intersection, because the contribution is more than 1 percent, as defined by the significance criteria, a significant impact would occur.

In addition, under "Cumulative With Project Conditions" the intersections of Pole Line Road/Donner Avenue and Pole Line Road/Moore Boulevard would both degrade to unacceptable operations (LOS F) during the AM and PM peak hours, and would meet the peak hour volume signal warrant. However, the roundabout analysis showed that each would operate acceptably (LOS E or better) as a roundabout (See Table 4.4-21 – numbers in parentheses correspond to roundabout analyses).

Because traffic associated with the Proposed Project and other cumulative development would result in applicable intersection thresholds of significance being exceeded without the incorporation of intersection improvements, a ***significant*** impact would result.

High Density Alternative

Table 4.4-22 presents the LOS results for the High Density Alternative in comparison to the Proposed Project. The results of the intersection analysis indicate that the intersections of Pole Line Road/Picasso Avenue, Covell Boulevard/L Street, Pole Line Road/Donner Avenue, and Pole Line Road/Moore Boulevard are projected to operate at an unacceptable LOS F during the AM and PM peak hours as well as meet peak hour volume signal warrants. These impacts would also occur with the Proposed Project. The High Density Alternative would result in an additional significant impact because a service level deterioration to LOS F would occur at Covell Boulevard/Pole Line Road during the PM peak hour. The remaining study intersections are projected to operate at acceptable levels during the peak hours.

The roundabout analysis performed for the High Density Alternative showed that only two of the four impacted intersections would operate acceptably as roundabouts: Pole Line Road/Donner Avenue and Pole Line Road/Moore Boulevard (See Table 4.4-22 – numbers in parentheses correspond to roundabout analyses).

Table 4.4-21
Intersection Level of Service – Cumulative and Project (2015) Conditions

Intersection	Traffic Control	Peak Hour	Cumulative		Cumulative + Project	
			Delay	LOS	Delay	LOS
1. F Street/Covell Boulevard	Signal	AM	32.0	C	50.8	D
		PM	23.3	C	41.6	D
2. J Street/Covell Boulevard	Signal	AM	26.6	C	59.0	E
		PM	23.2	C	47.2	D
3A. L Street/Covell Boulevard (EB)	Side Street Stop[a]	AM	*See Note b*		>50	F
		PM			>50	F
3B. L Street/Covell Boulevard (WB)	Side Street Stop[a]	AM	*See Note b*		>50	F
		PM			>50	F
4. Pole Line Road/Covell Boulevard	Signal	AM	25.9	C	45.9	D
		PM	36.2	D	78.5	E
5. Pole Line Road/Picasso Avenue	Side Street Stop[a] (Roundabout)	AM	35.6	E	>50 (25.2)	F (D)
		PM	>50	F	>50 (45.9)	F (E)
6. Pole Line Road/Donner Avenue	Side Street Stop[a] (Roundabout)	AM	30.4	D	>50 (11.9)	F (B)
		PM	33.7	D	>50 (23.8)	F (C)
7. Pole Line Road/Moore Boulevard	Side Street Stop[a] (Roundabout)	AM	46.0	E	>50 (6.7)	F (A)
		PM	40.6	E	>50 (11.7)	F (B)
8. Pole Line Road/Covell Village Road	Side Street Stop[a]	AM	N/A		12.5	B
		PM			14.0	B
9. L Street/Drexel Drive	All Way Stop	AM	8.7	A	10.8	B
		PM	9.2	A	13.0	B
10. L Street/Eighth Street	Signal	AM	10.8	B	16.5	B
		PM	10.6	B	17.4	B
11. Pole Line Road/Loyola Drive	Signal	AM	12.9	B	12.5	B
		PM	13.1	B	41.0	D
12. Pole Line Road/Eighth Street	Signal	AM	16.3	B	17.4	B
		PM	15.7	B	19.0	B

Source: Fehr & Peers, December 2004.
Notes:
Shaded information denotes significant impacts.

a. Delay and LOS for the worst movement or approach are reported.
b. Covell Boulevard and L Street is one intersection without the project (AM Peak Hour: >50 (LOS F); PM Peak Hour: >50(LOS F)

Table 4.4-22
Intersection Level of Service –Proposed Project Versus High Density Alternative (2015)

Intersection	Traffic Control	Peak Hour	Cumulative + Project		Cumulative + Alternative	
			Delay	LOS	Delay	LOS
1. F Street/Covell Boulevard	Signal	AM	50.8	D	54.5	D
		PM	41.6	D	47.7	D
2. J Street/Covell Boulevard	Signal	AM	59.0	E	66.3	E
		PM	47.2	D	53.2	D
3A. L Street/Covell Boulevard (EB)	Side Street Stop[a]	AM	>50	F	>50	F
		PM	>50	F	>50	F
3B. L Street/Covell Boulevard (WB)	Side Street Stop[a]	AM	>50	F	>50	F
		PM	>50	F	>50	F
4. Pole Line Road/Covell Boulevard	Signal	AM	45.9	D	53.1	D
		PM	78.5	E	>80	F
5. Pole Line Road/Picasso Avenue	Side Street Stop[a] (Roundabout)	AM	>50 (25.2)	F (D)	>50 (46.5)	F (E)
		PM	>50 (45.9)	F (E)	>50 (>50)	F (F)
6. Pole Line Road/Donner Avenue	Side Street Stop[a] (Roundabout)	AM	>50 (11.9)	F (B)	>50 (17.3)	F (C)
		PM	>50 (23.8)	F (C)	>50 (43.7)	F (E)
7. Pole Line Road/Moore Boulevard	Side Street Stop[a] (Roundabout)	AM	>50 (6.7)	F (A)	>50 (7.4)	F (A)
		PM	>50 (11.7)	F (B)	>50 (16.9)	F (C)
8. Pole Line Road/Covell Village	Side Street Stop[a]	AM	12.5	B	12.9	B
		PM	14.0	B	14.8	B
9. L Street/Drexel Drive	All Way Stop	AM	10.8	B	11.6	B
		PM	13.0	B	14.6	B
10. L Street/Eighth Street	Signal	AM	16.5	B	16.4	B
		PM	17.4	B	17.5	B
11. Pole Line Road/Loyola Drive	Signal	AM	12.5	B	12.6	B
		PM	41.0	D	52.2	D
12. Pole Line Road/Eighth Street	Signal	AM	17.4	B	18.0	B
		PM	19.0	B	20.3	C

Source: Fehr & Peers, December 2004.
Notes:
Shaded information denotes significant impacts.

a. Delay and LOS for the worst movement or approach are reported.

Therefore, the addition of traffic associated with the High Density Alternative in conjunction with traffic generated by other cumulative development would result in a ***significant*** traffic impact to study intersection, including an additional intersection not cumulatively impacted by the Proposed Project.

Mitigation Measure(s)

Implementation of the following measures would reduce cumulatively significant effects at the intersections of Pole Line Road/Picasso Avenue, Covell Boulevard/L Street, Pole Line Road/Donner Avenue, and Pole Line Road/Moore Boulevard to a *less-than-significant* level.

The following mitigation measures are identified for the Proposed Project and the High Density Alternative.

4.4-4(a) *The applicant shall fund the installation of a traffic signal at Pole Line Road/Picasso Avenue. Prior to initial occupancy of a commercial building or residential unit, the signal at the Pole Line Road/ Picasso Avenue intersection shall be installed and operational as determined by the City Engineer.*

4.4-4(b) *Implement mitigation measure 4.4-1(b).*

4.4-4(c) *Prior to the submittal of the first tentative map, the determination shall be made by the Public Works Department whether the applicant shall fund the installation of a traffic signal at Pole Line Road/Donner Avenue or the conversion of the Pole Line Road/Donner Avenue intersection to a roundabout. Prior to initial occupancy of a commercial building or residential unit, the signal/roundabout at the Pole Line Road/Donner Avenue intersection shall be installed and operational as determined by the City Engineer.*

4.4-4(d) *Prior to the submittal of the first tentative map, the determination shall be made by the Public Works Department whether the applicant shall fund the installation of a traffic signal at Pole Line Road/Moore Avenue or the conversion of the Pole Line Road/Moore Avenue intersection to a roundabout. Prior to initial occupancy of a commercial building or residential unit, the signal/roundabout at the Pole Line Road/Moore Avenue intersection shall be installed and operational as determined by the City Engineer.*

Mitigation Measure 4.4-4(e) is identified as an alternative mitigation measure for the Proposed Project but not for the High Density Alternative, which would reduce Proposed Project impacts to Pole Line Road/Picasso Avenue intersection to a *less-than-significant* level.

4.4-4(e) Implement mitigation measure 4.4-1(c).

The following mitigation measures are identified for the High Density Alternative but not for the Proposed Project.

4.4-4(f) Implement mitigation measure 4.4-1(d).

4.4-4(g) Prior to approval of improvement plans, the applicant shall submit to the City Engineer, for review and approval, plans for the modification of the Pole Line Road/Covell Boulevard intersection to include add an additional eastbound left-turn pocket at Pole Line Road/Covell Boulevard. The intersection modifications shall be complete prior to initial occupancy of a commercial building or residential unit.

Installing a second eastbound left-turn lane would require dedication of right-of-way by the project applicant on the northwest corner of the intersection. In addition, modifications to the lane striping on the westbound Covell Boulevard approach and the pork-chop island on the northeast corner would likely be needed to properly line up the westbound approach lanes to the exit lanes.

The left turn volume of 615 vehicles for the Pole Line Road/Covell Boulevard intersection is beyond the capacity of a single left turn lane. By adding a second eastbound left turn lane, the operations at this intersection would improve to LOS D and E during the AM and PM peak hour, respectively. Standard MOB 1.1-d of the Davis General Plan (p. 113) states that "Davis streets shall have no more than four through automobile lanes, plus a single left-hand turning lane, even if this requirement reduces level of service." The standard does, however, indicate that lanes may be added for safety or design considerations. A second left-turn lane for the eastbound approach would add capacity to the intersection. Without the second lane, vehicles waiting to turn left would queue and back up into the adjacent through travel lane. This condition is undesirable and could result in a high occurrence of rear-end collisions. Therefore, measure 4.4-4(g) would both add capacity and improve safety and would reduce the impact to a *less-than-significant* level.

4.4-5. Cumulative impacts to roadway segments of Covell Boulevard and Pole Line Road.

Proposed Project

Study roadway segment operations under the "Cumulative Plus Project Conditions" were reviewed to identify potential cumulative roadway impacts. The results of the cumulative roadway segment level of service analysis are summarized in Table 4.4-23. As shown, the sections of Covell Boulevard between F Street and Pole Line Road and the sections of Pole Line Road from north of

Covell Boulevard to south of Eighth Street would operate at LOS F. Therefore, traffic generated by the Proposed Project in addition to other cumulative traffic would result in a ***significant*** impact.

High Density Alternative

The results of the roadway segment level of service analysis for the High Density Alternative are summarized in Table 4.4-24. As shown, the segment of Covell Boulevard between F Street and Pole Line Road would operate at LOS F with the High Density Alternative. In addition, the sections of Pole Line Road both north and south of Covell Boulevard would deteriorate to LOS F. It should be noted that the six (6) roadway segment impacts highlighted in Table 4.4-24 for the High Density Alternative would also occur with the "Cumulative Plus Proposed Project Conditions." Traffic generated by the High Density Alternative in addition to other cumulative traffic would result in a ***significant*** impact.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to Pole Line Road north of Covell Boulevard to a *less-than-significant* level. Because the segment of Pole Line Road between Covell Boulevard and Eighth Street and south of Eighth Street is in a developed area where right-of-way may not be available, the impacts would remain *significant and unavoidable*. For Covell Boulevard, although widening Covell Boulevard from four to six lanes between F Street and Pole Line Road would reduce the above identified impact to a less-than-significant level, because this segment of Covell Boulevard is not planned for being widened up to six lanes (See Table 6 of the Davis General Plan), the impact would remain *significant and unavoidable*.

The following mitigation measures are identified for the Proposed Project and the High Density Alternative.

4.4-5 Implement mitigation measure 4.4-2.

Table 4.4-23
Roadway Segment Level of Service Summary – Cumulative and Project (2015) Conditions

Roadway Segment	Facility Class	Lanes	Cumulative		Cumulative Plus Project	
			Volume (Bi-Directional)	LOS	Volume (Bi-Directional)	LOS
Covell Boulevard, between F Street and J Street	Arterial	4	29,990	D	38,800	F
Covell Boulevard, between J Street and L Street	Arterial	4	28,980	D	39,260	F
Covell Boulevard between L Street and Pole Line Road	Arterial	4	30,460	D	38,730	F
Covell Boulevard, east of Pole Line Road	Arterial	4	22,530	C	26,340	D
Pole Line Road, north of Covell Boulevard	Arterial	2	18,230	F	25,270	F
Pole Line Road, between Covell Boulevard and Eighth Street	Arterial	2	15,600	D	20,010	F
Pole Line Road, south of Eighth Street	Arterial	2	16,760	E	21,170	F
L Street, between Covell Boulevard and Eighth Street	Collector	2	4,760	C	8,040	C
F Street, between Covell Boulevard and Eighth Street.	Arterial	2	13,850	D	15,900	E

Source: Fehr & Peers, October 2004

Table 4.4-24
Roadway Segment Levels of Service – Proposed Project Versus High Density Alternative (2015)

Roadway Segment	Facility Class	Lanes	Cumulative Plus Project		Cumulative Plus High Density Alternative	
			Volume (Bi-Directional)	LOS[a]	Volume (Bi-Directional)	LOS[a]
Covell Boulevard, between F Street and J Street	Arterial	4	38,800	F	40,740	F
Covell Boulevard, between J Street and L Street	Arterial	4	39,260	F	41,500	F
Covell Boulevard between L Street and Pole Line Road	Arterial	4	38,730	F	40,490	F
Covell Boulevard, east of Pole Line Road	Arterial	4	26,340	D	27,180	D
Pole Line Road, north of Covell Boulevard	Arterial	2	25,270	F	28,170	F
Pole Line Road, between Covell Boulevard and Eighth Street	Arterial	2	20,010	F	20,970	F
Pole Line Road, south of Eighth Street	Arterial	2	21,170	F	22,040	F
L Street, between Covell Boulevard and Eighth Street	Collector	2	8,040	C	11,160	D
F Street, between Covell Boulevard and Eighth Street.	Arterial	2	15,900	E	16,360	E

Source: Fehr & Peers, October 2004
Notes:
a. Level of Service

4.4-6. Mace Boulevard Overcrossing

Proposed Project

As shown on Figure 4.4-11, an estimated 13 percent of the project traffic would travel to/from the east along Covell Boulevard. Of those, about 10 percent would use the Mace Boulevard overcrossing for access to south Davis or Interstate 80. These AM peak hour trips added to the 2015 projected traffic volumes on the overcrossing are presented in Table 4.4-25. With the project, the outside southbound travel lane and the loop on-ramp are expected to be at 97% and 69% of their design capacities, respectively, during the AM peak hour. The southbound travel lane will operate near capacity in 2015. As it reaches capacity, some through traffic may shift to the inside southbound travel lane, since it will likely be underutilized, as it is today. However, a shift was not assumed in the analysis. Because the project would not cause the facilities to operate above-capacity, the impact of the proposed project on the Mace Boulevard overcrossing is considered ***less-than-significant***.

Table 4.4-25
Mace Boulevard Overcrossing – Proposed Project (2015) Conditions AM Peak Hour

Facility	2015 Volume (vph)	2015 + Project Volume (vph)	Capacity (vph)	2015 + Project Volume/Capacity (%)
Southbound travel lane	1,686	1,789	1,850	97%
Loop on-ramp	940	997	1,450	69%

Source: Fehr & Peers, December 2004

High Density Alternative

Trips generated by the High Density Alternative added to the 2015 projected traffic volumes on the overcrossing are presented in Table 4.4-26. With the project, the outside southbound travel lane and the loop on-ramp are expected to be at 98% and 70% of their design capacities, respectively, during the AM peak hour. With the High Density Alternative, the southbound travel lane would operate near capacity in 2015. As it reaches capacity, some through traffic may shift to the inside southbound travel lane, since it will likely be underutilized, as it is today. However, this shift was not assumed in the analysis because a large volume of vehicles by-passing the on-ramp and continuing south would be turning right onto Chiles Road. Traveling in the inside lane would leave limited space to shift into the outside lane prior to Chiles Road. Because the High Density Alternative would not cause the facilities to operate above-capacity, the impact of the proposed project on the Mace Boulevard overcrossing is considered ***less-than-significant***.

Table 4.4-26
Mace Boulevard Overcrossing – High Density Alternative (2015) Conditions AM Peak Hour

Facility	2015 Volume (vph)	2015 + HD Alt Volume (vph)	Capacity (vph)	2015 + HD Alt Volume/Capacity (%)
Southbound travel lane	1,686	1,820	1,850	98%
Loop on-ramp	940	1,015	1,450	70%

Source: Fehr & Peers, December 2004

ACCESS, CIRCULATION, AND ALTERNATIVE TRANSPORTATION IMPACTS AND MITIGATION MEASURES

4.4-7. Impacts to Alternative Modes of Transportation.

Proposed Project

The proposed site plan was reviewed to address transit, pedestrian, and bicycle access and circulation.

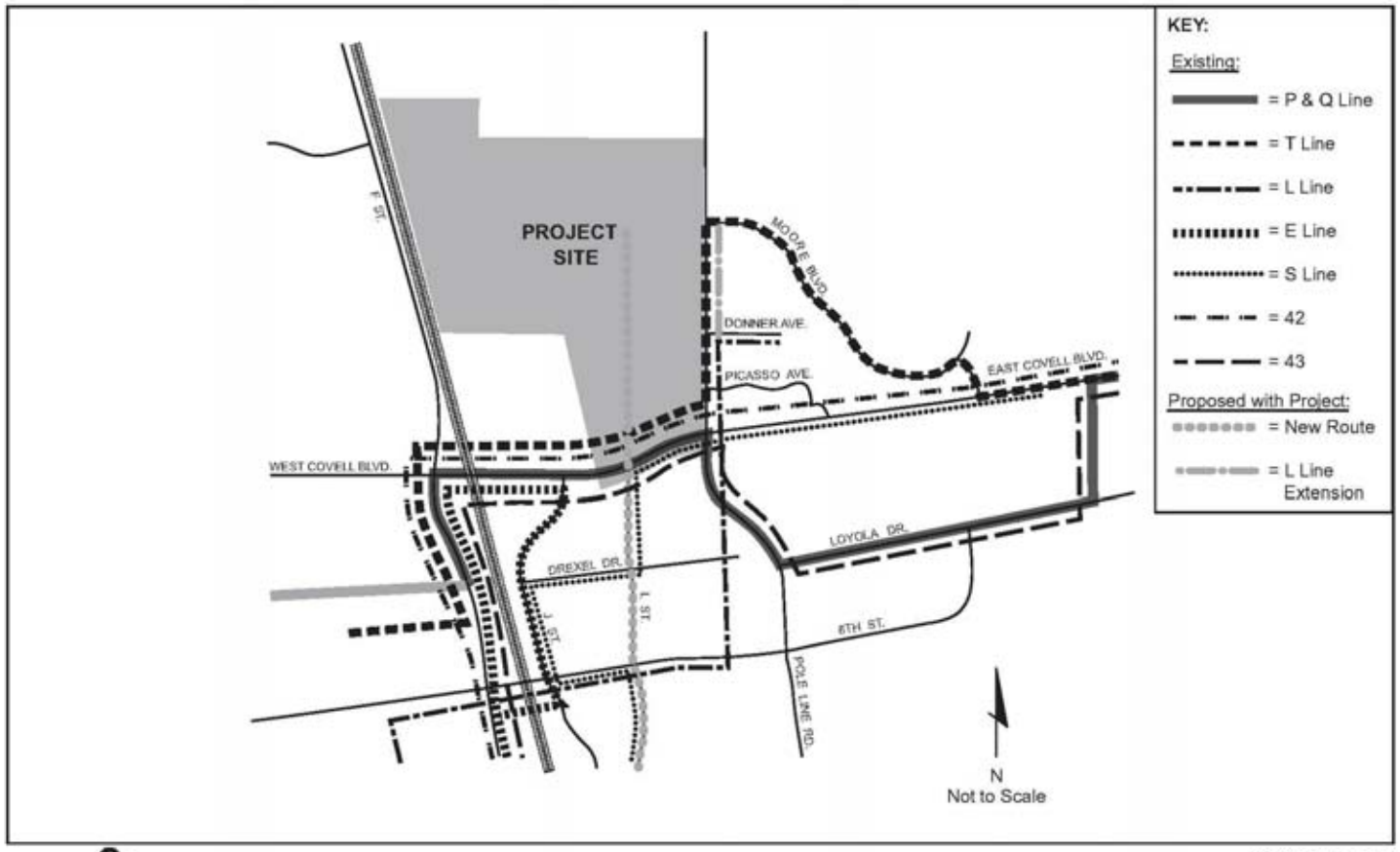
Transit

The Proposed Project would both extend and add bus routes within and near the vicinity of the project. Figure 4.4-18 presents the future transit network near the project site. In addition, the project applicant would construct a new major bus stop and shelter for westbound buses on Covell Boulevard near the corner of Pole Line Road.

The Proposed Project would include new bus stops on both sides of Pole Line Road and roundabouts to allow the Unitrans Bus Line L that currently ends at Donner Avenue to serve as far north as Moore Boulevard.

A new bus line is being developed by the project applicant in consultation with Unitrans to serve the project site via L Street. The line would travel into the site and turn around at an internal roundabout. This route would most likely connect the project site directly to UCD or downtown Davis. Existing residents along the route could also ride the bus. Because the bus line would be subsidized by the project applicant for a period of about seven years through implementation of a Covell Village Transportation Assessment District, Covell Village residents and employees would be permitted unlimited use of all Unitrans buses. Implementation of this new bus route as proposed would help encourage transit ridership and therefore reduce the amount of traffic generated by the project.

Existing loads and capacities for the transit lines in the vicinity of the project were gathered from Unitrans. This information was used to identify available capacity of existing routes. The peak direction loads and capacities are summarized in Table 4.4-27. As shown, the L Line is near capacity in the morning, the E Line is at capacity in the morning, the P Line exceeds capacity in the morning, and the Q Line exceeds capacity in the evening. Generally, capacity is available at other times of the day on these routes. The numbers reported in Table 4.4-27 reflect Fall 2003 conditions. On rainy days, demand for transit would be expected to increase beyond the numbers shown in Table 4.4-27.



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2068-4.4-10 cum transit

TRANSIT LINES WITH PROJECT
FIGURE 4.4-18

Table 4.4-27
Existing Unitrans Loads and Capacities

Unitrans Line	Peak Hour	Load	Capacity	Load/Capacity [a]
L	AM PM	71 45	75 75	95% 60%
E	AM PM	90 63	90 90	100% 70%
P	AM PM	95 48	75 75	127% 53%
Q	AM PM	48 75	75 75	64% 100%

Source: Unitrans, Anthony Palmere, October 2004
Notes:
a. Worse-case load/capacity between 6:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 7:00 p.m. reported

The Proposed Project is expected to house both students and non-students in single-family and multi-family dwelling units. To estimate the transit demand of the Proposed Project, the demand on the L Line at Wildhorse was examined.

The L Line, which begins at the center of the UCD campus, serves the Wildhorse residential, office park, and neighborhood commercial uses to the east of Pole Line Road and to the north of Covell Bouelvard. In this area, approximately 1,219 households exist (about 60 percent of which are single-family dwellings), 39,000 square feet of neighborhood commercial use, and 66,000 square feet of office space. According to data provided by Unitrans, the L Line currently accommodates about 181 boardings per day that either begin or end in this area. This corresponds to 0.15 boardings per dwelling unit between Wildhorse and the UCD campus.

The Proposed Project is similar to Wildhorse in that the project is in approximately the same geographic location. The Proposed Project would provide 1,515 residential units (about 60 percent of which would be single-family dwellings), 43,300 square feet of office space, and 58,200 square feet of retail. Applying the rate of 0.15 boardings per dwelling unit to the 1,515 proposed residential units results in an estimated 227 daily boardings that either begin or end within the proposed project site. These trips represent those associated with the University. Assuming 10 percent, or 23 trips, occur during any one peak hour, the capacity provided by a new bus route would exceed the demand of the proposed project site. Furthermore, the bus line would also provide service to residents outside of the project site but along the route, such as on L Street; this could help relieve over-capacity conditions on other routes.

While transit demand would also be added for destinations other than UCD, the University would likely be the primary draw for transit trips. The addition of a new bus line, as proposed, would be adequate to serve this demand. Therefore, project impacts to transit would be ***less-than-significant***.

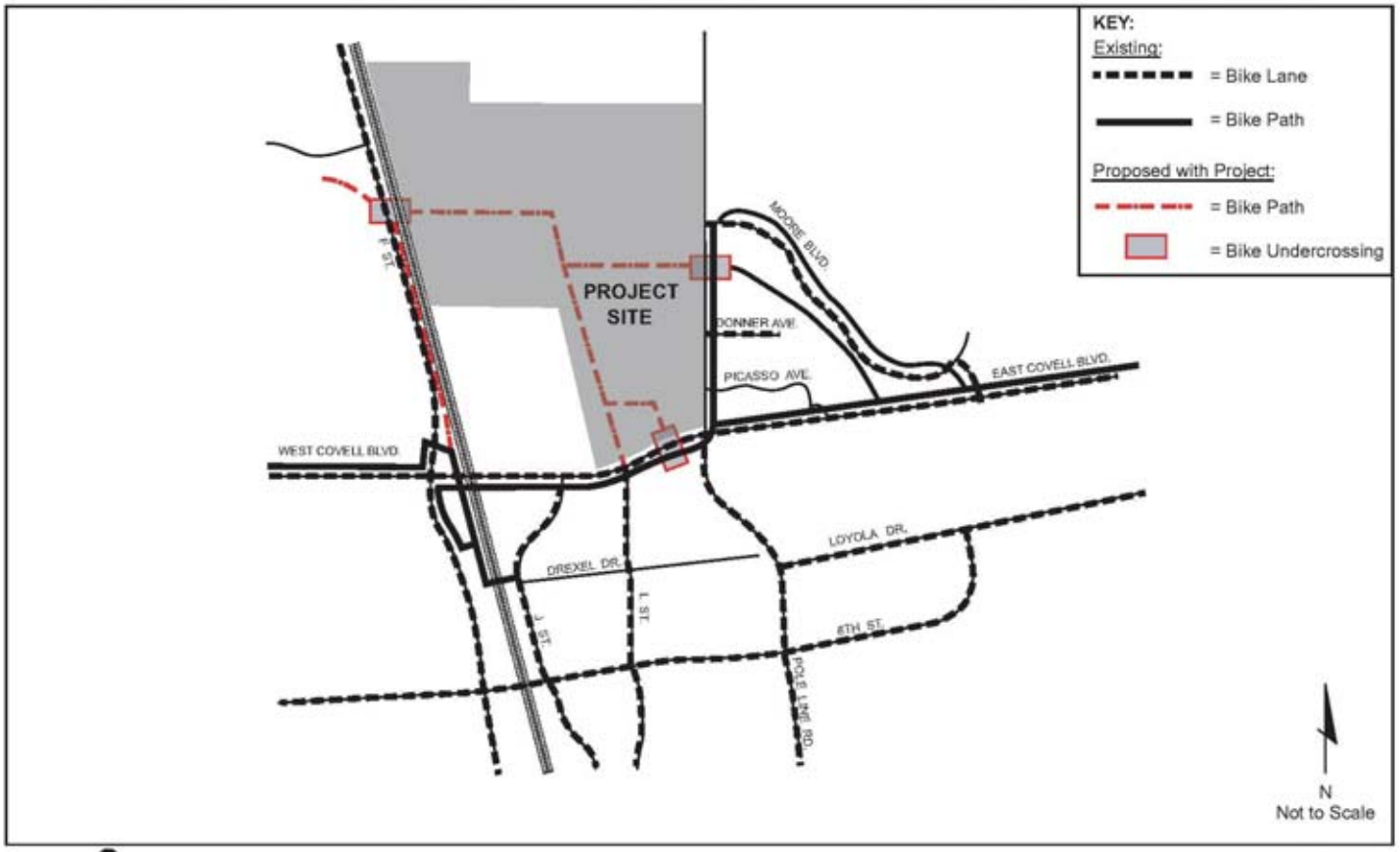
Pedestrian/Bicycle Facilities

The applicant is proposing to add bicycle facilities to help complement the Davis bicycle network by adding approximately eight miles of bicycle paths and lanes within the proposed project site. A new east-west connector would link the Class I facilities near Northstar ponds to the west and Nugget Fields to the east by way of undercrossings at F Street/railroad tracks and at Pole Line Road. The primary roadways on site would have on-street bicycle lanes and most would have separated sidewalks on both sides. Internal connections, such as between cul-de-sacs are also provided to facilitate bicycle and pedestrian connectivity.

A grade-separated undercrossing would also be constructed at F Street/railroad tracks and Pole Line Road. In addition, an undercrossing would be provided under Covell Boulevard between the site and Oak Tree Plaza. Seven additional grade-separated bicycle crossings would also be located within the project site.

Figure 4.4-19 presents the proposed bike network in the vicinity of the project. The grade-separated crossings would also facilitate pedestrian travel by creating shorter routes with fewer vehicle conflict points. Sidewalks would be provided along side all streets on site, providing for pedestrian access to the various uses on-site and the proposed transit stops.

The provided bicycle and pedestrian facilities would enhance bicycle and pedestrian access and on-site circulation, resulting in a ***less-than-significant*** impact.



FEHR & PEERS
TRANSPORTATION CONSULTANTS

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2068.4.4-11

BIKE FACILITIES WITH PROJECT
FIGURE 4.4-19

High Density Alternative

Transit

With more residential units under the High Density Alternative, more transit trips are likely to be generated. Using the same method described earlier in this document, the transit trips between UCD and the project site were estimated using existing L Line data. At a rate of 0.15 boardings per dwelling unit, the High Density Alternative would generate about 300 UCD-related daily transit trips for 1,990 housing units, compared to about 230 daily transit trips for the Proposed Project. Assuming 10 percent, or 30 trips, occur during any one peak hour, the capacity provided by a new bus route would exceed the demand of the High Density Alternative.

While transit demand would also be added for destinations other than UCD, the University would likely be the primary draw for transit trips. The addition of a new bus line, as proposed, would be adequate to serve this demand. Therefore, ***less-than-significant*** transit impacts would occur from implementation of the High Density Alternative.

Pedestrian/Bicycle Facilities

The High Density Alternative would provide the same bicycle and pedestrian amenities as the Proposed Project. These amenities would enhance bicycle and pedestrian access and on-site circulation. Therefore, similar to the Proposed Project the High Density Alternative would have ***less-than-significant*** impacts to alternative modes of transportation.

Mitigation Measure(s)
None Required.

4.4-8. Impacts to on-site access.

Proposed Project
The proposed site plan was reviewed to address vehicular access to the project site. According to Fehr & Peers' analysis for the project, the number of access points is expected to be sufficient to serve the expected demand of the Proposed Project. However, the project traffic added to the Covell Boulevard/L Street and Pole Line Road/Picasso Avenue intersections would result in unacceptable operations, as identified by Impact 4.4-1. The remaining access points would operate acceptably. Therefore, without the incorporation of roadway improvements at the Covell Boulevard/L Street and Pole Line Road/Picasso Avenue intersections, ***significant*** site access impacts would result.

High Density Alternative

With the High Density Alternative, the site access would be the same as that of the Proposed Project. The traffic generated by the High Density Alternative would deteriorate operations at two access points: Covell Boulevard/L Street and Pole Line Road/Picasso Avenue, as identified by Impact 4.4-1. The remaining access points would operate acceptably. Therefore, without the incorporation of roadway improvements at the Covell Boulevard/L Street and Pole Line Road/Picasso Avenue intersections, ***significant*** site access impacts would result.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the significant traffic impact related to site access to a *less-than-significant* level.

The following mitigation measures have been identified for the Proposed Project and the High Density Alternative.

4.4-8(a) Implement Mitigation Measure 4.4-1(a) and 4.4-1(b).

In addition, the following mitigation measure has been identified for the High Density Alternative but not the Proposed Project.

4.4-8(b) Implement Mitigation Measure 4.4-1(c).

4.4-9. Impacts to on-site circulation.

Proposed Project

The site plan includes a network of roadways. A primary north-south connector (Covell Village Road) is proposed between Covell Boulevard (opposite L Street) and Pole Line Road (north of Moore Boulevard). Branches from this roadway would connect the northwest quadrant of the site as well as Pole Line Road opposite Moore Boulevard, Donner Avenue, and Picasso Avenue. Various local roads would provide connections to the residences and other uses proposed on site. The project applicant has submitted the roadway cross-sections proposed throughout the site for preliminary review. The final site plan shall conform to the requirements set forth by the City of Davis. Because final roadway widths, turning radii, etc. would conform to City of Davis standards, a ***less-than-significant*** impact would result.

High Density Alternative

The site layout under the High Density Alternative would be similar to that of the Proposed Project. Various roads (collector and local) would provide vehicular circulation throughout the site. Similar to the Proposed Project, the final site plan shall conform to the requirements set forth by the City of Davis. Because final roadway widths, turning radii, etc. would conform to City of Davis standards, a ***less-than-significant*** impact would result.

Mitigation Measure(s)
None Required.

4.4-10. Impacts to parking supply and demand regarding the Village Center.

Proposed Project
The Davis Municipal Code states the off-street parking requirements under section 40.25.090. The project applicant has supplied information about the proposed parking supply within the Village Center; however, the amount of parking that would be provided for uses outside of the Village Center is unknown. The parking requirements for the Proposed Project are presented in Table 4.4-28.

For some uses, parking requirements are not stated in the City's code; therefore, peak demand assumptions were made based on other studies conducted by Fehr & Peers or based on industry standard parking demand rates.

Currently, site plans and proposed parking supply have not been provided for the uses outside of the Village Center (i.e., residential, senior care, hospice, schools). The project sponsor would be required to comply with City parking code requirements to provide enough parking for these uses. The provision of parking on the school site would be the responsibility of the school district. The current City zoning ordinance standards are one space per staff member for elementary or junior high and three spaces per two staff members for high school. Use of the site as a high school would require more parking. Inadequate parking on-site could result in spillover onto the residential streets. It is assumed that the school district satisfy the City's standards.

As shown in Table 4.4-28, the parking requirements for the Village Center would be 946 spaces. Because the peak demand for a church is typically on the weekend, when parking demand for the office space is minimal, a reduction to the required number of spaces could be allowed. The two uses could effectively share the same parking spaces. Therefore, with a reduction of 108 spaces, equal to the requirement for the office use, 838 spaces would be required. With a proposed supply of 681 spaces, an estimated deficit of approximately 160 spaces would occur. Therefore, the number of parking spaces currently proposed for the Village Center would result in a ***significant*** impact to parking supply.

High Density Alternative
The uses proposed for the Village Center would remain unchanged with the High Density Alternative. With a proposed supply of 681 spaces and an estimated demand for 838 spaces, a deficit of 157 spaces would occur. The amount of parking that would be provided for uses outside of the Village Center is unknown. Therefore, the number of parking spaces currently proposed for the Village Center would result in a ***significant*** impact to parking supply.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the significant parking impact to a *less-than-significant* level.

The following mitigation measures have been identified for the Proposed Project and the High Density Alternative.

4.4-10(a) *The site plan shall be revised to provide additional parking spaces within the Village Center, consistent with the City of Davis Zoning Ordinance. The site plan shall be revised prior to issuance of building permits for the review and approval of the Community Development Director.*

Or;

The applicant shall prepare a shared parking analysis and parking management plan to support a parking supply that is lower than City code requirements, but consistent with the purpose of the Planned Development chapter of the Zoning Ordinance. The plan shall demonstrate that adequate parking would be supplied to meet the demand. The plan shall be reviewed and approved by the Planning Commission at a public hearing with the Final Planned Development.

Table 4.4-28
Parking Requirements and Proposed Supply

	Parking Requirement	
Use (Size)	**Code**	**No. of Spaces**
Retail (58.2 ksf)	1 per 300 sf	194
Office (43.3 ksf)	1 per 400 sf	108
Work/Live Residence (20 units)	Not available	30[a]
Apartments (60 units)	1-bedroom: 1 per unit 2-bedroom: 1 3/4 per unit 3+-bedroom: 2 per unit	105[b]
Church (9.72 ksf)	1 per 4 seats	146[c]
Health Club (30 ksf)	Not available	131[d]
Meeting (11.25 ksf)	1 per 100 sf	113
Daycare (2.8 ksf)	1 per staff member plus loading	12[e]
Hotel (58 rooms)	1 per room	58
Restaurant (6 ksf)	1 per 3 seats	40[f]
Gas Station (3.6 ksf)	Not available	9[g]

	Total Required	946
	Total Minus Shared Spaces	838
	Proposed Supply	681
	Surplus (+) / Deficit (-)	***-157***

Source: Fehr & Peers, October 2004
Notes: d.u. = dwelling units; ksf= 1,000 square feet

a. Assumes 1.5 per unit
b. Assumes the following breakdown: 10 1-bedroom, 20 2-bedroom, and 30 3+-bedroom apartments
c. Assumes 60 seats per 1,000 sf
d. Assumes 4.37 per 1,000 sf based on ITE's *Parking Generation* (2nd Edition) manual
e. Assumes 6 staff, or 2.2 staff per 1,000 sf (based on other day care surveys conducted by Fehr & Peers), plus 6 spaces for loading/unloading
f. Assumes 20 seats per 1,000 sf
g. Assumes 1 per 400 sf

4.4-11. Impacts to traffic flow from construction traffic associated with grading and development of the project site.

Proposed Project

Trips to the site during construction would be necessary for delivery of materials and hauling of excavated materials. The project sponsor has not provided information detailing the amount of construction traffic that would access the site during each phase of construction. Excess construction traffic could create traffic impacts on the surrounding roadway network, which would be considered ***significant***.

High Density Alternative

Similar to the Proposed Project, the amount of construction traffic that would access the site for the High Density Alternative is unknown. Excess construction traffic could create traffic impacts on the surrounding roadway network, which would be considered ***significant***.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the significant construction traffic impact to a *less-than-significant* level.

The following mitigation measure has been identified for the Proposed Project and the High Density Alternative.

4.4-11 Prior to any construction taking place on the site, the project applicant shall prepare a Construction Traffic Management Plan for review and approval by the City Engineer. The plan should include all plans for temporary traffic control, temporary signage and striping, location points for ingress and egress of construction

vehicles, staging areas, and timing of construction activity which appropriately limits hours during which large construction equipment may be brought on or off the site.

Endnotes

[1] Traffic Impact Study, Covell Village Project, Fehr & Peers, October 2004.