D. TRANSPORTATION, CIRCULATION AND PARKING

This section describes the existing traffic and circulation, parking and transit conditions on the Project site and its vicinity and provides an analysis of the Project's potential impacts. Figure IV.D-1 shows the location of the proposed Project and adjacent street system.

This analysis evaluates the traffic-related impacts of the proposed Project during both the weekday morning and evening peak hours. Traffic impacts are assessed at 40 critical intersections in the study area for the following six scenarios:

1. Existing Conditions;
2. Existing plus Project Conditions;
3. Year 2010 Background Conditions Without Project;
4. Year 2010 Background Conditions Plus Project;
5. Year 2025 Conditions Without Project; and
6. Year 2025 Conditions Plus Project.

The Project's potential effects on transit services, pedestrian, and bicycle facilities, and on- and off-street parking are also evaluated. Measures that would mitigate these impacts to a less-than-significant level are recommended.

1. Existing Conditions

The transportation-related context in which the Uptown Project would be constructed and would operate is described below, beginning with a description of the study area and the street network that serves the Project. Next, existing levels of transit service, bicycle and pedestrian facilities, and existing off- and on-street parking in the vicinity of the Project site are described. Intersection and roadway levels of service (LOS) are then defined and current conditions are summarized. The setting subsection then discusses a series of planned transportation improvements that have been assumed to be in place as part of the traffic analysis.

a. Study Area. The proposed Project site, illustrated in Figure IV.D-1, is located in downtown Oakland and consists of nine blocks. Blocks 1-6 are located in the area bounded by San Pablo Avenue, Telegraph Avenue, 18th Street and Thomas L. Berkley Way (20th Street). Block 7 is west of Telegraph Avenue between 20th and 21st Streets. Block 8 is on the southeast corner of the Telegraph Avenue and Thomas L. Berkley Way (20th Street) intersection and Block 9 is on the southwest corner of the Telegraph Avenue/22nd Street intersection.

The intersections listed in Table IV.D-1 and illustrated in Figure IV.D-2, were identified as intersections that could be significantly impacted by the proposed Project.

All of the study intersections are signalized, except the San Pablo Avenue/William Street and San Pablo Avenue/18th Street intersections which are stop controlled on William Street and 18th Street. The 38 signalized study intersections were selected in consultation with the City of Oakland. Locations were chosen based on the signalized intersections where the Project would add 50 or more peak hour trips and where the intersection potentially would operate at an unacceptable level of service.

Figure IV.D-1: Project Location

8x11 B&W

Figure IV.D-2: Study Intersections

8x11

Table IV.D-1: Intersections Significantly Impacted by Project

1. San Pablo Avenue/31st Street	20. Broadway/17th Street
2. San Pablo Avenue/Market Street	21. Broadway/15th Street
3. San Pablo Avenue/27th Street	22. Broadway/14th Street
4. San Pablo Avenue/West Street/25th Street	23. Frontage Road/West Grand Avenue
5. San Pablo Avenue/West Grand Avenue	24. Mandela Parkway/West Grand Avenue
6. San Pablo Avenue/Thomas L. Berkley Way (20th Street)	25. Northgate Avenue/West Grand Avenue
7. San Pablo Avenue/William Street	26. Webster Street/Grand Avenue
8. San Pablo Avenue/19th Street	27. Harrison Street/Grand Avenue
9. San Pablo Avenue/18th Street	28. El Embarcadero/Grand Avenue
10. San Pablo Avenue/17th Street	29. Mac Arthur Boulevard/Grand Avenue
11. Telegraph Avenue/West Grand Avenue	30. Mac Arthur Boulevard/Lake Shore Avenue
12. Telegraph Avenue/Thomas L. Berkley Way (20th Street)	31. Lake Park Avenue/Lake Shore Avenue
13. Telegraph Avenue/William Street	32. Brush Street/18th Street
14. Telegraph Avenue/19th Street	33. Castro Street/18th Street
15. Telegraph Avenue/18th Street	34. Martin Luther King Jr. Way/18th Street
16. Telegraph Avenue/17th Street	35. Brush Street/17th Street
17. Broadway/West Grand Avenue	36. Castro Street/17th Street
18. Broadway/Thomas L. Berkley Way (20th Street)	37. Martin Luther King Jr. Way/17th Street
19. Broadway/19th Street	38. Jefferson Street/17th Street
	39. Franklin Street/17th Street
	40. Webster Street/17th Street

Source: Korve Engineering, 2003.

Additionally, the two unsignalized intersections on San Pablo Avenue (intersections 7 and 9) adjacent to the Project were analyzed.

b. Street Network. The regional and local street networks that serve the Project site are described below.

(1) Regional Roadways. The Project area is primarily served by four regional roadways, as described below.

Interstate 580 (I-580) is a regional freeway located east of the Project site, extending between Interstate 80 in Emeryville and Interstate 280 in San Jose. Four lanes are generally provided in each direction on this freeway near the Project area. Trucks are prohibited on I-580 in the downtown Oakland area. Average daily traffic on I-580 between Grand/Van Buren and Oakland/Harrison was 141,000 vehicles in 2002.[1] I-580 extends from Route 5 southwest of Vernalis to I-80 in Oakland via Dublin and Hayward. It is located 18 blocks away from the Project site. The closest ramps from I-580 to the Project site are at the Harrison Street/Oakland Avenue interchange.

Interstate 880 (I-880) is a major north-south regional freeway located west of the Project site, extending between Interstate 80 in Emeryville and Interstate 280 in San Jose. Four lanes are

[1] Caltrans, Year 2002 Traffic Volumes on the State Highway System.

generally provided in each direction on this freeway near the Project area. The closest exit from I-880 to the Uptown Project is Broadway (both north and south bound), which is 12 blocks from the Project site. Another freeway access is located further south at Oak Street. Average daily traffic on I-880 north of Broadway was 229,000 vehicles in 2002.[2]

Interstate 980 (I-980) is the closest freeway to the Project site and extends from I-880 to I-580/ SR-24 in Oakland. I-980 has three lanes in each direction in the general vicinity of the Project area. Average daily traffic on I-980 between 18th Street and I-580 was 121,000 vehicles in 2002.[3] To reach the site, vehicles can exit I-980 at the 17th Street/18th Street interchange, which is only three blocks from the Project. Additional access from I-980 in the study area is provided at 27th/Grand and 12th/14th Street.

State Route 24 **(SR 24)** runs from Walnut Creek in the east to Oakland on the west and has four lanes in each direction near downtown Oakland. Average daily traffic on SR-24 northeast of the 580/980 Junction was 141,000 vehicles in 2002.[4]

(2) Local Roadways. A description of the local roadways that serve the Project area is provided below.

Broadway is a major arterial that runs in a north-south direction from Jack London Square in the south to State Route 24 (SR 24) to the north. In the vicinity of the Project, Broadway consists of two through lanes in each direction. There are traffic signals at most of the major intersections along Broadway, and separate left and right turn lanes at some key intersections.

Grand Avenue runs from I-80 on the west to beyond I-580 to the east. It generally has two lanes in each direction along with a bike lane.

San Pablo Avenue borders the west side of the Project site. It begins in downtown Oakland as a cul-de-sac surrounded by a pedestrian area and travels northwesterly through Emeryville, Berkeley, and beyond. San Pablo Avenue generally has two travel lanes in each direction.

Telegraph Avenue borders the east side of the Uptown Project. It is a major north-south arterial, beginning at its intersection with Broadway in downtown Oakland and continues north into Berkeley. Generally, there are two through lanes in each direction on Telegraph.

Martin Luther King Jr. Way extends from downtown Oakland to Berkeley and is located just to the west of the Uptown Project site. It has two travel lanes in the north and south directions.

Franklin Street is a one-way street from 6th Street in the south to Broadway north of the Project. Near the Project there are three northbound traffic lanes on Franklin Street. It is located one block east of Broadway. Franklin Street forms a one-way couplet with Webster Street. These two streets

[2] Ibid.

[3] Ibid.

[4] Ibid.

are designed to carry much of the north/south through traffic in the downtown Oakland area and traffic signals have been coordinated to improve traffic flow.

Webster Street is a one-way street with three southbound traffic lanes, and is located one block east of Franklin Street. It provides a direct connection to the City of Alameda via the Webster Tube. Traffic signals on both Franklin and Webster are coordinated to facilitate through traffic on these two key roadways.

Harrison Street has four lanes southbound and five lanes northbound between Thomas L. Berkley Way (20th Street) and Grand Avenue. There are three lanes each direction on Harrison between Grand Avenue and 27th Street, with two lanes each direction north of 27th Street and south of Thomas L. Berkley Way (20th Street). Harrison is connected to the Posey Tube and is one-way northbound south of 10th Street. Harrison Street forms a one-way couplet with Oakland Avenue north of 29th Street, with traffic traveling southbound on Harrison and northbound on Oakland.

William Street is a westbound one-way street currently and is entirely inside the Project site. There is parking along both sides of the street. Vehicles enter the street from Telegraph Avenue and exit to San Pablo Avenue. The Uptown Project proposes to convert William Street to two-way traffic to improve access to and from the Project.

14th Street is an arterial roadway located about four blocks south of the Project site. It has two lanes in both the east and west directions and serves as a major east-west route through downtown Oakland. I-980 can be accessed from 14th Street.

17th Street is a one-way roadway in the eastbound direction. It runs from West Street west of I-980 to Lake Merritt. It ranges from two to four lanes in width.

18th Street forms the southern boundary of the Uptown Project. It runs from Wood Street on the west to Telegraph Avenue on the east. 18th Street is a two-way road west of West Street and also between Telegraph Avenue and San Pablo Avenue. It is one-way eastbound between Martin Luther King Jr. Way and San Pablo Avenue and one-way westbound between West Street and Martin Luther King Jr. Way. The two-way portion near the Project has one lane in each direction.

19th Street is a westbound one-way street which passes through the Project site and forms a couplet with 17th Street. It has two traffic lanes in the westbound direction.

Thomas L. Berkley Way (20th Street) is located on the north side of the site and has two through lanes in each direction. Buses use Thomas L. Berkley Way (20th Street) frequently, with 12 buses per hour during most of the day. All of the buses which operate on San Pablo turn onto Thomas L. Berkley Way (20th Street) before entering downtown Oakland.

27th Street a four-lane arterial that extends from Market Street to West Grand Avenue. At the northern end, it connects to the I-980 southbound off-ramp and I-980 northbound on-ramp.

c. Existing Transit Services. Existing transit service near the Project site includes bus service provided by the Alameda-Contra Costa Counties Transit District (AC Transit) and Greyhound. It also includes rail services from Bay Area Rapid Transit (BART) and Amtrak. Each of these services is

described in the following sections. A visual summary of transit services provided in the area is presented in Figure IV.D-3.

(1) AC Transit. The Project site is served by several AC Transit bus lines running through major north-south corridors: San Pablo Avenue (Line 15, 72, 72M, 72R), Telegraph Avenue (Line 40, 40L, 43) and Broadway (Line 11, 12, 51). No bus lines running east-west go through the Project site. Line 12 is the closest east-west line and runs along Grand Avenue near Lake Merritt. Table IV.D-2 describes the bus route names and service schedules.

AC Transit bus lines connect the Project site to major employment centers such as downtown Berkeley and the Oakland city center. Many bus lines are focused on serving commuter traffic. For example, Line 72R runs along San Pablo with limited stops every 12 minutes. In addition, Line 40L and 51 connect the Project site to the UC Berkeley Campus.

Most of the buses run every 5 to 15 minutes during the peak and 20 to 30 minutes during non-peak periods. The current fare for local bus service in the east bay is $1.50 for adults, $0.75 for seniors, the disabled and people between 5 to 17 years of age, and free for children under five.

Information on maximum load points was obtained from various sources compiled by AC Transit Long Range Planning & Data Analysis Department.[5] Table IV.D-3 summarizes current bus service demand near the Project. The table also shows the loading demand/capacity percentages. Southbound lines 40/40L and 72, together with northbound 43 and 51, have the highest maximum loads at 151 to 248 percent of capacity. The bus lines with the lowest loads are northbound lines 11 and 15, with maximum loads of 35 percent and 73 percent, respectively.

The ridership data suggests that bus lines running along major arterials near the site have high maximum demand/capacity ratios and over-crowding may occur. However, new routes and service schedules were implemented in July 2003 to improve bus services. The establishment of the new 72R rapid bus, together with other modifications enhancing the services, has eased some crowding issues.

(2) BART. The Bay Area Rapid Transit (BART) is an automated rapid transit system serving the three BART counties of Alameda, Contra Costa, and San Francisco as well as northern San Mateo County. The 19th Street/Oakland Station is conveniently located near the Oakland Uptown Project. Three of the five existing BART lines travel through this station:

1. Richmond – Daly City;
2. Richmond – Fremont; and
3. Pittsburg/Bay Point – Millbrae.

[5] Howard Der, Associate Transportation Planner of AC Transit, compiled the data file from the following sources:

- Fall 1997-Winter 1998 Systemwide Boarding & Alighting Survey
- Summer 2002-Spring 2003 APC Data Collection Units
- April 2001 Line 72 Boarding & Alighting Survey

Figure IV.D-3: Existing Transit Network

8x11

Table IV.D-2: AC Transit Service Summary

Transit Line	Route Name	Service Frequency
11	Diamond District – Downtown Oakland – Piedmont	Weekdays: 20 minutes peak and 30 minutes off peak Weekends: 1 hour
12	MacArthur BART to Downtown Oakland	Weekdays: 20 minutes peak and 30 minutes off peak Weekends: 30 minutes
15	Montclair Transit Center – Downtown Oakland – El Cerrito BART (alternate trips to Berkeley BART only)	Weekdays: 15 minutes before 7:30 p.m. and 30 minutes afterwards Weekends: 20-30 minutes
40/40L	Berkeley – Oakland – Bay Fair BART	40L has limited service stops. Weekdays: 5-20 minutes depending on stops Weekends: 20-30 minutes
43	El Cerrito – Eastmont Transit Center	Weekdays: 5-20 minutes depending on stops Weekends: 20-30 minutes during weekends
51	Alameda – Oakland – Berkeley	Weekdays: 10 to 15 minutes peak and 20 minutes off peak. Weekends: 15 to 20 minutes Hourly overnight service from 12 a.m. to 5 a.m. throughout the week
72/72M	Hill Top Mall – Oakland (72) Richmond – Oakland (72M)	Weekdays and weekends: 15 to 18 minutes (frequency of 72 and 72M combined) Hourly overnight service from 12 a.m. to 5 a.m.
72R	Along San Pablo Avenue from Contra Costa College in San Pablo to Jack London Square	Weekdays only 12 minutes from 6 a.m. to 7 p.m.

Source: AC Transit, July 2003.

BART 19th Street Station Layout. BART 19th Street station is the closest BART station to the Project site. The station is located at 1900 Broadway and has six access points:

1. Thomas L. Berkley Way (20th Street) (north access);
2. Broadway/20th Street (north access);
3. Broadway/ between 19th & Thomas L. Berkley Way (20th Street) (central access);
4. Broadway/ 19th Street (central access);
5. Broadway/17th Street (south access); and
6. Telegraph Avenue (south access).

Table IV.D-3: AC Transit Maximum Load Points

Line	Dir.	Seat Capacity	AM Peak Hour			PM Peak Hour			Max Load/ Cap.
			Max Load	Time	Location	Max Load	Time	Location	
11	NB	40	14	7:33	19th & Broadway	9	10:40	19th & Broadway	35%
	SB	40	13	17:57	19th & Broadway	39	14:40	19th & Broadway	98%
12	NB	Data Not Available							
	SB	Data Not Available							
15	NB	40	29	8:41	20th & San Pablo	22	16:13	20th & Broadway	73%
	SB	Data Not Available							
40/ 40L	NB	45	51	8:40	18th & Telegraph 19th & Telegraph 20th & Telegraph	46	14:10	18th & Telegraph 20th & Telegraph	113%
	SB	45	68	11:46	19th & Telegraph 20th & Telegraph	53	14:40	17th & Telegraph	151%
43	NB	40, 44, 45	62	9:30	18th & Telegraph	64	16:35	18th & Telegraph	160%
	SB	40, 44, 45	53	9:38	17th & Telegraph	43	14:38	17th & Telegraph	133%
51	NB	40, 44	47	8:31	20th & Broadway	99	13:01	20th & Broadway	248%
	SB	40, 44	45	11:31	20th & Broadway	42	13:16	19th & Broadway	113%
72	NB	37, 62, 63	47	6:23	20th & San Pablo 20th & Telegraph	38	15:42	18th & Telegraph 19th & Telegraph	132%
	SB	37, 62, 63	108	11:18	18th & Telegraph 19th & Telegraph 20th & San Pablo 20th & Telegraph	37	16:38	20th & San Pablo	174%

Source: Howard Der, AC Transit Long Range Planning & Data Analysis Department.

BART trains stop two and three levels below the street. Passengers access the concourse level via stairs or escalators from the street level. In the morning, the escalators operate in 'up' mode to accommodate the higher number of passengers exiting to the street level. An elevator is available at 1746-1750 Broadway. At the concourse level, each of the north, south, and primary access points has a station agent booth, fare gates, phones, and ticket, change and add-fare machines. The station layout and an inventory of these items are illustrated in Figure IV.D-4.

There are 14 fare gates at the station. Two of these gates were added at the station within the last year. During the morning peak period, four entry gates and 10 exiting gates are open; in the afternoon peak period, 10 entry gates and four exiting gates are open. According to BART, the customer service standard is to clear any passenger within 1 minute with one gate being out of service. Also, the standing queues should not be longer than 15 feet or back to the escalator.[6]

Site observations were conducted during the morning peak in July 2003 to confirm existing operating characteristics at the 19th Street Station. The busiest access point is the north access to Thomas L. Berkley Way (20th Street), which also has the most fare gates (five exiting gates and two entry gates in the morning). The majority of the passengers take the shorter path to access Thomas L. Berkley Way (20th Street) using the three exiting gates to the right of the agent booth, while the two exiting gates to the left of the agent booth are underused.

[6] Dean Leonard, BART Manager of Schedule and Services, telephone communication, January 5, 2001.

Figure IV.D-4: 19th Street BART Station Layout-Concourse Level

size?

Passenger queues of 2 to 5 people were observed but the queue was generally moving and dissipated within 20 seconds. The Broadway/19th Street access operates with three exiting gates and one entry gate and is also well used in the morning. The demand at the south accesses at Broadway/17th Street and Telegraph Avenue is relatively light. The two south accesses combine to operate with two exiting gates and one entry gate in the morning.

Short queues (2 to 3 people) at station machines were observed due to people having difficulties using the ticketing vending machines or machines malfunctioning.

BART Ridership. April and May 2003 weekday entry/exit data was obtained from the Alameda County Planning Department of BART. At the 19th Street Station there are approximately 7,700 riders entering and 7,550 riders exiting the station on an average weekday. The morning peak hour at the station occurs between 8:00 a.m. and 9:00 a.m. and the evening peak is 5:00 p.m. to 6:00 p.m., based on the total number of passengers entering and exiting the station hourly.

Table IV.D-4 presents the number of passengers entering and exiting the 19th Street BART station during the morning and evening peak hours. As shown in Table IV.D-4, most of the passengers are exiting the station in the morning peak hour and entering the station during the evening peak hour.

Table IV.D-4: Number of Passengers Using 19th Street Station

Movement	8:00 a.m. to 9:00 a.m.	5:00 p.m. to 6:00 p.m.
Entries	552	1,728
Exits	1,702	489
Total	2,254	2,217

Source: BART, April and May 2003.

In general, queues at the entry/exit gates are longest when trains arrive because passengers alight and leave the station at the same time. Passengers entering the station typically do not create long queues because of the more random arrival pattern. Therefore, the morning exiting data has been analyzed to identify congestion in the station. Richmond-Fremont trains have the most passengers leaving at the 19th Street station in the morning peak hour (8am to 9am), with an average of 102 and a maximum of 170 alighting passengers per train. Currently, there are 10 exit gates during the morning peak. Therefore, each gate needs to handle an average of 17 passengers. All passengers can pass through the exit gate in less than 1 minute, which is one of the BART service standards.

Daily passenger loads on different BART lines vary significantly at the 19th Street Station. On the higher end, about 17,980 passengers pass through the station on the southbound Pittsburg/Bay Point – Millbrae line. On the lower end, about 3,960 passengers pass through the station on the northbound Fremont-Richmond line. The southbound trains tend to have higher passenger loads than their northbound counterparts. The existing passenger load of each line passing through the 19th Street station is summarized in Table IV.D-5.

Table IV.D-5: Daily Passengers on BART Lines Through 19th Street Station

BART Lines	Number of Passengers Passing through the 19th Street Station
Richmond - Daly City	8,930
Daly City – Richmond	7,848
Richmond – Fremont	4,655
Fremont – Richmond	3,957
Pittsburg/Bay Point – Millbrae	17,973
Millbrae - Pittsburg/Bay Point	16,224
TOTAL	**59,587**

Source: BART, April and May 2003.

During peak hours, transbay BART lines exhibit significant directional flow characteristics. Most passengers are traveling towards San Francisco in the morning and away from San Francisco in the

evening. The Richmond-Fremont line, however, has a more homogeneous passenger load across time and directions. Tables IV.D-6 and IV.D-7 present detailed information about average midweek (Tuesday, Wednesday and Thursday) peak hour passenger flows and load factors on the BART lines passing through the 19th Street BART station, based on data provided by BART.

(3) Other Public Transportation. At Jack London Square, Amtrak service is available and includes commuter service between San Jose and Sacramento. In addition, ferries to San Francisco are available at Jack London Square. A Greyhound Terminal is located at 2103 San Pablo Avenue.

d. Pedestrian and Bicycle Facilities. A Class I bike path provides a completely separate right-of-way for exclusive use of bicycles and pedestrians. A Class II bike lane provides exclusive usage for bicyclists with "BIKE LANE" marking and solid white striping on the roadway. Typically, striped bike lanes are 5 to 6 feet wide. A Class III bicycle route is established by placing Bike Route signs along the roadway and pavement markings are typically not installed.

Currently, the only bicycle facility located in proximity to the proposed Uptown Project is on Grand Avenue. The type of facility ranges from a Class II bike lane to a Class III bike route (signage only) along different stretches of this road.

Figure IV.D-5 illustrates the proposed bicycle facilities near the Uptown Project that are in the City of Oakland Bicycle Master Plan, adopted in July 1999. This plan recommends Class II bike routes along San Pablo Avenue, Martin Luther King Jr. Way southwest of San Pablo Avenue, Clay Street southwest of San Pablo Avenue, and Thomas L. Berkley Way (20th Street) northeast of San Pablo Avenue. Class II bike lanes are shown on Telegraph Avenue and portions of 16th and 17th Streets. The City of Oakland plans to reconfigure Telegraph Avenue between 16th Street and Thomas L. Berkley Way (20th Street) from two travel lanes in each direction with parking along each side of the street to a single travel lane each direction with a center left turn lane and a bike lane on each side. The on-street parking will be preserved. This Project is funded and currently in design development.

The existing and proposed bicycle facilities from the Alameda Countywide Bicycle program are presented in Figure IV.D-6. Telegraph Avenue is recommended as a proposed Class II bike route according to the Alameda Countywide Bicycle Program. Limited bicycle parking is available near the 19th Street BART station. Two "U"-type bicycle racks, with a total capacity of six bikes, are located at the entrance to the station from Thomas L. Berkley Way (20th Street). A single "U" rack with capacity for three bikes is present at the Broadway entrance between 19th Street and Thomas L. Berkley Way (20th Street). Bicycles are also often locked to the fences at the various entrances to the station.

e. Parking. A description of existing on- and off-street parking within the Project vicinity is provided below.

(1) Off-Street Parking. As illustrated in Figure IV.D-7, many off-street parking spaces are present in the Project area. On the block bounded by San Pablo Avenue, Telegraph Avenue, 18th Street, and 19th Street there are 152 surface spaces. One block to the north between 19th Street and William Street, there are 758 surface and structure parking spaces. Between William Street and Thomas L. Berkley Way (20th Street) there are 321 surface spaces. On the portion of the block west

Table IV.D-6: Peak Hour Passengers and Load Factors on BART Through 19th Street Station – Before Boarding and Alighting

BART Line	Time	Passengers Per Hour	Average Load (Passengers/ BART Car)	Average Load Factors* (Passengers/Seat)
Richmond – Daly City	8-9 a.m.	2,784	71.0	101%
	5-6 p.m.	950	24.3	35%
Daly City – Richmond	8-9 a.m.	944	24.2	35%
	5-6 p.m.	2,517	64.2	92%
Richmond – Fremont	8-9 a.m.	864	44.2	63%
	5-6 p.m.	813	34.8	50%
Fremont – Richmond	8-9 a.m.	1,011	40.2	57%
	5-6 p.m.	791	36.5	52%
Pittsburg/Bay Point – Millbrae	8-9 a.m.	5,264	72.9	104%
	5-6 p.m.	1,115	23.1	33%
Millbrae – Pittsburg/Bay Point	8-9 a.m.	833	20.4	29%
	5-6 p.m.	6,900	77.8	111%

* Assuming 70 seats per car, which is the average for the BART fleet.

Source: BART, April and May 2003.

Table IV.D-7: Peak Hour Passengers and Load Factors on BART Through 19th Street Station – After Boarding and Alighting

Bart Line	Time	Passengers Per Hour	Average Load (Passengers/ Bart Car)	Average Load Factors* (Passengers/Seat)
Richmond - Daly City	8-9 a.m.	2,813	71.7	102%
	5-6 p.m.	1,166	29.8	43%
Daly City – Richmond	8-9 a.m.	694	17.8	25%
	5-6 p.m.	2,544	64.8	93%
Richmond – Fremont	8-9 a.m.	680	34.8	50%
	5-6 p.m.	1,171	49.2	70%
Fremont – Richmond	8-9 a.m.	653	25.9	37%
	5-6 p.m.	902	41.7	60%
Pittsburg/Bay Point – Millbrae	8-9 a.m.	5,071	70.2	100%
	5-6 p.m.	1,353	28.0	40%
Millbrae - Pittsburg/Bay Point	8-9 a.m.	586	14.3	20%
	5-6 p.m.	7,063	79.7	114%

* Assuming 70 seats per car, which is the average for the BART fleet.

Source: BART, April and May 2003.

of Telegraph Avenue between 20th and 21st Streets that will be part of the Uptown Project, there are 11 surface spaces.

A parking survey was conducted on Tuesday June 10, 2003 between 7:00 a.m. and 9:00 a.m. at the City Park Parking Garage, bordered by Telegraph Avenue, San Pablo Avenue, William Street, and 19th Avenue. The survey questions requested information about trip origin, trip destination, trip purpose, and frequency of parking in downtown Oakland. Over 220 people participated in the survey.

Figure IV.D-5: Existing and Planned Bicycle Facilities (City of Oakland Recommended Bikeway Network)

8x11

Figure IV.D-6: Existing and Planned Bicycle Facilities (Alameda Countywide Bicycle Program)

8x11

Tables IV.D-8 through IV.D-11 summarize the results of parking survey. The largest percentage of the people parking at the City Park parking garage come from Oakland (36%) and work in downtown Oakland (97%). Over 60 percent of the people surveyed use the garage at least five days a week.

(1) On-Street Parking. An inventory of on-street parking in the block bounded by San Pablo Avenue, 18th Street, Telegraph Avenue and Thomas L. Berkley Way (20th Street) was conducted. Figure IV.D-7 illustrates the available on-street parking in the Project area by parking type and location and Table IV.D-12 presents a summary of total number of on-street parking spaces.

The majority of on-street parking spaces in the study area are either metered parking or free parking with a time limit. Other types of available on-street spaces include unrestricted, service loading (yellow zone), passenger loading (white zone) and handicapped accessible parking (blue zone). The 202 metered parking spaces include 50 two-hour spaces, 50 one-hour spaces and two 30-minutes spaces.

Table IV.D-8: City Park Parking Garage Trip Origins

Origin	Count	Percentage
Oakland	80	36.2%
Alameda County South	51	23.1%
Contra Costa County – North	35	15.8%
San Francisco/Peninsula	20	9.0%
Alameda County North	14	6.3%
Marin County	9	4.1%
North Bay (Napa, Sonoma, Solano)	6	2.7%
South Bay (Santa Clara, Santa Cruz)	4	1.8%
Contra Costa County - South	2	0.9%
Total	**221**	**100.0%**

Source: Korve Engineering, 2003.

Table IV.D-9: City Park Parking Garage Trip Destination

Destination	Count	Percentage
Downtown Oakland	213	96.4%
BART to SF	7	3.2%
Refused	1	0.5%
Total	**221**	**100.0%**

Source: Korve Engineering, 2003.

Table IV.D-10: City Park Parking Garage Trip Purpose

Purpose	Count	Percentage
To Workplace	214	96.8%
Visit Office/Business	3	1.4%
School	3	1.4%
Other	1	0.5%
Total	**221**	**100.0%**

Source: Korve Engineering, 2003.

Table IV.D-11: Parking Frequency at City Park Parking Garage

Frequency	Count	Percentage
5 or more days per week	146	66.1%
3 to 4 days per week	33	14.9%
1 to 2 days per week	24	10.9%
Less than once a week	16	7.25%
Refused	2	0.9%
Total	**221**	**100.0%**

Source: Korve Engineering, 2003.

f. Existing Level of Service Analysis. Traffic conditions in the study area are assessed through the evaluation of peak hour Levels of Service (LOS) at critical intersections and freeway segments. The LOS concept qualitatively characterizes traffic conditions associated with varying levels of traffic based on a quantified volume-to-capacity ratio and a measurable estimate of delay based on the degree of congestion. An LOS determination is a measure of congestion, which is the principal measure of roadway service.

(1) Intersection Level of Service Analysis. The Levels of Service criteria for signalized and unsignalized intersections are presented in Table IV.D-13. These range from LOS A, which indicates a free-flow condition, to LOS F, which indicates a jammed condition.

Figure IV.D-7: Existing Parking Condition

8x11

Traffic conditions at study intersections are evaluated for the morning and evening peak hours using the methodology of the Transportation Research Board's *1997 Highway Capacity Manual* as required by the City of Oakland. This methodology assigns a level of service based on the total delay experienced by vehicles using the intersection.

Table IV.D-12: Existing On-Street Parking

Location	Metered	No Restrictions	Yellow Zone	White Zone	Blue Zone	Total
18th Street from San Pablo to Telegraph	27	4	7	2	0	40
19th Street from San Pablo to Telegraph	39	6	2	0	0	47
William St. from San Pablo to Telegraph	58	0	0	0	0	58
Thomas L. Berkley Way (20th Street) from San Pablo to Telegraph	47	0	3	0	0	50
San Pablo from 18th Street to Thomas L. Berkley Way (20th Street)	30	2	3	1	1	37
Telegraph from 18th Street to Thomas L. Berkley Way (20th Street)	1	5	1	1	0	8
Total	**202**	**17**	**16**	**4**	**1**	**240**

Source: Korve Engineering, 2003.

Table IV.D-13: Intersection Level of Service Definitions

Level of Service	Description	Total Delay (seconds/vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Little or no delay	$\leq$ 10.0	$\leq$ 10.0
B	Short traffic delay	> 10.0 and $\leq$ 20.0	> 10.0 and $\leq$ 15.0
C	Average traffic delay	>20.0 and $\leq$ 35.0	> 15.0 and $\leq$ 25.0
D	Long traffic delay	> 35.0 and $\leq$ 55.0	> 25.0 and $\leq$ 35.0
E	Very long traffic delay	> 55.0 and $\leq$ 80.0	> 35.0 and $\leq$ 50.0
F	Extreme traffic delay	> 80.0	> 50.0

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, 1997.

Figures 1a and 1b, including in Appendix E, illustrate the existing lane geometry and traffic control at the study intersections. Of the 40 study intersections, 38 are signalized. Existing AM and PM peak hour traffic volumes are presented in Figures 2a and 2b (in Appendix E). Weekday traffic counts were collected in 2000 from a number of different studies, and additional counts collected specifically for this study were completed in July 2003. Using 2- to 3-year-old traffic volumes from will likely yield an overestimate of existing volume because traffic volumes were actually higher during the period prior to the current economic recession. All of the traffic counts are also included in Appendix E.

As shown in Table IV.D-14, currently one study intersection (I-880 Frontage Road and West Grand Avenue) operates at LOS E during the PM peak hour and two other study intersections operate at

Table IV.D-14: Existing Conditions - Intersection Level of Service Summary

	Intersection	Peak Hour	Existing Conditions		Location (In or Outside of Downtown)
			LOS	Delay/Vehicles (seconds)	
1	San Pablo Ave/31st Street	AM	A	9.1	Out
		PM	A	9.5	
2	San Pablo Ave/Market /25th Street	AM	A	9.2	Out
		PM	A	9.9	
3	San Pablo Ave/27th Street	AM	A	9.6	Out
		PM	B	12.3	
4	San Pablo Ave/West/25th Street	AM	B	18.3	Out
		PM	B	14.5	
5	San Pablo Ave/West Grand Ave	AM	B	15.2	In
		PM	B	16.9	
6	San Pablo Ave/Thomas L. Berkley Way (20th Street)	AM	B	16.5	In
		PM	B	13.1	
7	San Pablo Ave/William Street	AM	A	0.1	In
		PM	A	1.4	
8	San Pablo Ave/19th Street	AM	B	19.6	In
		PM	C	24.7	
9	San Pablo Ave/18th Street	AM	A	2.8	In
		PM	A	2.9	
10	San Pablo Ave/17th Street	AM	B	19.3	In
		PM	B	19.7	
11	Telegraph Ave/West Grand Ave	AM	C	25.2	In
		PM	C	20.0	
12	Telegraph Ave/Thomas L. Berkley Way (20th Street)	AM	B	11.7	In
		PM	B	10.4	
13	Telegraph Ave/William Street	AM	A	2.7	In
		PM	A	2.6	
14	Telegraph Ave/19th Street	AM	B	10.6	In
		PM	B	10.9	
15	Telegraph Ave/18th Street	AM	A	5.0	In
		PM	A	5.6	
16	Telegraph Ave/17th Street	AM	B	11.0	In
		PM	B	9.6	
17	Broadway/West Grand Ave	AM	C	25.0	In
		PM	D	38.4	
18	Broadway/Thomas L. Berkley Way (20th Street)	AM	B	11.8	In
		PM	B	12.4	
19	Broadway/19th Street	AM	B	13.0	In
		PM	B	13.6	
20	Broadway/17th Street	AM	B	13.9	In
		PM	B	12.9	
21	Broadway/15th Street	AM	A	7.2	In
		PM	A	8.5	
22	Broadway/14th Street	AM	B	12.6	In
		PM	B	13.5	
23	Frontage Road/West Grand Ave	AM	C	30.5	Out
		PM	E	57.7	

Table IV.D-14 *continued*

	Intersection	Peak Hour	Existing Conditions		Location (In or Outside of Downtown)
			LOS	Delay/Vehicles (seconds)	
24	Mandela Pkwy/West Grand Ave	AM	B	17.2	Out
		PM	B	19.9	
25	Northgate Ave/West Grand Ave	AM	C	26.2	In
		PM	C	26.5	
26	Webster Street/Grand Avenue	AM	B	17.0	In
		PM	C	22.2	
27	Harrison Street/Grand Avenue	AM	C	22.6	In
		PM	C	27.9	
28	El Embarcadero/Grand Avenue	AM	B	19.0	Out
		PM	C	25.2	
29	MacArthur Blvd/Grand Avenue	AM	C	21.7	Out
		PM	C	27.9	
30	MacArthur Blvd/Lakeshore Ave	AM	B	16.5	Out
		PM	C	23.7	
31	Lake Park Ave/Lakeshore Ave	AM	D	49.3	Out
		PM	C	34.9	
32	Brush Street/18th Street	AM	A	5.7	In
		PM	A	9.4	
33	Castro Street/18th Street	AM	A	7.3	In
		PM	B	14.0	
34	Martin Luther King Jr. Way/18th St.	AM	B	10.6	In
		PM	B	11.9	
35	Brush Street/17th Street	AM	A	7.4	In
		PM	B	10.0	
36	Castro Street/17th Street	AM	C	24.7	In
		PM	C	28.1	
37	Martin Luther King Jr. Way/17th St.	AM	B	11.7	In
		PM	B	10.6	
38	Jefferson Street/17th Street	AM	B	11.3	In
		PM	B	10.3	
39	Franklin Street/17th Street	AM	B	15.4	In
		PM	B	12.5	
40	Webster Street/17th Street	AM	B	10.0	In
		PM	B	10.6	

Note: 1. Intersections 7 and 9 (San Pablo Avenue/William Street and San Pablo Avenue/18th Street) are stop controlled and traffic signals exist at the remaining 38 study intersections.
2. Intersections that currently or are projected to operate at a LOS E or F are shaded.
3. Intersections located inside the City's downtown planning area are noted as "In" in the location column, and intersections located outside the downtown area are noted as "Out".

Source: Korve Engineering, 2003.

LOS D. All other study intersections currently operate at LOS C or better during both the AM and PM peak hours.

(2) Freeway Level of Service Analysis. Tables IV.D-15 and IV.D-16 present the criteria for the freeway level of service based on density and volume-to-capacity ratio, respectively. The two freeway analysis methodologies are used in this report because the City of Oakland uses the volume-to-capacity ratio methodology and Caltrans uses the density methodology to evaluate traffic conditions on the freeway system. The volume-to-capacity ratio methodolgy required by the City of Oakland is the criteria used to determine if the Project has a significant traffic impact.

Table IV.D-15: Freeway Level of Service Definitions Based on Density

LOS	Density Range (Passenger Cars/Km/Lane)
A	0 – 7
B	> 7-11
C	> 11-16
D	> 16 – 22
E	>22 – 28
F	> 28

Source: Page 23-3, Highway Capacity Manual 2000 (Metric).

Table IV.D-17 summarizes the existing level of service (LOS) on key freeway segments near the Project, based on both the density and volume-to-capacity ratio methodologies. As indicated in the Table IV.D-17, a slightly different LOS is calculated based on the two different analysis methodologies. I-580 currently operates at LOS F in the westbound direction during the morning peak hour and at LOS F in the eastbound direction during the evening peak hour near Grand Avenue based on both analysis methodologies. Based on the density criteria, the other freeway segments operate at LOS D or better during the peak hours. However, based on the volume-to-capacity criteria, some of the freeway segments along I-880 and I-580 currently operate at LOS E.

Table IV.D-16: Freeway Level of Service Definitions Based on V/C Ratio

LOS	Volume-to-Capacity Ratio*
A	0 – 0.33
B	> 0.33 – 0.51
C	>0.51 – 0.74
D	> 0.74 – 0.91
E	> 0.91 – 1.00
F	> 1.00

* Free-flow speed is assumed to be 100 km/hr (~ 70 mile/hr).

Source: Page 23-2, Highway Capacity Manual 2000 (Metric).

g. Planned Transportation Improvements. The City of Oakland is considering the reconfiguration of Telegraph Avenue between 16th Street and Thomas L. Berkley Way (20th Street). Currently, Telegraph has two travel lanes in each direction with curbside parking. The plan under construction would create a road with one travel lane in each direction, a center left turn lane, and bike lanes on each side. On-street parking would be preserved. North of Thomas L. Berkley Way (20th Street), Telegraph Avenue would not be modified from its current configuration. AC Transit is considering a number of plans to modify Thomas L. Berkley Way (20th Street) between Broadway and Telegraph Avenue to improve transit operations. These plans will improve transit operations in this stretch of Thomas L. Berkley Way (20th Street) without substantially reducing its vehicular carrying capacity

2. Analysis Approach

a. Overview. Traffic impacts are assessed at 40 critical intersections in the study area for the following six scenarios:

1. Existing Conditions;
2. Existing plus Project Conditions;
3. Year 2010 Background Conditions Without Project;
4. Year 2010 Background Conditions Plus Project;

Table IV.D-17: Existing Freeway Level of Service

Location	Dir	Peak Hour	Density Method		Volume to Capacity Method		
			Density (pc/km/ln)	LOS	Volume/ Lane/Hr	V/C	LOS
Interstate 880							
Oak Street/Madison Street	N	AM	18.8	D	1,853	0.93	E
		PM	13.7	C	1,407	0.70	C
	S	AM	13.5	C	1,430	0.71	C
		PM	18.4	D	1,830	0.92	E
Broadway/Jackson Street	N	AM	21.1	D	1,984	0.99	E
		PM	16.1	D	1,296	0.65	C
	S	AM	12.4	C	1,653	0.83	D
		PM	15.8	C	1,627	0.81	D
Junction. I-980/Market Street	N	AM	19.2	D	1,882	0.94	E
		PM	11.9	C	918	0.46	B
	S	AM	8.8	B	1,246	0.62	C
		PM	15.0	C	1,554	0.78	D
Interstate 980							
Junction I-880/6th Street	N	AM	12.5	C	1,334	0.67	C
		PM	14.7	C	1,616	0.81	D
	S	AM	10.1	B	1,038	0.52	C
		PM	8.7	B	928	0.46	B
18th Street/W. Grand Avenue	N	AM	4.9	A	518	0.26	A
		PM	10.5	B	1,222	0.61	C
	S	AM	11.5	C	1,121	0.56	C
		PM	5.8	A	619	0.31	A
State Route 24							
Junction I-580 (42nd/45th Streets)	E	AM	8.9	B	968	0.48	B
		PM	12.8	C	1,632	0.82	D
	W	AM	15.1	C	1,395	0.70	C
		PM	11.1	C	1,205	0.60	C
Interstate 580							
Grand Avenue/Adams Street	E	AM	12.2	C	1,334	0.67	C
		PM	–	F	2,516	1.26	F
	W	AM	–	F	2,400	1.20	F
		PM	13.3	C	1,450	0.73	C
Harrison Street/Piedmont Avenue	E	AM	9.4	B	1,026	0.51	C
		PM	17.4	D	1,934	0.97	E
	W	AM	18.6	D	1,845	0.92	E
		PM	10.2	B	1,115	0.56	C

Note: 1. Roadway capacities assumed to be 2,000 vehicles per hour per lane for freeways.

2. The shaded cells indicate an intersection that operates at an unacceptable level.

3. Caltrans requires the use of the "density" calculation while the City of Oakland requires the "volume-to-capacity ratio" methodology. Project impacts are assessed based on the "volume-to-capacity" ratio methodology.

Source: Caltrans, 2002; Korve Engineering, 2003.

5. Year 2025 Conditions without Project; and
6. Year 2025 Conditions plus Project.

Intersection traffic volumes for Year 2010 Background are derived through the use of the Alameda County Congestion Management Agency's (ACCMA) Countywide Transportation Demand Model, with land uses within Oakland modified by the Hausrath Economic Group to reflect the City's updated growth scenario for 2010. To generate the "Year 2010 Background plus Project" scenario, traffic associated with the proposed Project is added to 2010 Background volumes. Intersection traffic volumes for Year 2025 conditions are derived using ACCMA's Countywide Transportation Demand model with land uses reflecting the City's updated growth scenario for 2025. To generate Scenario 5, traffic associated with the proposed Project is added to the 2025 baseline traffic volumes.

b. Project Description.

(1) Proposed Land Use. The proposed Uptown Project will consist of 1,000 apartments, 270 condominium units, 600 student housing apartment units, 50 faculty units, and 33,000 s.f. of retail space. The student units will be marketed particularly to UC-Berkeley students, who will be able to travel to and from campus conveniently using BART. The majority of the Project would be located in an area defined by San Pablo Avenue to the west, Thomas L. Berkley Way (20th Street) to the north, Telegraph Avenue to the east, and 18th Street to the south. The eastern half of the block between Thomas L. Berkley Way (20th Street) and 21st Street and San Pablo and Telegraph Avenues is part of the Project, as are parts of two blocks to the northeast as shown in Figure IV.D-1. The historic Fox Theatre on the corner of 18th Street and Telegraph Avenue is not part of the redevelopment proposal.

A new north-south road is planned approximately in the middle of the Project. The new road will be 34 feet wide with parking on each side and a single 10-foot travel lane in each direction. An 8-foot sidewalk is planned on each side of the street. At intersections the curb will extend out to the edge of the parking to minimize the distance for pedestrians to cross the street. The new road will be immediately west of the Fox Theatre between 18th Street and 19th Street. North of 19th Street the road will shift west approximately 150 feet and extend north through the Project to 21st Street.

On San Pablo Avenue adjacent to the Project, one of the northbound traffic lanes will be replaced with 47 angled parking spaces. No change in the southbound traffic lanes is proposed. Sidewalks in the Project area are designed to encourage pedestrian activity, with 8-foot sidewalks on William Street and 10-foot sidewalks on 18th, 19th and Thomas L. Berkley Way (20th Street).

(2) Mode Split. The modal split for trips generated by the proposed Project was developed based on information from the ACCMA model. Approximately 83 percent of all trips would be vehicular trips. BART and AC Transit are expected to serve 62 and 38 percent of the transit trips, respectively. The modal split predicted by the ACCMA model is likely conservative relative to the number of vehicle trips to be generated by the Project. Due to the location and type of Project proposed, it is likely that a higher split to transit will occur; however, the conservative prediction of the model is used in the analysis.

(3) Trip Generation. The number of vehicle trips that would be generated by the proposed Project was estimated through a trip generation analysis. Trip generation rates and inbound/outbound splits for the land uses under consideration were taken from the Institute of Transportation Engin-

eer's, *Trip Generation Manual, Sixth Edition*. Table IV.D-18 presents the results of the Project's trip generation analysis. Based on the mode split developed for this Project, the manual's trip generation rates were discounted to account for transit trips. The Project trip generation takes into account that vehicle trips are approximately 83 percent of all the trips generated by the proposed Project.[8] In addition, 15 percent of the Project-related retail trips are estimated to be linked trips.

The proposed Project is forecast to result in a daily increase of approximately 11,360 daily vehicle trips. In the morning peak hour, it is forecast to generate approximately 808 vehicle trips (144 inbound and 664 outbound). In the evening peak hour, the Project will generate 1,052 vehicle trips (685 inbound and 367 outbound).

(4) Trip Distribution. Vehicle trips forecast to be generated by the proposed Uptown Project were assigned to the surrounding transportation network based on a distribution pattern developed specifically for this study. The pattern is based on information from the ACCMA Model. Figure IV.D-8 illustrates the Project's anticipated trip distribution pattern.

Approximately 22 percent of Project traffic is forecast to arrive from and depart via I-880, with 10 percent oriented north of the Project and 12 percent to and from I-880 south. Approximately 14 percent of Project traffic is expected to arrive from and depart to the northwest via Grand Avenue. Thirteen percent of Project traffic is forecast to arrive and depart to the southeast via I-580. As shown in Figures 4a and 4b in Appendix E, the remainder of the Project traffic is expected to be fairly evenly distributed on the other streets near the Project.

(5) Site Access. Access to the planned parking garages for the Uptown Project are illustrated in Figure IV.D-9. As shown in Figure IV.D-9, access to Parcels 1 and 2 will be provided from William Street, access to Parcel 3 will be from Thomas L. Berkley Way (20th Street) and William Street, access to Parcel 4 will be from William Street and 19th Street, and access to Parcels 5 and 6 will be from the new internal north/south roadway between 18th Street and 19th Street. The access to the parking garage for Parcel 7 will be on 21st Street.

3. Environmental Analysis

This section of the EIR contains three key subsections:

- A discussion of **significance criteria** used to determine whether the Project's effects would be considered significant.
- A discussion of the Project's **impacts and mitigation measures**.
- The **Alameda County's Congestion Management Agency's Land Use Analysis.**

a. Significance Criteria. The City of Oakland's criteria were used to determine if the Project would result in a significant traffic impact. A project would normally have a significant effect on the environment if it would cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., results in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections), or change the condition of an existing street (i.e., street closures, changing direction of travel) in a manner that

[8] 83 percent = conservative assumption.

Figure IV.D-8: Project Trip Distribution

8x11

Figure IV.D-9: Site Access

8x11

Table IV.D-18: Project Trip Generation

Land Use	Size	AM Peak			PM Peak			Daily		
		In	Out	Total	In	Out	Total	In	Out	Total
Apartments	1,000 DU	82	428	510	415	205	620	3,315	3,315	6,630
Condominiums	270 DU	20	99	119	98	48	146	791	791	1,582
Student Housing[a]	600 DU	49	257	306	249	123	372	1,989	1,989	3,978
Faculty Housing[a]	50 DU	4	21	25	21	10	31	166	166	332
Retail	33,000 sf	21	13	34	59	64	123	708	708	1,416
Subtotal (All Trips)		**176**	**818**	**994**	**842**	**450**	**1,292**	**6,969**	**6,969**	**13,938**
Modal Split[b]										
BART Trips		(17)	(88)	(105)	(86)	(42)	(128)	(685)	(685)	(1,370)
AC Bus Trips		(12)	(64)	(76)	(62)	(31)	(93)	(496)	(496)	(992)
Linked Trips[c]		(3)	(2)	(5)	(9)	(10)	(19)	(106)	(106)	(212)
Total Vehicle Trips		**144**	**664**	**808**	**685**	**367**	**1,052**	**5,682**	**5,682**	**11,364**

[a] The ITE "Apartment" land use category 220 was used to complete the trip generation forecast for the "student and faculty housing" use.

[b] Transit trips are estimated to be 16 percent of all non-student residential trips generated by the proposed Project and 25 percent of the student trips. BART and AC transit are estimated to serve 62 and 38 percent of Project transit trips, respectively, based on the ACCMA's model.

[c] 15 percent of the retail trips are assumed to be internal linked trips.

Source: ITE, *Trip Generation,* 6th Edition, 1997; Korve Engineering, 2003.

would substantially affect access or traffic load and capacity of the street system. Adverse affects to the surrounding transit system were also taken into account. Overloading of the BART or AC Transit system routes would be considered a significant impact.

The specific criteria utilized for this analysis are listed below:

- At a signalized intersection located outside of the downtown area, the Project would cause the existing or future baseline level of service (LOS) to degrade to worse than LOS D.
- At a signalized intersection located within the downtown area, the Project would cause the existing or future baseline level of service (LOS) to degrade to worse than LOS E.
- At a signalized intersection located outside of the downtown area where the existing or future baseline level of service is LOS E, the Project would cause the total intersection average vehicle delay to increase by four or more seconds, or degrade to worse than LOS E (i.e., F).
- At a signalized intersection (in any area), where the existing or future baseline level of service is LOS E, the Project would cause an increase in the average delay for any of the critical movements of six seconds or more, or degrade to worse than LOS E (i.e., F).
- At a signalized intersection (in any area), where the existing or future baseline level of service is LOS F, the Project would cause: (a) the total intersection average vehicle delay to increase by two or more seconds, (b) an increase in average delay for any of the critical movements of four seconds or more, or (c) increase the volume-to-capacity (V/C) ratio by 3 percent (but only if the delay values cannot be measured accurately).

- Cause a roadway segment on the Metropolitan Transportation System to operate at LOS F or increase the V/C ratio by more than 3 percent for a roadway segment that would operate at LOS F without the Project.
- Substantially increase traffic hazards to motor vehicles, bicycles, or pedestrians due to a design feature (e.g., sharp curves or dangerous intersections) that does not comply with Caltrans design standards or incompatible uses (e.g., farm equipment).
- Generate added transit ridership that would increase the average ridership on AC Transit by 3 percent at bus stops where the average load factor with the Project in place would exceed 125 percent over a peak 30-minute period.
- Generate added transit ridership that would increase the peak hour average ridership on BART by 3 percent where the passenger volume would exceed the standing capacity of BART trains.
- Generate added transit ridership that would increase the peak hour average ridership at a BART station by 3 percent where average waiting time at fare gates would exceed 1 minute.

b. Traffic Operations with Project Analysis.

(1) Existing plus Project Traffic Operations. Figures 3a and 3b in Appendix E illustrate the Existing plus Project traffic volumes. Figures 4a and 4b in Appendix E present the AM and PM peak hour Project traffic volumes at the 40 study intersections. The Project traffic volumes were developed by assigning the peak hour Project traffic presented in Table IV.D-19 to the study intersections based on the Project traffic distribution pattern illustrated in Figure IV.D-8. The Existing plus Project Conditions assume the proposed roadway configuration changes on Telegraph Avenue, San Pablo Avenue and Williams Street.

Existing plus Project Intersection Level of Service Analysis. Vehicle trips forecast to be generated by the proposed Uptown Project were assigned to the surrounding transportation network based on a distribution pattern developed specifically for this study. As shown in Table IV.D-19, the Broadway/West Grand Avenue intersection would operates at LOS D during the PM peak hour and LOS C during the AM peak hour with and without traffic associated with the Project. The other study intersections all currently operate at LOS C or better during both the AM and PM peak hours with or without traffic associated with the Project.

Existing plus Project Conditions Freeway Level of Service Analysis. The level of service on the freeway system has been evaluated based on the volume-to-capacity ratio methodology utilized by the City of Oakland and the density methodology utilized by Caltrans. The volume-to-capacity ratio methodology used by the City of Oakland is the criteria used to determine if the Project results in a significant traffic impact. Table IV.D-20 summarizes the peak hour freeway level of service analysis in Existing Conditions with and without the proposed Project based on the density methodology. Table IV.D-20 also presents the percentage of Project traffic on each freeway segment that was evaluated. The percentage of Project traffic on the studied freeway segments ranges from 0.00 to 2.52 percent. The addition of Project traffic does not change the service level on any of the freeway segments. Table IV.D-21 presents the existing freeway analysis based on the volume-to-capacity ratio analysis methodology. The addition of Project traffic does not change the LOS on any freeway segment.

Table IV.D-19: Existing plus Project Intersection Level of Service Summary

	Intersection	Peak Hour	Intersection LOS (Average Vehicle Delay in Seconds)		Location (In or Outside of Downtown Area)
			Existing	Existing With Project	
1	San Pablo Ave/31st Street	AM	A (9.1)	A (9.1)	Out
		PM	A (9.5)	A (9.6)	
2	San Pablo Ave/Market /25th Street	AM	A (9.2)	A (9.2)	Out
		PM	A (9.9)	A (9.9)	
3	San Pablo Ave/27th Street	AM	A (9.6)	A (9.6)	Out
		PM	B (12.3)	B (12.7)	
4	San Pablo Ave/West/25th Street	AM	B (18.3)	B (20.3)	Out
		PM	B (14.5)	B (14.9)	
5	San Pablo Ave/West Grand Ave	AM	B (15.2)	B (15.7)	In
		PM	B (16.9)	B (18.0)	
6	San Pablo Ave/Thomas L. Berkley Way (20th Street)	AM	B (16.5)	C (20.9)	In
		PM	B (13.1)	C (27.7)	
7	San Pablo Ave/William Street	AM	A (0.1)	A (1.1)	In
		PM	A (1.4)	A (1.5)	
8	San Pablo Ave/19th Street	AM	B (19.6)	C (20.3)	In
		PM	C (24.7)	C (25.8)	
9	San Pablo Ave/18th Street	AM	A (2.8)	A (3.1)	In
		PM	A (2.9)	A (2.9)	
10	San Pablo Ave/17th Street	AM	B (19.3)	B (19.7)	In
		PM	B (19.7)	C (20.4)	
11	Telegraph Ave/West Grand Ave	AM	C (25.2)	C (24.6)	In
		PM	C (20.0)	C (26.7)	
12	Telegraph Ave/Thomas L. Berkley Way (20th Street)	AM	B (11.7)	C (23.6)	In
		PM	B (10.4)	B (16.1)	
13	Telegraph Ave/William Street	AM	A (2.7)	A (7.7)	In
		PM	A (2.6)	A (7.5)	
14	Telegraph Ave/19th Street	AM	B (10.6)	D (45.1)	In
		PM	B (10.9)	D (39.7)	
15	Telegraph Ave/18th Street	AM	A (5.0)	A (7.3)	In
		PM	A (5.6)	A (8.2)	
16	Telegraph Ave/17th Street	AM	B (11.0)	B (11.4)	In
		PM	B (9.6)	B (9.9)	
17	Broadway/West Grand Ave	AM	C (25.0)	C (25.3)	In
		PM	D (38.4)	D (41.0)	
18	Broadway/Thomas L. Berkley Way (20th Street)	AM	B (11.8)	B (11.8)	In
		PM	B (12.4)	B (12.7)	
19	Broadway/19th Street	AM	B (13.0)	B (13.0)	In
		PM	B (13.6)	B (13.7)	
20	Broadway/17th Street	AM	B (13.9)	B (14.7)	In
		PM	B (12.9)	B (13.0)	
21	Broadway/15th Street	AM	A (7.2)	A (6.9)	In
		PM	A (8.5)	A (8.4)	
22	Broadway/14th Street	AM	B (12.6)	B (12.7)	In
		PM	B (13.5)	B (13.8)	
23	Frontage Road/West Grand Ave	AM	C (30.5)	C (30.6)	Out
		PM	E (57.7)	E (58.6)	

Table IV.D-19 *continued*

	Intersection	Peak Hour	Intersection LOS (Average Vehicle Delay in Seconds)		Location (In or Outside of Downtown Area)
			Existing	Existing With Project	
24	Mandela Pkwy/West Grand Ave	AM	B (17.2)	B (17.0)	Out
		PM	B (19.9)	B (19.4)	
25	Northgate Ave/West Grand Ave	AM	C (26.2)	C (30.6)	In
		PM	C (26.5)	C (28.8)	
26	Webster Street/Grand Avenue	AM	B (17.0)	B (19.0)	In
		PM	C (22.2)	C (21.9)	
27	Harrison Street/Grand Avenue	AM	C (22.6)	C (23.7)	In
		PM	C (27.9)	C (29.9)	
28	El Embarcadero/Grand Avenue	AM	B (19.0)	B (19.4)	Out
		PM	C (25.2)	C (26.4)	
29	MacArthur Blvd/Grand Avenue	AM	C (21.7)	C (21.9)	Out
		PM	C (27.9)	C (31.2)	
30	MacArthur Blvd/Lakeshore Ave	AM	B (16.5)	B (16.9)	Out
		PM	C (23.7)	C (25.7)	
31	Lake Park Ave/Lakeshore Ave	AM	D (49.3)	D (50.4)	Out
		PM	C (34.9)	D (38.0)	
32	Brush Street/18th Street	AM	A (5.7)	A (9.2)	In
		PM	A (9.4)	A (10.4)	
33	Castro Street/18th Street	AM	A (7.3)	A (7.8)	In
		PM	B (14.0)	B (16.4)	
34	Martin Luther King Jr. Way/18th St.	AM	B (10.6)	B (10.6)	In
		PM	B (11.9)	B (12.1)	
35	Brush Street/17th Street	AM	A (7.4)	A (7.6)	In
		PM	B (10.0)	B (10.2)	
36	Castro Street/17th Street	AM	C (24.7)	C (25.6)	In
		PM	C (28.1)	C (29.4)	
37	Martin Luther King Jr. Way/17th St.	AM	B (11.7)	B (11.8)	In
		PM	B (10.6)	B (10.7)	
38	Jefferson Street/17th Street	AM	B (11.3)	B (11.3)	In
		PM	B (10.3)	B (10.4)	
39	Franklin Street/17th Street	AM	B (15.4)	B (18.3)	In
		PM	B (12.5)	B (13.3)	
40	Webster Street/17th Street	AM	B (10.0)	B (10.6)	In
		PM	B (10.6)	B (10.9)	

Note: 1. Intersections 7 and 9 (San Pablo Avenue/William Street and San Pablo Avenue/18th Street) are stop controlled and traffic signals exist at the remaining 38 study intersections.
2. Intersections that currently or are projected to operate at a LOS E or F are shaded.
3. Intersections located inside the City's downtown planning area are noted as "In" in the location column, and intersections located outside the downtown area are noted as "Out".

Source: Korve Engineering, 2003.

Table IV.D-20: Summary of Existing plus Project Freeway Density LOS Analysis

Freeway/Segment	Dir.	Peak Hour	Existing		Existing with Project		Percent Project Volume
			LOS	Density (pc/km/ln)	LOS	Density (pc/km/ln)	
Interstate 880							
Oak Street/Madison Street	N	AM	D	18.8	D	18.9	0.39%
		PM	C	13.7	C	13.9	0.98%
	S	AM	C	13.5	C	13.6	0.63%
		PM	D	18.4	D	18.5	0.33%
Broadway/Jackson Street	N	AM	D	21.1	D	21.3	0.41%
		PM	D	16.1	D	16.2	0.95%
	S	AM	C	12.4	C	12.5	0.68%
		PM	C	15.8	C	15.8	0.37%
Junction. I-980/Market Street	N	AM	D	19.2	D	19.2	0.00%
		PM	C	11.9	C	11.9	0.00%
	S	AM	B	8.8	B	8.8	0.00%
		PM	C	15.0	C	15.0	0.00%
Interstate 980							
Junction I-880/6th Street	N	AM	C	12.5	C	12.7	1.54%
		PM	C	14.7	C	15.1	2.52%
	S	AM	B	10.1	B	10.3	1.37%
		PM	B	8.7	B	8.9	1.62%
18th Street/W. Grand Avenue	N	AM	A	4.9	A	4.9	0.94%
		PM	B	10.5	B	10.6	0.60%
	S	AM	C	11.5	C	11.5	0.00%
		PM	A	5.8	A	5.8	0.00%
State Route 24							
Junction I-580 (42nd/45th Streets)	E	AM	B	7.5	B	7.5	0.77%
		PM	C	14.9	C	15	0.50%
	W	AM	D	16.7	D	16.8	0.23%
		PM	B	9.0	B	9.1	0.77%
Interstate 580							
Grand Avenue/Adams Street	E	AM	C	12.2	C	12.2	0.00%
		PM	F	–	F	–	0.13%
	W	AM	F	–	F	–	0.05%
		PM	C	13.3	C	13.3	0.19%
Harrison Street/Piedmont Avenue	E	AM	B	9.2	B	9.2	0.00%
		PM	D	17.7	D	17.7	0.09%
	W	AM	D	18.9	D	18.9	0.05%
		PM	B	9.9	B	9.9	0.20%

Note: 1. Traffic volumes in the Year 2010 No Project scenario are based on the ACCMA's model.
2. Segments that currently or are projected to operate at a LOS E or F are shaded .
3. Caltrans requires the use of the "density" calculation while the City of Oakland requires the "volume-to-capacity ratio" methodology. Project impacts are assessed based on the "volume-to-capacity" ratio methodology.

Source: Korve Engineering, 2003.

Table IV.D-21: Summary of Existing plus Project Conditions Freeway Volume to Capacity LOS Analysis

Freeway/Segment	Dir.	Peak Hour	Existing			Existing With Project		
			LOS	V/C	Volume/ Lane/ Hour	LOS	V/C	Volume/ Lane/ Hour
Interstate 880								
Oak Street/Madison Street	N	AM	E	0.93	1,853	E	0.93	1,861
		PM	C	0.71	1,430	C	0.72	1,444
	S	AM	C	0.70	1,407	C	0.71	1,415
		PM	E	0.92	1,830	E	0.92	1,836
Broadway/Jackson Street	N	AM	E	0.99	1,984	E	1.00	1,992
		PM	D	0.83	1,653	D	0.83	1,668
	S	AM	C	0.65	1,296	C	0.65	1,305
		PM	D	0.81	1,627	D	0.82	1,633
Junction. I-980/Market Street	N	AM	E	0.94	1,882	E	0.94	1,882
		PM	C	0.62	1,246	C	0.62	1,246
	S	AM	B	0.46	918	B	0.46	918
		PM	D	0.78	1,554	D	0.78	1,554
Interstate 980								
Junction I-880/6th Street	N	AM	C	0.67	1,334	C	0.68	1,354
		PM	D	0.78	1,557	D	0.80	1,597
	S	AM	C	0.54	1,078	C	0.55	1,092
		PM	B	0.46	928	B	0.47	944
18th Street/W. Grand Avenue	N	AM	A	0.26	518	A	0.26	523
		PM	C	0.56	1,121	C	0.56	1,127
	S	AM	C	0.61	1,222	C	0.61	1,222
		PM	A	0.31	619	A	0.31	619
State Route 24								
Junction I-580 (42nd/45th Streets)	E	AM	B	0.41	815	B	0.41	821
		PM	D	0.81	1,618	D	0.81	1,626
	W	AM	D	0.89	1,785	D	0.89	1,790
		PM	B	0.49	982	B	0.49	990
Interstate 580								
Grand Avenue/Adams Street	E	AM	C	0.67	1,334	C	0.67	1,334
		PM	F	1.20	2,400	F	1.20	2,403
	W	AM	F	1.26	2,516	F	1.26	2,517
		PM	C	0.73	1,450	C	0.73	1,453
Harrison Street/Piedmont Avenue	E	AM	B	0.50	1,007	B	0.50	1,007
		PM	E	0.94	1,873	E	0.94	1,875
	W	AM	E	0.98	1,953	E	0.98	1,954
		PM	C	0.54	1,087	C	0.54	1,089

Note: 1. Roadway capacities assumed to be 2,000 vehicles per hour per lane for freeways.
2. Segments that currently or are projected to operate at a LOS E or F are shaded.
3. Caltrans requires the use of the "density" calculation while the City of Oakland requires the "volume-to-capacity ratio" methodology. Project impacts are assessed based on the "volume-to-capacity" ratio methodology.

Source: Korve Engineering, 2003.

Existing plus Project Conditions Impacts and Mitigation Measures. The Uptown Project was not found to significantly impact the freeway system in the Existing plus Project condition. The additional trips generated by proposed Project will increase delays at the study intersections during the peak periods. However, based on the significance criteria described in this report and the existing plus Project traffic analysis, the Uptown Project would not result in significant adverse impacts to any intersections under the Existing plus Project scenario.

(2) Year 2010 Traffic Operations. Based on the Alameda County Congestion Management Agency's (ACCMA) Countywide Transportation Demand Model's forecasts, increases in traffic levels at each study intersection were estimated. Figures 5a and 5b in Appendix E illustrate the Year 2010 Baseline traffic volumes without the proposed Project. The Year 2010 Baseline traffic volumes were developed based on growth factors developed from the ACCMA model data and reflect the increase in traffic from all planned development that would impact the study area. Figures 6a and 6b in Appendix E present the AM and PM peak hour Project traffic volumes at the 40 study intersections. The Project traffic volumes were developed by assigning the peak hour Project traffic presented in Table IV.D-18 to the study intersections based on the Project traffic distribution pattern illustrated in Figure IV.D-8. Figures 6a and 6b in Appendix E illustrate the Year 2010 Baseline plus Project traffic volumes.

Intersection Level of Service Analysis. As illustrated in Table IV.D-22, the anticipated growth in traffic to the Year 2010 without the proposed Uptown Project is expected to result in the Frontage Road/West Grand Avenue intersection operating at LOS F and the Lake Park Avenue/Lake Shore Avenue intersection operating at LOS E. The other 38 study intersections are expected to operate at LOS D or better during both the morning and evening peak hours.

The addition of the Uptown Project traffic to the "Year 2010 Baseline" results in two study intersections operating at LOS E and three intersections operating at LOS F, based on existing signal timing. However, optimizing the signal timing improves all the study intersections to a satisfactory condition (LOS D or better), except the Frontage Road/Grand Avenue intersection which is forecast to operate at LOS F during the evening peak hour in 2010 with or without the Uptown Project. Level of Service calculation worksheets for each of the traffic analysis scenarios are attached in Appendix B.

Freeway Level of Service Analysis. The level of service on the freeway system has been evaluated based on the volume-to-capacity ratio methodology utilized by the City of Oakland and the density methodology utilized by Caltrans. Table IV.D-23 summarizes the peak hour freeway level of service analysis in 2010 with and without the proposed Project based on the density methodology. Table IV.D-23 also presents the percentage of Project traffic on each freeway segment that was evaluated. The percentage of Project traffic on the studied freeway segments in 2010 ranges from 0.00 to 2.46 percent. The few segments on I-880 and I-980 where the Project will add more than 1 percent to the background 2010 volume all operate at an acceptable level of service. Therefore, the proposed Project does not significantly impact the freeway system. Table IV.D-24 presents the 2010 freeway analysis based on the volume-to-capacity analysis methodology.

As shown in Table IV.D-24, the addition of Project traffic theoretically changes the LOS on I-880 near Oak Street from LOS E to F. At this location the volume-to-capacity ratio is 1.00 both with and without the Project traffic, but with the addition of Project traffic it slightly exceeds 1.00 (the calculated v/c ratio is 1.00018). The Project only increases the traffic by 0.36 percent at this location

Table IV.D-22: 2010 Intersection Level of Service Summary

	Intersection	Peak Hour	Intersection LOS (Average Vehicle Delay in Seconds)			Location (In or Outside of Downtown Area)
			Existing	Year 2010 No Project	Year 2010 With Project	
1	San Pablo Ave/31st Street	AM	A (9.1)	A (9.8)	A (9.8)	Out
		PM	A (9.5)	B (10.7)	B (10.7)	
2	San Pablo Ave/Market / 25th Street	AM	A (9.2)	B (10.2)	B (10.1)	Out
		PM	A (9.9)	B (11.0)	B (10.9)	
3	San Pablo Ave/27th Street	AM	A (9.6)	B (10.3)	B (10.4)	Out
		PM	B (12.3)	C (26.0)	C (28.2)	
4	San Pablo Ave/West/25th Street	AM	B (18.3)	C (20.5)	C (20.7)	Out
		PM	B (14.5)	B (15.7)	B (16.1)	
5	San Pablo Ave/West Grand Ave	AM	B (15.2)	B (16.3)	B (16.9)	In
		PM	B (16.9)	B (19.9)	C (24.5)	
6	San Pablo Ave/Thomas L. Berkley Way (20th Street)	AM	B (16.5)	B (18.0)	C (21.9)	In
		PM	B (13.1)	C (26.5)	F (85.4)	
7	San Pablo Ave/William Street	AM	A (0.1)	A (0.1)	A (1.0)	In
		PM	A (1.4)	A (1.5)	A (1.5)	
8	San Pablo Ave/19th Street	AM	B (19.6)	C (20.0)	C (20.5)	In
		PM	C (24.7)	C (25.2)	C (27.4)	
9	San Pablo Ave/18th Street	AM	A (2.8)	A (2.9)	A (3.0)	In
		PM	A (2.9)	A (2.2)	A (2.4)	
10	San Pablo Ave/17th Street	AM	B (19.3)	C (20.2)	C (20.7)	In
		PM	B (19.7)	A (19.3)	C (20.1)	
11	Telegraph Ave/West Grand Ave	AM	C (25.2)	D (48.5)	E (56.4)	In
		PM	C (20.0)	C (27.0)	D (38.6)	
12	Telegraph Ave/Thomas L. Berkley Way (20th Street)	AM	B (11.7)	C (21.1)	D (43.1)	In
		PM	B (10.4)	B (18.4)	C (22.3)	
13	Telegraph Ave/William Street	AM	A (2.7)	B (11.9)	B (18.5)	In
		PM	A (2.6)	A (6.2)	B (11.3)	
14	Telegraph Ave/19th Street	AM	B (10.6)	D (52.9)	F (114.9)	In
		PM	B (10.9)	D (43.5)	F (81.5)	
15	Telegraph Ave/18th Street	AM	A (5.0)	A (6.7)	A (8.0)	In
		PM	A (5.6)	A (7.6)	A (9.5)	
16	Telegraph Ave/17th Street	AM	B (11.0)	B (11.3)	B (11.9)	In
		PM	B (9.6)	B (10.4)	B (10.7)	
17	Broadway/West Grand Ave	AM	C (25.0)	C (28.2)	C (29.5)	In
		PM	D (38.4)	D (49.8)	E (55.5)	
18	Broadway/Thomas L. Berkley Way (20th Street)	AM	B (11.8)	B (13.5)	B (13.6)	In
		PM	B (12.4)	B (12.6)	B (13.0)	
19	Broadway/19th Street	AM	B (13.0)	B (13.4)	B (13.4)	In
		PM	B (13.6)	B (14.5)	B (14.6)	
20	Broadway/17th Street	AM	B (13.9)	B (16.0)	B (17.6)	In
		PM	B (12.9)	B (13.9)	B (14.1)	
21	Broadway/15th Street	AM	A (7.2)	A (7.8)	A (7.5)	In
		PM	A (8.5)	A (8.9)	A (8.8)	
22	Broadway/14th Street	AM	B (12.6)	B (12.8)	B (12.9)	In
		PM	B (13.5)	B (14.1)	B (14.3)	
23	Frontage Road/West Grand Ave	AM	C (30.5)	C (33.0)	C (33.9)	Out
		PM	E (57.7)	F (103.4)	F (106.4)	
24	Mandela Pkwy/West Grand Ave	AM	B (17.2)	B (18.1)	B (17.9)	Out
		PM	B (19.9)	C (23.3)	C (23.5)	
25	Northgate Ave/West Grand Ave	AM	C (26.2)	C (31.0)	C (34.5)	In
		PM	C (26.5)	D (45.3)	D (52.0)	

Table IV.D-22 *continued*

	Intersection	Peak Hour	Intersection LOS (Average Vehicle Delay in Seconds) Existing	Year 2010 No Project	Year 2010 With Project	Location (In or Outside of Downtown Area)
26	Webster Street/Grand Avenue	AM	B (17.0)	C (24.4)	D (37.1)	In
		PM	C (22.2)	C (23.9)	C (24.1)	
27	Harrison Street/Grand Avenue	AM	C (22.6)	C (25.1)	C (26.6)	In
		PM	C (27.9)	D (48.3)	D (52.3)	
28	El Embarcadero/Grand Avenue	AM	B (19.0)	B (19.4)	B (19.8)	Out
		PM	C (25.2)	C (29.2)	C (31.2)	
29	MacArthur Blvd/Grand Avenue	AM	C (21.7)	C (22.5)	C (22.7)	Out
		PM	C (27.9)	C (29.8)	C (34.1)	
30	MacArthur Blvd/Lakeshore Ave	AM	B (16.5)	B (16.8)	B (17.2)	Out
		PM	C (23.7)	C (24.3)	C (26.3)	
31	Lake Park Ave/Lakeshore Ave	AM	D (49.3)	E (70.6)	E (73.7)	Out
		PM	C (34.9)	D (37.4)	D (41.1)	
32	Brush Street/18th Street	AM	A (5.7)	A (7.0)	B (10.4)	In
		PM	A (9.4)	A (9.7)	B (10.7)	
33	Castro Street/18th Street	AM	A (7.3)	A (7.9)	A (8.5)	In
		PM	B (14.0)	D (47.6)	D (57.6)	
34	Martin Luther King Jr. Way/ 18th St.	AM	B (10.6)	B (11.1)	B (11.0)	In
		PM	B (11.9)	B (13.8)	B (14.2)	
35	Brush Street/17th Street	AM	A (7.4)	A (8.3)	A (8.5)	In
		PM	B (10.0)	B (10.5)	B (10.6)	
36	Castro Street/17th Street	AM	C (24.7)	C (24.9)	C (25.9)	In
		PM	C (28.1)	C (29.7)	C (31.5)	
37	Martin Luther King Jr. Way/ 17th St.	AM	B (11.7)	B (12.1)	B (12.2)	In
		PM	B (10.6)	B (10.9)	B (11.0)	
38	Jefferson Street/17th Street	AM	B (11.3)	B (11.5)	B (11.6)	In
		PM	B (10.3)	B (10.6)	B (10.6)	
39	Franklin Street/17th Street	AM	B (15.4)	C (29.4)	D (42.8)	In
		PM	B (12.5)	C (24.5)	C (30.0)	
40	Webster Street/17th Street	AM	B (10.0)	B (11.2)	B (12.0)	In
		PM	B (10.6)	B (11.7)	B (12.2)	

Note: 1. Intersections 7 and 9 (San Pablo Avenue/William Street and San Pablo Avenue/18th Street) are stop controlled and traffic signals exist at the remaining 38 study intersections.
2. Intersections that currently or are projected to operate at a LOS E or F are shaded .
3. Intersections located inside the City's downtown planning area are noted as "In" in the location column, and intersections located outside the downtown area are noted as "Out".

Source: Korve Engineering, 2003.

as shown in Table IV.D-24 and therefore the Project is not expected to significantly impact the freeway operations. No other changes in level of service on the studied freeway segments are anticipated with the addition of Uptown Project traffic.

Year 2010 Impacts and Mitigation Measures. The Uptown Project will not significantly impact the freeway system. The additional trips generated by proposed Project will deteriorate service levels at some of the study intersections during the peak periods. Based on the significant traffic impact criteria described in this report and the 2010 traffic analysis, the Uptown Project will have a significant impact at three study intersections. Table IV.D-25 summarizes the delay and level of service at

Table IV.D-23: Summary of Year 2010 Freeway Density LOS Analysis

Freeway/Segment	Dir.	Peak Hour	No Project		With Project		Percent Project Volume
			LOS	Density (pc/km/ln)	LOS	Density (pc/km/ln)	
Interstate 880							
Oak Street/Madison Street	N	AM	D	21.4	D	21.5	0.36%
		PM	C	15.9	D	16.1	0.85%
	S	AM	C	15.8	C	15.9	0.54%
		PM	D	20.3	D	20.4	0.31%
Broadway/Jackson Street	N	AM	E	26.3	E	26.6	0.38%
		PM	D	19.0	D	19.3	0.84%
	S	AM	C	14.4	C	14.5	0.59%
		PM	D	16.9	D	17.0	0.35%
Junction. I-980/Market Street	N	AM	E	26.5	E	26.5	0.00%
		PM	C	15.0	C	15.0	0.00%
	S	AM	C	11.7	C	11.7	0.00%
		PM	D	16.7	D	16.7	0.00%
Interstate 980							
Junction I-880/6th Street	N	AM	C	12.8	C	13.0	1.51%
		PM	C	15.1	C	15.5	2.46%
	S	AM	C	11.1	C	11.3	1.25%
		PM	B	9.8	B	10.0	1.44%
18th Street/W. Grand Avenue	N	AM	A	5.1	A	5.1	0.91%
		PM	C	11.5	C	11.6	0.55%
	S	AM	C	12.4	C	12.4	0.00%
		PM	A	6.4	A	6.4	0.00%
State Route 24							
Junction I-580 (42nd/45th Streets)	E	AM	B	7.7	B	7.7	0.75%
		PM	C	16.0	D	16.1	0.47%
	W	AM	D	18.9	D	18.9	0.21%
		PM	B	9.7	B	9.8	0.71%
Interstate 580							
Grand Avenue/Adams Street	E	AM	C	13.4	C	13.4	0.00%
		PM	F	-	F	-	0.12%
	W	AM	F	-	F	-	0.04%
		PM	C	14.9	C	15.0	0.17%
Harrison Street/Piedmont Avenue	E	AM	B	9.9	B	9.9	0.00%
		PM	D	20.0	D	20.1	0.09%
	W	AM	D	20.3	D	20.3	0.05%
		PM	C	11.2	C	11.2	0.18%

Note: 1. Traffic volumes in the Year 2010 No Project scenario are based on the ACCMA's model.
2. Segments that currently or are projected to operate at a LOS E or F are shaded.
3. Caltrans requires the use of the "density" calculation while the City of Oakland requires the "volume-to-capacity ratio" methodology. Project impacts are assessed based on the "volume-to-capacity" ratio methodology.

Source: Korve Engineering, 2003.

Table IV.D-24: Summary of Year 2010 Freeway Volume to Capacity LOS Analysis

Freeway/Segment	Dir.	Peak Hour	No Project			With Project		
			LOS	V/C	Volume/ Lane/ Hour	LOS	V/C	Volume/ Lane/ Hour
Interstate 880								
Oak Street/Madison Street	N	AM	E	1.00	1,996	F	1.00	2,003
		PM	D	0.82	1,638	D	0.83	1,652
	S	AM	D	0.81	1,628	D	0.82	1,637
		PM	E	0.97	1,940	E	0.97	1,946
Broadway/Jackson Street	N	AM	F	1.09	2,181	F	1.09	2,189
		PM	E	0.93	1,865	E	0.94	1,881
	S	AM	D	0.75	1,499	D	0.75	1,508
		PM	D	0.86	1,724	D	0.87	1,730
Junction. I-980/Market Street	N	AM	F	1.09	2,188	F	1.09	2,188
		PM	D	0.78	1,553	D	0.78	1,553
	S	AM	C	0.61	1,219	C	0.61	1,219
		PM	D	0.85	1,705	D	0.85	1,705
Interstate 980								
Junction I-880/6th Street	N	AM	C	0.68	1,356	C	0.69	1,377
		PM	D	0.80	1,596	D	0.82	1,635
	S	AM	C	0.59	1,180	C	0.60	1,195
		PM	C	0.52	1,045	C	0.53	1,061
18th Street/W. Grand Avenue	N	AM	A	0.27	538	A	0.27	543
		PM	C	0.61	1,223	C	0.61	1,230
	S	AM	C	0.66	1,315	C	0.66	1,315
		PM	B	0.34	677	B	0.34	677
State Route 24								
Junction I-580 (42nd/45th Streets)	E	AM	B	0.42	835	B	0.42	841
		PM	D	0.86	1,719	D	0.86	1,727
	W	AM	E	0.97	1,942	E	0.97	1,946
		PM	C	0.53	1,056	C	0.53	1,064
Interstate 580								
Grand Avenue/Adams Street	E	AM	C	0.73	1,466	C	0.73	1,466
		PM	F	1.30	2,601	F	1.30	2,604
	W	AM	F	1.31	2,617	F	1.31	2,618
		PM	D	0.81	1,628	D	0.82	1,631
Harrison Street/Piedmont Avenue	E	AM	C	0.54	1,086	C	0.54	1,086
		PM	F	1.01	2,023	F	1.01	2,024
	W	AM	F	1.02	2,038	F	1.02	2,039
		PM	C	0.61	1,226	C	0.61	1,228

Note: 1. Roadway capacities assumed to be 2,000 vehicles per hour per lane for freeways.
2. Segments that currently or are projected to operate at a LOS E or F are shaded.
3. Caltrans requires the use of the "density" calculation while the City of Oakland requires the "volume-to-capacity ratio" methodology. Project impacts are assessed based on the "volume-to-capacity" ratio methodology.

Source: Korve Engineering, 2003.

Table IV.D-25: 2010 Intersection LOS Summary With Mitigation

Intersection		Peak Hour	Intersection LOS (Average Vehicle Delay in seconds)					
			Existing Timing		Optimized Timing		With Intersection Improvements	
			No Project	With Project	No Project	With Project	No Project	With Project
6	San Pablo Avenue/Thomas L. Berkley Way (20th Street) *	AM	B (18.0)	C (21.9)	NR	NR	NR	NR
		PM	C (26.5)	F (85.4)	C (21.5)	D (42.8)	NR	NR
14	Telegraph Avenue/19th Street *	AM	D (52.9)	F (114.9)	B (14.1)	C (22.3)	NR	NR
		PM	D (43.5)	F (81.5)	B (19.7)	C (36.2)	NR	NR
23	Frontage Road/West Grand Ave	AM	C (33.0)	C (33.9)	NR	NR	C (27.2)	C (27.5)
		PM	F (103.4)	F (106.4)	F (101.4)	F (104.0)	D (38.2)	D (38.4)

Note: 1. NR = Not Required.
2 Intersections that currently or are projected to operate at a LOS E or F are shaded.
3 Study intersections that are located within the City of Oakland's downtown area are noted with an asterisk (*) after the intersection name.

Source: Korve Engineering, 2003.

the three impacted intersections based on existing traffic signal timing, optimized traffic signal timing, and intersection improvements, if required.

Each of the intersections impacted by the Project is described below, along with the recommend mitigation measures.

San Pablo Avenue/Thomas L. Berkley Way (20th Street)

Impact TRANS-1: The addition of Project traffic to the Year 2010 Baseline condition would result in a significant adverse impact at the intersection of San Pablo Avenue/Thomas L. Berkley Way (20th Street). The intersection was identified as operating at LOS C in the Year 2010 No Project Condition in the PM peak hour. The addition of Project traffic would result in the intersection operating at LOS F in the PM peak hour. (S)

Mitigation Measure TRANS-1: Optimization of the signal timing at the intersection of San Pablo and Thomas L. Berkley Way (20th Street) would improve function to a LOS D in the PM peak hour. This intersection functions as an integrated signal system with other intersections in the downtown area. To mitigate the Project's impact at this location and others, the City shall prepare a signal optimization and coordination plan for the area bounded by San Pablo Avenue, Grand Avenue, Telegraph Avenue, and 17th Street prior to Project occupancy. The plan shall address the timing and equipment requirements, as necessary for all of the signalized intersections located within this area. The Project applicant shall fund its fair share cost of the preparation of this plan and the implementation of the signal timing program. Implementation of the signal optimization program may also involve the purchase and installation of interconnection hardware (i.e. modems, microwave antennas, etc).

Given that the Project sponsor is responsible for only a portion of this mitigation measure, implementation of this set of improvements will be funded fully by one or a combination of the following means:

1. The Project sponsor shall fully fund the costs of the signalization improvements and be reimbursed through other fair-share contributions as future projects occur that fall within the City's thresholds of significance.

2. The City, at their sole discretion, shall establish a Traffic Improvement Program and concurrent Traffic Impact Fee Ordinance to fund the mitigation measure.

3. The Redevelopment Agency, at their sole discretion, shall contribute funds to the costs of implementation. (LTS)

The implementation of Mitigation Measure TRANS-1 would not lead to any adverse impacts.

Telegraph Avenue/19th Street

Impact TRANS-2: The addition of Project traffic to the Year 2010 Baseline condition would result in a significant adverse impact at the intersection of Telegraph Avenue/19th Street. The intersection was identified as operating at LOS D in the Year 2010 No Project Condition in the AM and PM peak hours. The addition of Project traffic would result in the intersection operating at LOS F in both the AM and PM peak hours. (S)

Mitigation Measure TRANS-2: Optimization of the signal timing at the intersection of Telegraph and 19th Street would improve the function to LOS C in both the AM or PM peak hours. Preparation and implementation of the signal optimization and coordination plan detailed in Mitigation Measure TRANS-1 will ensure that this impact is reduced to a less-than-significant level. (LTS)

The implementation of Mitigation Measure TRANS-2 would not lead to any adverse impacts.

Frontage Road/West Grand Avenue

Impact TRANS-3: In the 2010 No Project and Plus Project scenarios, the Frontage Road/West Grand Avenue intersection would operate at LOS F in the PM peak hour. The Project would cause the total intersection delay for the critical movements to increase by two or more seconds and result in a significant impact. (S)

Mitigation Measure TRANS-3: Widen the intersection to add a second exclusive left turn lane in the eastbound direction and an exclusive right turn lane in the westbound direction. The intersection would operate at LOS D in the PM peak hour with these improvements.

The intersection of Frontage Road and West Grand Avenue is located on an elevated structure which is within the jurisdiction of Caltrans. The proposed mitigation measures would require the widening of the existing elevated structure and modification of the traffic signal. The second exclusive left turn lane in the eastbound direction and the exclusive right turn lane in the westbound direction should each be 300 feet in length with a 90-foot taper. Widening of the

existing structure would require additional support columns and the acquisition of right of way underneath the structure. In addition, the connector from Interstate 880 to Interstate 80 structure exists above this intersection. Columns supporting this elevated connector may have to be relocated to widen the Frontage Road/West Grand Avenue intersection. At this time, the implementation of this mitigation measure would not be economically feasible. Because this intersection is located outside of the City of Oakland's jurisdiction and because it is not economically feasible, it is significant and unavoidable. (SU)

(3) Year 2025 Traffic Operations. Traffic increases for each study intersection were estimated based on the Alameda County Congestion Management Agency's (ACCMA) Countywide Transportation Demand Model. The "Year 2025 No Project" traffic volumes are shown in Figures 7a and 7b in Appendix E. The "Year 2025 With Project Traffic" volumes are illustrated in Figures 8a and 8b in Appendix E. This cumulative scenario includes all development contemplated in the study area.

Intersection Level of Service Analysis. Table IV.D-26 summarizes the intersection Level of Service analysis for the 2025 peak hour traffic conditions with and without the proposed Uptown Project. The existing traffic signal timing was used in this analysis. Level of Service calculation worksheets for each of the analysis scenarios are attached in Appendix E.

In the "Year 2025 No Project" scenario, eight of the study intersections are forecast to operate at LOS E and five additional intersections are expected to operate at LOS F during at least one of the peak periods based on existing traffic signal timing. Optimizing the traffic signal timing results in two intersections operating at LOS E and one intersection (Frontage Road/West Grand Avenue) operating at LOS F in 2025 without the proposed Project.

The addition of Uptown Project traffic to the 2025 background traffic volumes results in ten intersections operating at LOS E and six intersections operating at LOS F based on existing signal timing. Optimizing the traffic signal timing results in four intersections operating at LOS E and two intersections operating at LOS F. The other 34 study intersections are forecast to operate at LOS D or better in the area outside the downtown area or LOD E or better in the downtown area in 2025 with the completion of the Uptown Project and the optimization of traffic signal timing where required. With optimized traffic signal timing, the addition of Project-related traffic in the 2025 analysis year results in three study intersections (Telegraph Avenue/West Grand Avenue and Broadway/West Grand Avenue) deteriorating from LOS D to LOS E and one study intersection (Telegraph Avenue/Thomas L. Berkley Way (20th Street)) deteriorating from LOS E to LOS F.

Freeway Level of Service Analysis. Table IV.D-27 summarizes the peak hour freeway level of service analysis in 2025 with and without the proposed Project based on the density methodology. Table IV.D-27 also presents the percentage of Project traffic on each freeway segment that was evaluated. The percentage of Project traffic on the studied freeway segments in 2025 ranges from 0.00 to 2.17 percent. The few segments on I-880 and I-980 where the Project will add more than 1 percent to the background 2025 volume all operate at an acceptable level of service (LOS D or better) based on the anticipated density of traffic on the highway. Therefore, the proposed Project does not significantly impact the freeway system. Table IV.D-28 presents the 2025 freeway analysis based on the volume-to-capacity analysis methodology.

Table IV.D-26: 2025 Intersection Level of Service Summary

	Intersection	Peak Hour	Intersection LOS (Average Vehicle Delay in Seconds)			Location (In or Outside of Downtown Area)
			Existing	Year 2025 No Project	Year 2025 With Project	
1	San Pablo Ave/31st Street	AM	A (9.1)	A (10.4)	A (10.4)	Out
		PM	A (9.5)	B (11.8)	B (11.9)	
2	San Pablo Ave/Market / 25th Street	AM	A (9.2)	B (10.3)	B (10.2)	Out
		PM	A (9.9)	B (12.0)	B (12.1)	
3	San Pablo Ave/27th Street	AM	A (9.6)	B (11.0)	B (11.2)	Out
		PM	B (12.3)	E (69.2)	E (74.0)	
4	San Pablo Ave/West/25th Street	AM	B (18.3)	C (21.2)	C (21.4)	Out
		PM	B (14.5)	B (17.1)	B (17.6)	
5	San Pablo Ave/West Grand Ave	AM	B (15.2)	B (19.4)	C (20.4)	In
		PM	B (16.9)	F (85.7)	F (111.1)	
6	San Pablo Ave/Thomas L. Berkley Way (20th Street)	AM	B (16.5)	B (18.0)	C (22.0)	In
		PM	B (13.1)	C (27.0)	F (87.9)	
7	San Pablo Ave/William Street	AM	A (0.1)	A (0.1)	A (1.0)	In
		PM	A (1.4)	A (1.4)	A (1.5)	
8	San Pablo Ave/19th Street	AM	B (19.6)	C (20.0)	C (20.5)	In
		PM	C (24.7)	C (26.5)	C (28.7)	
9	San Pablo Ave/18th Street	AM	A (2.8)	A (2.9)	A (3.0)	In
		PM	A (2.9)	A (2.1)	A (2.3)	
10	San Pablo Ave/17th Street	AM	B (19.3)	C (20.2)	C (20.7)	In
		PM	B (19.7)	D (38.0)	D (43.1)	
11	Telegraph Ave/West Grand Ave	AM	C (25.2)	E (57.3)	E (66.3)	In
		PM	C (20.0)	D (51.1)	E (78.6)	
12	Telegraph Ave/Thomas L. Berkley Way (20th Street)	AM	B (11.7)	E (76.1)	F (86.7)	In
		PM	B (10.4)	F (272.6)	F (260.6)	
13	Telegraph Ave/William Street	AM	A (2.7)	D (44.0)	E (63.0)	In
		PM	A (2.6)	F (90.3)	F (98.7)	
14	Telegraph Ave/19th Street	AM	B (10.6)	E (65.2)	F (126.3)	In
		PM	B (10.9)	F (95.1)	F (134.9)	
15	Telegraph Ave/18th Street	AM	A (5.0)	B (13.1)	C (21.5)	In
		PM	A (5.6)	A (7.9)	A (9.9)	
16	Telegraph Ave/17th Street	AM	B (11.0)	B (11.2)	B (11.8)	In
		PM	B (9.6)	B (12.5)	B (13.0)	
17	Broadway/West Grand Ave	AM	C (25.0)	C (33.5)	D (41.8)	In
		PM	D (38.4)	D (50.7)	E (67.9)	
18	Broadway/Thomas L. Berkley Way (20th Street)	AM	B (11.8)	B (13.8)	B (13.8)	In
		PM	B (12.4)	B (12.6)	B (13.1)	
19	Broadway/19th Street	AM	B (13.0)	B (13.4)	B (13.4)	In
		PM	B (13.6)	C (24.9)	C (30.4)	
20	Broadway/17th Street	AM	B (13.9)	B (18.7)	C (22.3)	In
		PM	B (12.9)	B (15.7)	B (16.2)	
21	Broadway/15th Street	AM	A (7.2)	A (8.1)	A (7.8)	In
		PM	A (8.5)	B (10.1)	B (10.0)	
22	Broadway/14th Street	AM	B (12.6)	B (13.1)	B (13.2)	In
		PM	B (13.5)	B (14.1)	B (14.4)	
23	Frontage Road/West Grand Ave	AM	C (30.5)	F (166.5)	F (179.4)	Out
		PM	E (57.7)	F (223.7)	F (225.7)	

Table IV.D-26 *continued*

	Intersection	Peak Hour	Intersection LOS (Average Vehicle Delay in Seconds) Existing	Year 2025 No Project	Year 2025 With Project	Location (In or Outside of Downtown Area)
24	Mandela Pkwy/West Grand Ave	AM	B (17.2)	C (20.7)	C (20.8)	Out
		PM	B (19.9)	D (54.8)	E (63.1)	
25	Northgate Ave/West Grand Ave	AM	C (26.2)	D (44.7)	E (55.7)	In
		PM	C (26.5)	E (77.0)	E (84.8)	
26	Webster Street/Grand Avenue	AM	B (17.0)	C (24.8)	D (37.5)	In
		PM	C (22.2)	C (25.3)	C (26.2)	
27	Harrison Street/Grand Avenue	AM	C (22.6)	C (32.2)	D (36.7)	In
		PM	C (27.9)	E (55.8)	E (60.5)	
28	El Embarcadero/Grand Avenue	AM	B (19.0)	B (19.9)	C (20.3)	Out
		PM	C (25.2)	C (31.7)	C (33.8)	
29	MacArthur Blvd/Grand Avenue	AM	C (21.7)	C (23.0)	C (23.2)	Out
		PM	C (27.9)	C (31.7)	D (36.2)	
30	MacArthur Blvd/Lakeshore Ave	AM	B (16.5)	B (16.7)	B (17.2)	Out
		PM	C (23.7)	C (27.1)	C (30.0)	
31	Lake Park Ave/Lakeshore Ave	AM	D (49.3)	E (76.0)	E (79.0)	Out
		PM	C (34.9)	D (41.4)	D (46.3)	
32	Brush Street/18th Street	AM	A (5.7)	A (8.4)	B (11.6)	In
		PM	A (9.4)	A (9.6)	B (10.6)	
33	Castro Street/18th Street	AM	A (7.3)	A (8.3)	A (9.0)	In
		PM	B (14.0)	D (51.7)	E (61.1)	
34	Martin Luther King Jr. Way/18th St.	AM	B (10.6)	B (12.1)	B (11.9)	In
		PM	B (11.9)	B (13.8)	B (14.2)	
35	Brush Street/17th Street	AM	A (7.4)	A (8.7)	A (8.9)	In
		PM	B (10.0)	B (11.6)	B (11.8)	
36	Castro Street/17th Street	AM	C (24.7)	C (30.2)	C (32.8)	In
		PM	C (28.1)	E (60.0)	E (71.7)	
37	Martin Luther King Jr. Way/17th St.	AM	B (11.7)	B (12.2)	B (12.2)	In
		PM	B (10.6)	B (11.2)	B (11.3)	
38	Jefferson Street/17th Street	AM	B (11.3)	B (11.5)	B (11.6)	In
		PM	B (10.3)	B (10.8)	B (11.0)	
39	Franklin Street/17th Street	AM	B (15.4)	D (36.2)	D (52.2)	In
		PM	B (12.5)	D (44.1)	D (52.9)	
40	Webster Street/17th Street	AM	B (10.0)	B (11.8)	B (12.7)	In
		PM	B (10.6)	B (12.5)	B (13.1)	

Note: 1. Intersections 7 and 9 (San Pablo Avenue/William Street and San Pablo Avenue/18th Street) are stop controlled and traffic signals exist at the remaining 38 study intersections.
2. Intersections that currently or are projected to operate at a LOS E or F are shaded .
3. Intersections located inside the City's downtown planning area are noted as "In" in the location column, and intersections located outside the downtown area are noted as "Out".

Source: Korve Engineering, 2003.

Table IV.D-27: Summary of Year 2025 Freeway Density LOS Analysis

Freeway/Segment	Dir.	Peak Hour	No Project		With Project		Percent Project Volume
			LOS	Density (pc/km/ln)	LOS	Density (pc/km/ln)	
Interstate 880							
Oak Street/Madison Street	N	AM	E	23.6	E	23.8	0.35%
		PM	D	16.4	D	16.6	0.83%
	S	AM	C	15.1	C	15.2	0.57%
		PM	E	24.2	E	24.4	0.28%
Broadway/Jackson Street	N	AM	F	-	F	-	0.34%
		PM	D	21.9	E	22.4	0.78%
	S	AM	C	13.8	C	13.9	0.61%
		PM	D	19.2	D	19.3	0.32%
Junction. I-980/Market Street	N	AM	F	-	F	-	0.00%
		PM	C	15.6	C	15.6	0.00%
	S	AM	B	9.0	B	9.0	0.00%
		PM	D	19.3	D	19.3	0.00%
Interstate 980							
Junction I-880/6th Street	N	AM	C	13.7	C	13.9	1.41%
		PM	D	17.6	D	18.2	2.17%
	S	AM	C	12.5	C	12.7	1.11%
		PM	B	10.8	B	11	1.31%
18th Street/W. Grand Avenue	N	AM	A	5.6	A	5.7	0.82%
		PM	C	12.4	C	12.4	0.51%
	S	AM	C	13.4	C	13.4	0.00%
		PM	A	6.9	A	6.9	0.00%
State Route 24							
Junction I-580 (42nd/45th Streets)	E	AM	B	7.3	B	7.4	0.79%
		PM	D	17.1	D	17.2	0.44%
	W	AM	D	19.9	D	20.0	0.21%
		PM	B	10.3	B	10.4	0.67%
Interstate 580							
Grand Avenue/Adams Street	E	AM	C	12.8	C	12.8	0.00%
		PM	F	-	F	-	0.13%
	W	AM	F	-	F	-	0.04%
		PM	D	16.2	C	16.2	0.15%
Harrison Street/Piedmont Avenue	E	AM	B	9.0	B	9.0	0.00%
		PM	D	19.5	D	19.5	0.09%
	W	AM	E	22.5	E	22.6	0.04%
		PM	C	11.9	C	11.9	0.16%

Note: 1. Traffic volumes in the Year 2010 No Project scenario are based on the ACCMA's model.
2. Segments that currently or are projected to operate at a LOS E or F are shaded.
3. Caltrans requires the use of the "density" calculation while the City of Oakland requires the "volume-to-capacity ratio" methodology. Project impacts are assessed based on the "volume-to-capacity" ratio methodology.

Source: Korve Engineering, 2003.

Table IV.D-28: Summary of Year 2025 Freeway Volume to Capacity LOS Analysis

Freeway/Segment	Dir.	Peak Hour	No Project			With Project		
			LOS	V/C	Volume/ Lane/ Hour	LOS	V/C	Volume/ Lane/ Hour
Interstate 880								
Oak Street/Madison Street	N	AM	F	1.05	2,090	F	1.05	2,098
		PM	D	0.84	1,678	D	0.85	1,692
	S	AM	D	0.78	1,566	D	0.79	1,574
		PM	F	1.06	2,114	F	1.06	2,120
Broadway/Jackson Street	N	AM	F	1.22	2,437	F	1.22	2,445
		PM	F	1.01	2,022	F	1.02	2,038
	S	AM	C	0.72	1,442	C	0.73	1,451
		PM	E	0.94	1,879	E	0.94	1,885
Junction. I-980/Market Street	N	AM	F	1.25	2,509	F	1.25	2,509
		PM	D	0.81	1,616	D	0.81	1,616
	S	AM	B	0.47	943	B	0.47	943
		PM	E	0.94	1,888	E	0.94	1,888
Interstate 980								
Junction I-880/6th Street	N	AM	C	0.73	1,453	C	0.74	1,474
		PM	D	0.90	1,809	E	0.92	1,848
	S	AM	C	0.66	1,328	C	0.67	1,343
		PM	C	0.57	1,146	C	0.58	1,161
18th Street/W. Grand Avenue	N	AM	A	0.30	600	A	0.30	604
		PM	C	0.66	1,315	C	0.66	1,322
	S	AM	C	0.71	1,423	C	0.71	1,423
		PM	B	0.37	735	B	0.37	735
State Route 24								
Junction I-580 (42nd/45th Streets)	E	AM	B	0.40	794	B	0.40	801
		PM	D	0.91	1,817	E	0.91	1,825
	W	AM	F	1.00	2,005	F	1.00	2,010
		PM	C	0.56	1,127	C	0.57	1,135
Interstate 580								
Grand Avenue/Adams Street	E	AM	C	0.70	1,401	C	0.70	1,401
		PM	F	1.28	2,565	F	1.28	2,569
	W	AM	F	1.37	2,739	F	1.37	2,740
		PM	D	0.87	1,745	D	0.87	1,748
Harrison Street/Piedmont Avenue	E	AM	B	0.49	980	B	0.49	980
		PM	E	0.99	1,990	E	1.00	1,992
	W	AM	F	1.07	2,150	F	1.08	2,151
		PM	C	0.65	1,305	C	0.65	1,307

Note: 1. Roadway capacities assumed to be 2,000 vehicles per hour per lane for freeways.
2. Segments that currently or are projected to operate at a LOS E or F are shaded.
3. Caltrans requires the use of the "density" calculation while the City of Oakland requires the "volume-to-capacity ratio" methodology. Project impacts are assessed based on the "volume-to-capacity" ratio methodology.

Source: Korve Engineering, 2003.

Table IV.D-29: 2025 Intersection LOS Summary With Mitigation

	Intersection	Peak Hour	Intersection LOS (Average Vehicle Delay in seconds)					
			Existing Timing		Optimized Timing		With Intersection Improvements	
			No Project	With Project	No Project	With Project	No Project	With Project
3	San Pablo Ave/27th St	AM	B (11.0)	B (11.2)	NR	NR	NR	NR
		PM	E (69.2)	E (74.0)	D (40.3)	D (43.4)	NR	NR
5	San Pablo Ave/West Grand Ave *	AM	B (19.4)	C (20.4)	NR	NR	NR	NR
		PM	F (85.7)	F (111.1)	D (39.0)	E (78.5)	NR	NR
6	San Pablo Ave/Thomas L. Berkley Way (20th Street) *	AM	B (18.0)	C (22.0)	NR	NR	NR	NR
		PM	C (27.0)	F (87.9)	C (27.0)	D (44.9)	NR	NR
11	Telegraph Ave/West Grand Ave *	AM	E (57.3)	E (66.3)	D (41.1)	E (55.1)	NR	NR
		PM	D (51.1)	E (78.6)	D (46.8)	E (62.8)	NR	NR
12	Telegraph Ave/Thomas L. Berkley Way (20th Street) *	AM	E (76.1)	F (86.7)	A (9.7)	B (12.5)	NR	NR
		PM	F (272.6)	F (260.6)	E (71.2)	E (78.1)	NR	NR
13	Telegraph Ave/William St *	AM	D (44.0)	E (63.0)	NR	NR	NR	NR
		PM	F (90.3)	F (98.7)	A (3.9)	B (13.7)	NR	NR
14	Telegraph Ave/19th St *	AM	E (65.2)	F (126.3)	C (21.2)	D (44.6)	B (19.2)	C (27.0)
		PM	F (95.1)	F (134.9)	E (65.5)	F (107.5)	D (43.5)	E (66.5)
23	Frontage Rd/West Grand Ave	AM	F (166.5)	F (179.4)	F (128.3)	F (140.1)	D (37.5)	D (41.2)
		PM	F (223.7)	F (225.7)	F (215.7)	F (217.5)	E (56.5)	E (58.4)
24	Mandela Pkwy/West Grand Ave	AM	C (20.7)	C (20.8)	NR	NR	NR	NR
		PM	D (54.8)	E (63.1)	D (45.8)	D (47.8)	NR	NR
27	Harrison Street/Grand St *	AM	C (32.2)	D (36.7)	NR	NR	NR	NR
		PM	E (55.8)	E (60.5)	D (52.1)	E (56.1)	NR	NR
36	Castro St/17th St *	AM	C (30.2)	C (32.8)	NR	NR	NR	NR
		PM	E (60.0)	E (71.7)	D (40.2)	D (45.9)	NR	NR

Note: 1. NR = Not Required.
2. Intersections that currently or are projected to operate at a LOS E or F are shaded.
3. Study intersections that are located within the City of Oakland's downtown area are noted with an asterisk (*) after the intersection name.

Source: Korve Engineering, 2003.

2025 Traffic Impacts and Mitigations. The additional trips generated by the Uptown Project will not significantly impact the freeway system. However based on the City of Oakland's traffic impact criteria, the Project will result in a significant traffic impact at 11 of the 40 study intersections based on the 2025 intersection level of service analysis. Table IV.D-29 presents the LOS and average vehicle delay for the impacted study intersections.

The impacted intersections and the recommended mitigation measures are presented below.

San Pablo Avenue/27th Street

Impact TRANS-4: In the PM peak hour, the San Pablo/27th Street intersection would operate at LOS E in the Year 2025 No Project and Year 2025 Plus Project scenarios. The Project would cause the total intersection average vehicle delay to increase by six or more seconds. (S)

> Mitigation Measure TRANS-4: Optimization of the signal timing at the intersection of San Pablo and 27th Street would improve function to a LOS D in the PM peak hour. Preparation and implementation of the signal optimization and coordination plan detailed in Mitigation Measure TRANS-1 will ensure that this impact is reduced to a less-than-significant level. (LTS)

The implementation of Mitigation Measure TRANS-2 would not lead to any adverse impacts.

San Pablo Avenue/West Grand Avenue

Impact TRANS-5: The addition of Project traffic to the Year 2025 Baseline condition would result in a significant adverse impact at the intersection of San Pablo Avenue/West Grand Avenue. The intersection was identified as operating at LOS F in the Year 2025 No Project Condition in the PM peak hour. The addition of Project traffic would cause the total intersection average vehicle delay to increase by two or more seconds. (S)

> Mitigation Measure TRANS-5: Optimization of the signal timing at the intersection of San Pablo and West Grand Avenue would improve the function to a LOS E in the PM peak hour. Preparation and implementation of the signal optimization and coordination plan detailed in Mitigation Measure TRANS-1 will ensure that this impact is reduced to a less-than-significant level. (LTS)

The implementation of Mitigation Measure TRANS-5 would not lead to any adverse impacts

San Pablo Avenue/Thomas L. Berkley Way (20th Street)

Impact TRANS-6: The addition of Project traffic to the Year 2025 Baseline condition would result in a significant adverse impact at the intersection of San Pablo Avenue/Thomas L. Berkley Way (20th Street). The intersection was identified as operating at LOS C in the Year 2025 No Project Condition in the PM peak hour. The addition of Project traffic would result in the intersection operating at LOS F. (S)

> Mitigation Measure TRANS-6: Optimization the signal timing at the intersection of San Pablo and Thomas L. Berkley Way (20th Street). By optimizing the signal timing splits, the

intersection would improve the function to a LOS D in the PM peak hour. Preparation and implementation of the signal optimization and coordination plan detailed in Mitigation Measure TRANS-1 will ensure that this impact is reduced to a less-than-significant level. (LTS)

The implementation of Mitigation Measure TRANS-6 would not lead to any adverse impacts.

Telegraph Avenue/West Grand Avenue

Impact TRANS-7: The addition of Project traffic to the Year 2025 Baseline condition would result in a significant adverse impact at the intersection of Telegraph Avenue/West Grand Avenue. The intersection was identified as operating at LOS E in the Year 2025 No Project Condition in the AM peak hour. The addition of Project traffic would cause an increase in the average delay for critical movements to increase by more than six seconds in the AM peak hour. (S)

Mitigation Measure TRANS-7: Optimization of the signal timing and changing the cycle length to 65 seconds at this intersection would mitigate the delay that would result from the proposed Project. Preparation and implementation of the signal optimization and coordination plan detailed in Mitigation Measure TRANS-1 will ensure that this impact is reduced to a less-than-significant level. (LTS)

The implementation of Mitigation Measure TRANS-7 would not lead to any adverse impacts.

Telegraph Avenue/Thomas L. Berkley Way (20th Street)

Impact TRANS-8: With the Project, the Telegraph Avenue/Thomas L. Berkley Way (20th Street) intersection LOS would degrade from LOS E to LOS F in the AM peak hour. In the PM peak hour, the Telegraph Avenue/Thomas L. Berkley Way (20th Street) intersection would operate at LOS F in the Year 2025 No Project and Year 2025 Plus Project scenarios. (S)

Mitigation Measure TRANS-8: Optimization of the signal timing in the AM peak hour and changing the cycle length to 70 seconds at this intersection would mitigate the Projects increase in delay. Preparation and implementation of the signal optimization and coordination plan detailed in Mitigation Measure TRANS-1 will ensure that this impact is reduced to a less-than-significant level. (LTS)

The implementation of Mitigation Measure TRANS-8 would not lead to any adverse impacts.

Telegraph Avenue/William Street

Impact TRANS-9: The Telegraph Avenue/William Street intersection would operate at LOS F in the PM peak hour in the Year 2025 No Project and Year 2025 Plus Project scenarios. The Project would cause the total intersection average delay to increase by two or more seconds. In addition, the Project would increase average delay for the critical movements by four or more seconds. (S)

Mitigation Measure TRANS-9: Changing the cycle length to 80 seconds and optimizing signal timing would improve the function of this intersection to LOS C in the PM peak hour. By optimizing the signal timing splits and changing the signal cycle, the Projects increase in delay would be mitigated. Preparation and implementation of the signal optimization and coordination plan detailed in Mitigation Measure TRANS-1 will ensure that this impact is reduced to a less-than-significant level. (LTS)

The implementation of Mitigation Measure TRANS-9 would not lead to any adverse impacts.

Telegraph Avenue/19th Street

Impact TRANS-10 The addition of Project traffic to the Year 2025 Baseline condition would result in a significant adverse impact at the Telegraph Avenue/19th Street intersection. With the Project, the intersection LOS would degrade from LOS E to LOS F in the AM peak hour. In the PM peak hour, the Telegraph Avenue/19th Street intersection would operate at LOS F in the Year 2025 No Project and Year 2025 Plus Project scenarios. In addition, the Project would increase average delay for the critical movements by four or more seconds in the PM peak hour. Both of these changes are considered to be significant adverse impacts based on City standards. (S)

Mitigation Measure TRANS-10: The Project shall provide for the following two improvements.

- Optimize the signal timing at the intersection of Telegraph and 19th Street. Since this intersection also functions as part of an integrated signal system in downtown Oakland, Mitigation Measure TRANS-1B shall also be implemented.
- Restripe the westbound 19th Street approach to provide two exclusive through lanes and an exclusive right turn lane.

With these improvements, the intersection would operate at LOS C in the AM peak hour and LOS E in the PM peak hour.

The restriping of the westbound 19th Street approach to the intersection to provide two exclusive through lanes and an exclusive right turn lane would require the elimination of six metered parking spaces on the northern side of 19th Street between Telegraph and Broadway. With the existing roadway width available the two through lanes would each be 11 feet wide and the right turn lane would be 10 feet wide, which would satisfy City standards of 10-foot lanes. Metered parking would remain on the southern side of 19th Street. (LTS)

Frontage Road/West Grand Avenue

Impact TRANS-11 The Frontage Road/West Grand Avenue intersection would operate at LOS F in the AM and PM peak hours in Year 2025 No Project and Year 2025 plus Project conditions. The Project would cause the total intersection average vehicle delay to increase by two or more seconds in the AM and PM peak hours. In addition, the Project would increase in average delay for critical movements by four or more seconds. (S)

Mitigation Measure TRANS-11: Widen the eastbound approach to accommodate two left turn lanes, two through lanes, and a right turn lane. Widen the southbound approach would need to accommodate a right turn lane, a left turn lane, and a shared through/right turn lane. In addition, the northbound approach should be converted from a left turn lane, a through lane, and a shared through/right turn lane to a left turn lane, a shared through/right turn lane, and a right turn lane. With the proposed improvements, the intersection would operate at LOS C in the AM peak hour and LOS D in the PM peak hour.

The intersection of Frontage Road and West Grand Avenue is located on an elevated structure which is within the jurisdiction of Caltrans. The proposed mitigation measures would require the expansion of the existing elevated structure and modification of the traffic signal. Widening of the existing structure would require additional support columns and the acquisition of right of way underneath the structure. In addition, the connector from Interstate 880 to Interstate 80 structure exists above this intersection. Columns supporting this elevated connector may have to be relocated to pursue the widening of the Frontage Road/West Grand Avenue intersection. The implementation of this mitigation measure would not be economically feasible. Because this intersection is located outside of the City of Oakland's jurisdiction and because it is not economically feasible, it is significant and unavoidable. (SU)

Mandela Parkway/West Grand Avenue

Impact TRANS-12: The addition of Project traffic at the Mandela Parkway/West Grand Avenue intersection would cause the service level to degrade from LOS D in the Year 2025 No Project Condition to LOS E in the Year 2025 with Project Condition during the PM peak hour. (S)

Mitigation Measure TRANS-12: Changing the cycle length to 110 seconds, providing protected left turn phases on the eastbound and westbound approaches, and optimizing the signal timing would improve the function of this intersection to a LOS D in the PM peak hour. Preparation and implementation of the signal optimization and coordination plan detailed in Mitigation Measure TRANS-1 will ensure that this impact is reduced to a less-than-significant level. (LTS)

The implementation of Mitigation Measure TRANS-12 would not lead to any adverse impacts.

Harrison Street/Grand Avenue

Impact TRANS-13: The Harrison/Grand Avenue intersection was found to operate at LOS E in the Year 2025 No Project and Year 2025 with Project Conditions during the PM peak hour. The Project would cause an increase in the average delay for critical movements by more than six seconds in the PM peak hour. (S)

Mitigation Measure TRANS-13: Changing the cycle length to 110 seconds and optimizing the signal timing splits would mitigate the Project's impact. Preparation and implementation of the signal optimization and coordination plan detailed in Mitigation Measure TRANS-1 will ensure that this impact is reduced to a less-than-significant level. (LTS)

The implementation of Mitigation Measure TRANS-13 would not lead to any adverse impacts.

Castro Street/17th Street/I-980 Off Ramp

Impact TRANS-14: In the PM peak hour, the Castro Street/17th Street /I-980 Off-Ramp intersection would operate at LOS E in the Year 2025 No Project and Year 2025 Plus Project scenarios. The Project would cause an increase in the average delay for the critical movements of six or more seconds. (S)

Mitigation Measure TRANS-14: Optimization of the intersection's signal timing at this intersection would improve the function of this intersection to operate at LOS D in the PM peak hour. Preparation and implementation of the signal optimization and coordination plan detailed in Mitigation Measure TRANS-1 will ensure that this impact is reduced to a less-than-significant level. (LTS)

The implementation of Mitigation Measure TRANS-14 would not lead to any adverse impacts

(4) Parking Impacts and Mitigations. Table IV.D-30 summarizes the vehicle parking requirements for the proposed Project. The adequacy of on-site parking is evaluated by comparing the City of Oakland's Planning Code requirements with the planned on-site parking that will be provided by the Project. The City's parking requirements are based on the zoning designation for the property. The proposed Project is located in two zoning areas. The portion of the Project along Telegraph Avenue and 18th Street is in zone "C-55/S-17" and the rest of the Project is in zone "C-51/S-17." All of the planned retail uses will be located in the C-55 zone, which is in the CBD area and does not require any parking.

Table IV.D-30: Summary of Project Parking Requirements – City of Oakland Code

Land Use	Size	Parking Requirement	Parking Spaces Required
Apartments	1,000 units	1 stall per DU	1,000
Condominiums	270 units	1 stall per DU	270
Student Housing	600 units	1 stall per 2 units	300
Faculty Housing	50 units	1 stall per DU	50
Retail	33,000 sf	Not Required	0
		Total	**1,620**

Source: City of Oakland Municipal Code Title 17 Chapter 116.060; Korve Engineering, 2003.

According to City code the Uptown Project will require a total of 1,620 vehicle parking spaces. The proposed Project will provide adequate parking to comply with the City of Oakland's zoning requirements. In addition to the on-site parking provided for the Project there would be 176 on-street parking spaces (including service area) provided within the right-of-way of the proposed streets within the Project and along the Project frontage on San Pablo Avenue. The on-street parking spaces will primarily be used by visitors.

Currently there are 1,242 parking spaces on the Uptown Project site that will be removed when the Project is constructed. The majority of the people that currently use this parking are expected to use transit in the future, or utilize other parking facilities in the area.

The proposed Project will meet the City's planning code requirements for on-site parking and will provide sufficient parking for the proposed Project's residents and tenants. As a result, no significant impacts related to parking will occur.

(5) Pedestrian/Bicycle Facility Impacts and Mitigations. Pedestrian access within the Project site will be provided by interconnected sidewalks and pedestrian courts.

Table IV.D-31 summarizes the City of Oakland recommended provisions for bicycle parking for projects in the downtown area. Class I bicycle parking spaces are located in a secured area (e.g. lockers). Class II bicycle parking spaces are located on-street (e.g. racks).

Table IV.D-31: Summary of Project Bicycle Parking – Recommended by the City of Oakland

Land Use	Size	Class I Parking Requirement	Class II Parking Spaces Required
Apartments	1,000 units	1 stall per 3 DU	1 stall per DU
Condominiums	270 units	1 stall per 3 DU	1 stall per DU
Student Housing	1000 beds	1 stall per 2 beds	1 stall per 2 units
Faculty Housing	50 units	1 stall per 2 DU	1 stall per DU
Retail	33,000 sf	1 space per 30 employees	1 space per 3000 sf of restaurant space or minimum of 4

Source: Public Works Agency, City of Oakland

Table IV.D-32 summarizes the total number of bicycle parking facilities recommended by the City of Oakland for each Project block. The residential portion of the Uptown Project would need to provide a total of 947 Class I bicycle parking spaces and 156 Class II bicycle parking spaces to satisfy the City's recommendation. The commercial portion of the Uptown Project would need to provide a total of four Class I bicycle parking spaces and 16 Class II bicycle parking spaces to satisfy the City's recommendation.

(6) Site Access and Internal Circulation Impacts and Mitigations. Several new north/south roadways will be constructed on-site in order to provide internal circulation and access to the planned parking garages. The Project driveway on 21st Street serving Parcel 7 will have the largest number of Project trips. This access is expected to operate at an acceptable level of service because 21st Street is a one-way street so access to and from the Project will be restricted to right-turn-only movements. The Project access serving Parcels 5 and 6 just west of the Fox Theatre would serve the second largest number of vehicles. Full movements in and out of the driveway will be permitted on to the new "Lane C." This driveway and the remaining Project driveways were found to function at LOS B or better with full build out of Project traffic. No additional site access or internal circulation improvements were found to be necessary.

c. Transit. The City of Oakland considers the potential impacts related to transit to be significant where a Project:

- Increases the peak hour average ridership on BART by 3 percent where the passenger volume would exceeds the standing capacity of BART trains; or
- Increases the peak hour average ridership at a BART station by 3 percent where average waiting time at fare gates would exceed 1 minute; and
- Increases the average ridership on AC Transit lines by 3 percent at bus stops where the average load factor with the Project in place would exceed 125 percent over a peak 30-minute period.

The proposed Project is forecast to result in 1,464 BART trips and 897 AC Transit bus trips to and from the proposed Project site on an average weekday. In the morning peak hour, the proposed Project is forecast to generate approximately 112 BART trips (18 inbound, 94 outbound) and 69 AC Transit bus trips (11 inbound, 58 outbound). In the evening peak commute hour, the Project would generate roughly 137 BART trips (92 inbound, 45 outbound) and 84 AC Transit bus trips (56

Table IV.D-32: Summary of Project Bicycle Parking – Recommended by the City of Oakland

Block	Residential Parking – Class I	Residential Parking – Class II	Commercial Parking – Class I	Commercial Parking – Class II	Total – Class I	Total – Class II
1	63	13	0	0	63	13
2	63	13	0	0	63	13
3	83	17	1	3	84	19
4	75	15	2	5	77	20
5	90	18	0	0	90	18
6	48	10	0	0	46	10
7	525	70	1	4	526	74
8 and 9	0	0	0	4	0	4
Total	**947**	**156**	**4**	**16**	**949**	**171**

Source: Public Works Agency, the City of Oakland.

inbound, 28 outbound). It is important to note that the majority of both the vehicle and transit trips generated by the Project are in the off-peak direction, which will result in better utilization of the existing transportation system in downtown Oakland.

(1) Project BART Ridership. The potential Project-related impacts on both BART lines and the BART station were investigated. The anticipated BART trips were assigned to each of the BART lines at the 19th Street Station based on the existing ridership share of each line. Table IV.D-33 presents the number of passengers from the Uptown Project that are expected to use each BART line, along with the Project-related percentage increase in passengers and the load factor with the Project. The number of new Project-related trips assigned to a BART line ranges from 1 to 48, which will result in less than a 1 percent increase in ridership. The increases are all less than the 3 percent that the City of Oakland has identified as the threshold of significant impact on BART service. In addition, load factors on all lines are below 115 percent for lines in the East bay and 135 percent for transbay lines with the completion of the proposed Uptown Project. It is therefore in compliance with the performance measures of BART described in the 2001 Congestion Management Program (CMP 2001) of the Alameda County Congestion Management Agency (ACCMA).[9]

During the morning peak hour (8:00 a.m. to 9:00 a.m.), passengers entering the 19th Street BART station will increase by approximately 17 percent due to the Project. Currently, most riders exit the 19th Street BART station during morning peak hour. Therefore, the increase in passengers entering the station during the morning peak hour will help balance the inflow and outflow of passengers. The Project is expected to add on average less than one person per gate per minute. Since the current waiting time at fare gates is less than 15 seconds during the morning peak,[10] the waiting time is

[9] Chapter 4. Congestion Management Program, 2001. Alameda County Congestion Management Agency

[10] A maximum of eight people were observed waiting at the BART ticket gates during the morning peak hour, based on a site observation conducted on Tuesday, August 12, 2003. The last person in the queue took 15 seconds to pass through the gate. During the evening peak hour, the largest observed queue was four people. The last person in the longest line took 9 seconds to pass through the gate during the evening peak. An average of approximately 3 to 4 people waiting at the exit gates was observed during the morning peak hour, with an average queue of two people during the evening peak hour.

Table IV.D-33: Project BART Ridership

BART Lines	Time	Passengers From Project		Project Related Percentage Increase in Passengers		Load Factor With Project	
		Alighting	Boarding	Before Alighting	After Alighting	Before Alighting	After Alighting
Richmond – Daly City	8-9 a.m.	4	25	0.15%	0.90%	102%	103%
	5-6 p.m.	7	4	0.70%	0.32%	35%	43%
Daly City –Richmond	8-9 a.m.	1	6	0.15%	0.90%	35%	26%
	5-6 p.m.	18	8	0.70%	0.32%	92%	93%
Richmond–Fremont	8-9 a.m.	1	6	0.15%	0.90%	31%	24%
	5-6 p.m.	6	4	0.75%	0.32%	49%	70%
Fremont–Richmond	8-9 a.m.	2	6	0.15%	0.90%	57%	37%
	5-6 p.m.	6	3	0.75%	0.32%	52%	59%
Pittsburg/Bay Point – Millbrae	8-9 a.m.	8	46	0.15%	0.90%	104%	101%
	5-6 p.m.	8	4	0.75%	0.32%	28%	33%
Millbrae–Pittsburg / Bay Point	8-9 a.m.	1	5	0.15%	0.90%	29%	21%
	5-6 p.m.	48	23	0.70%	0.32%	112%	114%

Source: Korve Engineering, 2003.

expected to still be below 1 minute (the threshold of significance set by the City of Oakland concerning waiting time at BART gates) with the addition of anticipated BART riders from the Uptown Project.

During the evening peak hour (5:00 p.m. to 6:00 p.m.), passengers exiting the 19th Street BART station will increase by approximately 19 percent due to the Project. Currently, most riders enter the station during the evening peak hour. Therefore, the Project-related increase in passengers exiting the station during evening peak hour will help balance the inflow and outflow of passengers. On average, the Uptown Project will result in six more people from a train on the busiest line and these people will disperse to 10 exit gates. The current maximum wait time to pass through the exit gates is approximately 10 seconds, therefore the Uptown Project is not expected to impact the operation of the 19th Street BART station.

The Project impact on the 19th Street BART station by new entering passengers is shown in Table IV.D-34, and the Project impact on exiting passengers is shown in Table IV.D-35.

(2) Project AC Transit Ridership. The potential Project-related impacts on AC Transit were evaluated by calculating the total number of bus trips generated by the Project and then distributing the bus trips to the bus lines near the Project based on their current peak hour riderships. The percentage increase of riders on each bus line was computed to determine if it exceeds the 3 percent threshold of significance set by the City of Oakland concerning impacts on bus services.

Table IV.D-34: 19th Street BART Station Entry Gates

	Time	Existing Number of Passengers	New Passengers	Project Related Percentage Increase in Passengers	Average Passengers Per Gate Per Minute With The Project	Average Passengers Per Gate Per Minute Added By The Project
Entries	8-9 a.m.	552	94	17.1%	2.7	0.4
	5-6 p.m.	1,728	45	2.6%	3.0	0.1

Source: BART, April and May 2003; Korve Engineering, 2003

Table IV.D-35: 19th Street BART Station Exit Gates

	Time	Existing Number of Passengers	New Passengers	Project Related Percentage Increase in Passengers	Average Number of People From a Train on the Busiest Line*	Average Number of People From a Train on the Busiest Line Added by the Project
Exits	8-9am	1,702	18	1.1%	55	1.1
	5-6pm	489	92	18.7%	27	5.8

* Pittsburg/Bay Point–Millbrae line for AM and Millbrae–Pittsburg/Bay Point line for PM.

Source: BART, April and May 2003; Korve Engineering, 2003.

Referring to Table IV.D-36, the Project is expected to increase the ridership of bus lines #11 and #12 by more than 3 percent. However, these bus lines have relatively low maximum load factors that are all considerably below the maximum desirable load factor of 125 percent. The percentage increases of riders due to the Uptown Project will be below 3 percent for all the other bus lines near the Project.

The maximum load factors are high on bus lines 40/40L, 43, 51 and 72 based on the most recent data from AC Transit that has been collected in the last couple of years. To improve bus service in the area, AC Transit introduced a set of service improvements on June 31, 2003. Improvements included increasing the frequency of bus #51 during peak periods and replacing the old 72L and 73 bus lines with 72M and 72R in order to strengthen services along San Pablo Avenue. In addition, there are seven other bus lines not included in Table IV.D-31 that run a few blocks from the Project site. Some Project-related bus trips are expected to use these additional bus lines. Therefore, the actual new maximum load factors are expected to be significantly lower than those calculated from AC Transit data.

(3) Transit Impacts and Mitigation Measures. The proposed Project would result in less than a 1 percent increase in the ridership on any BART line at the 19th Street station. Therefore, no significant Project related impact to BART is anticipated. As shown in Table IV.D-36, the Uptown Project will not increase the ridership on an AC Transit route by 3 percent where the maximum load factor with the Project completed will exceed 125 percent. Therefore, the proposed Project would not impact AC Transit.

Table IV.D-36: AC Transit Ridership

Line	Direction	AM Peak			PM Peak		
		New Riders	Percent Increase	New Maximum Load Factor	New Riders	Percent Increase	New Maximum Load Factor
11	NB	1	3.5%	38%	1	5.5%	26%
	SB	1	2.5%	35%	5	4.0%	108%
12	NB	2	3.1%	48%	2	3.6%	55%
	SB	2	3.1%	57%	1	3.8%	33%
15	NB	3	2.2%	78%	3	2.9%	61%
	SB	(No data available)					
40/40L	NB	6	2.7%	124%	5	2.9%	113%
	SB	6	2.1%	162%	6	2.8%	129%
43	NB	6	2.6%	168%	7	2.8%	176%
	SB	5	2.3%	143%	5	2.6%	117%
51	NB	5	2.6%	128%	8	2.1%	265%
	SB	5	2.7%	123%	4	2.7%	115%
72	NB	5	2.6%	82%	4	2.8%	67%
	SB	12	2.7%	190%	4	2.7%	65%

Source: Howard Der, AC Transit Long Range Planning & Data Analysis Department. Korve Engineering, 2003.

The Project will primarily result in increased ridership on BART and AC Transit in the off-peak direction, therefore utilizing available capacity in the existing transit system. All the potential transit impacts are below the threshold of significance set by the City of Oakland and do not exceed the ACCMA performance measures outlined in the 2001CMP; therefore, significant impacts related to transit are anticipated as a result of the Uptown Project.

3. ACCMA Land Use Analysis

This section provides a summary of the traffic operations analysis based on the Alameda County Congestion Management Agency (ACCMA)'s model with the ACCMA land use projections. Based on the ACCMA's model without the City's land-use assumptions, traffic volume increases for each study intersection were estimated. The ACCMA's Model with ACCMA's land use generally results in lower traffic levels than that of the City of Oakland's updated land use.

Table IV.D-37 summarizes the LOS and average vehicle delay for the 2010 and 2025 analysis based on the ACCMA land use projections. The delays are generally slightly less than the delays based on the City of Oakland's updated land use.

A comparison of the traffic analysis based on the ACCMA and City of Oakland's updated land uses, indicate that ten of the study intersections would operate at a better level of service during at least one of the peak periods based on the ACCMA land uses.

The ACCMA analysis identified no additional Project-related traffic impacts.

Table IV.D-37: Summary Level of Service Analysis – ACCMA Land Use

	Intersection	Peak Hour	Intersection LOS (Average Vehicle Delay in Seconds)				
				Year 2010		Year 2025	
			Existing	No Project	With Project	No Project	With Project
1	San Pablo Ave/31st Street	PM	A (9.5)	B (11.0)	B (11.1)	B (11.0)	B (11.1)
2	San Pablo Ave/Market /25th Street	PM	A (9.9)	B (12.2)	B (12.2)	B (12.2)	B (12.2)
3	San Pablo Ave/27th Street	PM	B (12.3)	E (60.9)	E (65.5)	E (60.9)	E (65.5)
4	San Pablo Ave/West/25th Street	PM	B (14.3)	B (16.6)	B (17.0)	B (16.6)	B (17.0)
5	San Pablo Ave/West Grand Ave	PM	B (16.9)	E (73.7)	F (98.1)	E (73.7)	F (98.1)
6	San Pablo Ave/Thomas L. Berkley Way (20th Street)	PM	B (13.1)	C (33.6)	F (121.6)	C (34.0)	F (121.9)
7	San Pablo Ave/William Street	PM	A (1.4)	A (1.5)	A (1.5)	A (1.5)	A (1.5)
8	San Pablo Ave/19th Street	PM	C (24.7)	C (26.2)	C (28.2)	C (26.3)	C (28.2)
9	San Pablo Ave/18th Street	PM	A (2.9)	A (2.2)	A (2.3)	A (2.2)	A (2.3)
10	San Pablo Ave/17th Street	PM	B (19.9)	C (20.5)	C (20.5)	C (20.5)	D (20.5)
11	Telegraph Ave/West Grand Ave	PM	C (20.0)	C (25.9)	D (36.2)	E (56.6)	E (76.2)
12	Telegraph Ave/Thomas L. Berkley Way (20th Street)	PM	B (10.4)	B (18.0)	C (21.7)	F (263.4)	F (252.0)
13	Telegraph Ave/William Street	PM	A (2.6)	A (6.1)	B (10.7)	E (77.6)	F (86.8)
14	Telegraph Ave/19th Street	PM	B (10.9)	D (40.5)	E (78.1)	D (40.5)	E (78.1)
15	Telegraph Ave/18th Street	PM	A (5.6)	A (7.5)	A (9.3)	A (7.8)	A (9.8)
16	Telegraph Ave/17th Street	PM	B (9.6)	B (10.3)	B (10.6)	B (12.4)	B (12.9)
17	Broadway/West Grand Ave	PM	D (38.4)	D (48.8)	D (54.0)	D (49.3)	E (64.5)
18	Broadway/Thomas L. Berkley Way (20th Street)	PM	B (12.4)	B (12.5)	B (13.0)	B (12.6)	B (13.1)
19	Broadway/19th Street	PM	B (13.6)	B (14.3)	B (14.5)	C (22.3)	C (26.6)
20	Broadway/17th Street	PM	B (12.9)	B (13.8)	B (14.0)	B (15.4)	B (15.9)
21	Broadway/15th Street	PM	A (8.5)	A (8.9)	A (8.8)	B (10.0)	A (10.0)
22	Broadway/14th Street	PM	B (13.5)	B (14.0)	B (14.3)	B (14.0)	B (14.3)
23	Frontage Road/West Grand Ave	PM	E (57.7)	F (101.7)	F (104.7)	F (212.3)	F (214.5)
24	Mandela Pkwy/West Grand Ave	PM	B (19.9)	C (24.0)	C (25.1)	E (67.1)	E (78.8)
25	Northgate Ave/West Grand Ave	PM	C (26.5)	D (43.1)	D (49.6)	E (69.7)	E (77.4)
26	Webster Street/Grand Avenue	PM	C (22.2)	C (23.8)	C (23.8)	C (25.0)	C (25.7)
27	Harrison Street/Grand Avenue	PM	C (27.9)	D (45.9)	D (49.7)	D (52.1)	E (56.6)
28	El Embarcadero/Grand Avenue	PM	C (25.2)	C (28.9)	C (30.9)	C (31.9)	C (34.0)
29	MacArthur Blvd/Grand Avenue	PM	C (27.9)	C (29.8)	C (34.1)	D (43.7)	D (52.1)
30	MacArthur Blvd/Lakeshore Ave	PM	C (23.7)	C (24.7)	C (26.7)	C (28.9)	C (30.3)
31	Lake Park Ave/Lakeshore Ave	PM	C (34.9)	D (36.6)	D (40.3)	D (41.0)	D (45.9)
32	Brush Street/18th Street	PM	A (9.4)	A (9.6)	B (10.7)	A (9.6)	B (10.6)
33	Castro Street/18th Street	PM	B (14.0)	C (34.5)	D (43.3)	D (44.8)	D (53.9)
34	Martin Luther King Jr. Way/18th St.	PM	B (11.9)	B (13.4)	B (13.7)	B (14.2)	B (14.5)
35	Brush Street/17th Street	PM	B (10.0)	B (10.6)	B (10.7)	B (11.6)	B (11.8)
36	Castro Street/17th Street	PM	C (28.1)	C (28.5)	C (29.9)	C (30.7)	C (32.8)
37	Martin Luther King Jr. Way/17th St.	PM	B (10.6)	B (10.9)	B (10.9)	B (11.1)	B (11.2)
38	Jefferson Street/17th Street	PM	B (10.3)	B (10.5)	B (10.5)	B (10.8)	B (10.7)
39	Franklin Street/17th Street	PM	B (12.5)	C (21.8)	C (26.4)	D (40.4)	D (48.9)
40	Webster Street/17th Street	PM	B (10.6)	B (11.6)	B (12.1)	B (12.6)	B (13.2)

Note: Intersections 7 and 9 (San Pablo Avenue/William Street and San Pablo Avenue/18th Street) are stop controlled and traffic signals exist at the remaining 38 study intersections.

Source: Korve Engineering, 2003.