

## 4.3 TRANSPORTATION AND TRAFFIC

Redevelopment, which includes the realignment and extension of Maritime Street, including the Loop Road, would provide benefits, including reducing hazards to bicyclists and pedestrians, providing 105 acres of ancillary maritime support to relieve nearby communities from truck traffic and parking, and reducing delays on Maritime Street south of 7<sup>th</sup> Street due to the removal of two railroad/highway grade crossings.

Redevelopment would also result in less than significant, potentially significant, and significant impacts to the transportation system. With the implementation of measures recommended in this section, most of the potentially significant and significant impacts would be mitigated to a level that is less than significant. No feasible mitigation measures have been identified that would reduce freeway impacts to a level that is less than significant.

### 4.3.1 Study Area

The redevelopment project area is located near the hub of the Bay Area freeway system, is well served by local roadways, and has access to public transit and rail service. The project area is located within an important recreation and commercial shipping area.

Figure 4.3-1 depicts the study area for the transportation analysis. This area was selected to encompass areas within the regional transportation network that could be potentially affected by traffic generated by redevelopment. The study area also includes local access routes expected to serve at least fifty peak hour trips generated by redevelopment during peak commute hours. The local study area includes freeways, major city arterial roads and local access routes within the cities of Oakland, Emeryville, Berkeley, and Alameda. The study area includes freeways in the East Bay from the Alameda/Contra Costa County line in the north to San Lorenzo and Castro Valley. Those freeways are I-880, I-80, I-580, I-980, I-238, and State Route (SR) 24.

### 4.3.2 Regulatory Setting

#### Federal

**The Federal Highway Administration.** The Federal Highway Administration (FHWA) is the agency of the U.S. Department of Transportation (DOT) responsible for the federally-funded roadway system, including the interstate highway network and portions of the primary state highway network. FHWA funding is provided through the Transportation Equity Act for the 21st Century (TEA-21 Public Law 105-178, as amended by Title IX of Public Law 105-206). This act can be used to fund local transportation improvement projects, such as projects to improve the efficiency of existing roadways, traffic signal coordination, bikeways, and transit system upgrades.

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Figure 4.3-1    Average Weekday Study Area Traffic

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1       **U.S. Coast Guard.** The Ports and Waterways Safety Act of 1972 (33 USC §§ 1221 *et seq.*)  
2       authorizes the U.S. Coast Guard (USCG) to establish, operate, and maintain vessel traffic  
3       services for ports, harbors, and other waters subject to congested vessel traffic. As a result, in  
4       1972 the Coast Guard established the Vessel Transportation Service (VTS) for San Francisco  
5       Bay and designated traffic lanes for inbound and outbound vessel traffic, specified separation  
6       zones between vessel traffic lanes, and set up rules to govern vessels entering and leaving  
7       ports. The VTS, which is located on Yerba Buena Island, controls marine traffic throughout the  
8       Bay Area. Although some small and private vessels are not required to coordinate their  
9       movements by contacting the VTS, the Coast Guard monitors all commercial, Navy, and private  
10      marine traffic within San Francisco Bay and local coastal waters.

### 11      **State/Regional**

12      **The California Department of Transportation.** Caltrans is responsible for planning, design,  
13      construction, and maintenance of all state highways. Caltrans jurisdictional interest extends to  
14      improvements to roadways at the interchange ramps serving area freeways. Any federally  
15      funded transportation improvements would be subject to review by Caltrans staff and the  
16      California Transportation Commission.

17      **The California Public Utilities Commission.** The California Public Utilities Commission (PUC)  
18      is responsible for regulating train operations, and has jurisdiction over operations at  
19      railroad/highway crossings.

20      **The Metropolitan Transportation Commission.** Metropolitan Transportation Commission  
21      (MTC) is the regional organization responsible for prioritizing transportation projects in a  
22      Regional Transportation Improvement Program (RTIP) for federal and state funding. The  
23      process is based on evaluating each project for need, feasibility, and adherence to TEA-21  
24      policies and the local Congestion Management Program (CMP). The CMP requires each  
25      jurisdiction to identify existing and future transportation facilities that would operate below an  
26      acceptable service level and provide mitigation where future growth would degrade that service  
27      level.

28      The Metropolitan Transportation System (MTS) is the focus of MTC's regional transportation  
29      planning, management and investment decisions. The MTS is the multi-modal transportation  
30      system of regional importance — those facilities that are crucial to the freight and passenger  
31      mobility needs of the nine county San Francisco Bay Area. The MTS was first defined in the  
32      1991 Regional Transportation Plan (RTP), and was updated in 1994, 1998, and 2001.

33      Definition of the MTS hinges on a functional rather than a purely geographic definition of  
34      regional significance. For the MTS, a facility is considered important if it improves access to  
35      activities crucial to mobility as well as the social or economic health of the Bay Area. Therefore,  
36      links that weave parts of the Bay Area together by crossing county or city lines are critical to the  
37      MTS concept. In addition, any link that accesses major Bay Area activity centers, regardless of  
38      the trip's length or origin, is also important to the region as a whole, and is included in the MTS.

**The Alameda County Congestion Management Agency.** The Alameda County Congestion Management Agency (CMA) is responsible for ensuring local government conformance with the CMP: a seven-year program aimed at reducing traffic congestion. The CMA has review responsibility for proposed development actions that require an EIR and are expected to generate 100 or more p.m. peak-hour trips. The CMA reviews the adequacy of certain California Environmental Quality Act (CEQA) transportation impact analyses and measures proposed to mitigate significant impacts that fall within the criteria of their Land Use Analysis Program. The CMA maintains a Countywide Transportation Model, and has approval authority for the use of any local or subarea transportation models.

#### **Local**

**The City of Oakland.** The City has designated certain streets near the Port as truck routes and container routes. Fully loaded containers on specialized chassis, with axle weights higher than typically allowed on other public streets, are allowed to operate with special permits along container routes. Container routes include certain harbor area and industrial area streets. The City of Oakland has also developed a plan for truck prohibitions in West Oakland, as depicted by Figure 4.3-2. Under a Memorandum of Understanding (MOU) between the City of Oakland and the Port of Oakland, executed July 1, 1993, the City is responsible for enforcement of traffic laws in the vicinity of the Port, including truck route compliance and parking restrictions (City of Oakland and Port of Oakland 1993). The Port funds two police officer positions to enforce these laws in the West Oakland neighborhood.

### **4.3.3 Regional Setting**

This section describes the regional transportation setting for ground transportation and vessel transportation.

#### **Ground Transportation**

**The Regional Highway System.** **I-880** is an eight-lane freeway that serves West Alameda County, the South Bay and southern peninsula, and San Jose. Access from the redevelopment project area to I-880 is provided from ramps at Oak, Broadway, and Jackson Streets. The portion of I-880 that formerly served the redevelopment project area collapsed during the 1989 Loma Prieta earthquake. A new six-lane I-880 connection from I-980 to I-80 was completed in 1998. I-880 connects to west I-80 at the Bay Bridge Toll Plaza. Interchange ramps connect I-880 to Maritime, 7<sup>th</sup>, Union, Adeline, and Market streets. A connection to I-80 east is provided at the north end of a frontage road that extends from 7<sup>th</sup> Street to West Grand Avenue.

**I-80** is an eight- to ten-lane freeway serving San Francisco and the West Bay as well as East Bay destinations in West Contra Costa County, Sacramento, and points north and east. I-80 is connected to the redevelopment project area by freeway ramps that terminate at the West Grand Avenue/I-880 Frontage Road intersection. I-80 east has recently been widened to

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Figure 4.3-2 Truck Routes and Prohibitions

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provide High Occupancy Vehicle (HOV) lanes and improved ramp connections to I-580 and the Bay Bridge. I-80, north of the OARB, carries approximately 260,000 vehicles daily to San Francisco.

**I-580** is an eight-lane freeway serving Northern Alameda County, Livermore, Stockton, Marin County north and I-5 south. Access to the redevelopment project area is provided via the West Grand Avenue/I-80 ramps. The City of Oakland has placed a heavy truck (over 4.5 tons) restriction on I-580 between Grand and 106<sup>th</sup> avenues. Truck traffic to and from the redevelopment project area must use alternative roadways. I-580 carries approximately 194,000 vehicles daily east of I-980. East of I-238, I-580 carries approximately 158,000 vehicles daily.

**I-980** provides access to the Oakland downtown area. I-980 has six to eight lanes and an average daily traffic volume of 191,000 vehicles. I-980 becomes State Route 24 (SR-24) at the northern end, providing access to Contra Costa County via the Caldecott Tunnel, and provides a direct connection between I-580 and I-880.

**I-238** is a four-lane freeway that connects I-580 to I-880 through unincorporated San Lorenzo. I-238 provides the primary truck link between the redevelopment project area and I-580 east to the Tri-Valley and Central Valley and carries approximately 118,000 vehicles daily. I-238 is planned to be widened to eight lanes.

**SR-24** is an eight-lane freeway that connects the East Bay area with central and east Contra Costa County. SR-24 extends from I-980 to I-680 through the Caldecott tunnel and carries approximately 150,000 vehicles daily just west of the Caldecott Tunnel.

The following discussion of regional freeway conditions was taken from the 2000 Level of Service Monitoring Report prepared by the CMA (2000). The CMA monitors congestion on freeways in the region by measuring the average travel speed during the p.m. peak period (4:00 to 6:00 p.m.). Freeway traffic conditions are then described in terms of level of service (LOS), a standard measure for traffic operations defined by the average number of seconds of delay per vehicle, with LOS A representing free-flow conditions and LOS F representing gridlocked conditions.<sup>1</sup>

According to the CMA, traffic speeds of 49 miles per hour (mph) or higher on the freeway indicate LOS A through C. At LOS D, traffic operating conditions become unstable and speeds can drop as low as 41 mph. At LOS E, there are virtually no usable gaps in the traffic stream and speeds can drop as low as 30 mph. Below 30 mph, at LOS F, stop-and-go traffic operations often occur.

As shown on Table 4.3-1, in 2000 during the p.m. peak, traffic congestion occurs on most routes leading away from major employment centers in the study area. I-80 operates at LOS F eastbound from the Bay Bridge to the I-80/I-580 split, and is congested westbound approaching

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<sup>1</sup> Appendix 4.3 includes definitions of LOS.

the I-80/I-580 split. I-880 northbound is congested south of I-238, and I-238 is congested in the westbound direction from I-580 to I-880. I-580 eastbound is congested east of I-238, but operates well between I-80 and I-238. I-980 operates at LOS D or better. Eastbound SR-24 operates at LOS E from I-580 to the Caldecott Tunnel.

**Table 4.3-1**  
**Freeway Operations In 2000**

Freeway Segment	A.M. Peak Hour <sup>a</sup>		P.M. Peak Hour	
	LOS	Speed (mph)	LOS	Speed (mph)
I-80 at the Bay Bridge				
Eastbound	-	-	F	22.1
Westbound	F	4.7	F	26.3
I-80 between I-880 and I-580				
Eastbound	-	-	F	23.0
Westbound	F	16.1	F	9.9
I-80 East of I-80/I-580 Split				
Eastbound	-	-	E	37.0
Westbound	F	24	D	43.4
I-880 South of I-980				
Northbound	-	-	C	49.3
Southbound	-	-	E	40.3
I-880 North of I-238				
Northbound	-	-	B	55.6
Southbound	-	-	D	44.0
I-880 South of I-238				
Northbound	-	-	B	56.5
Southbound	F	15.9	F	24.0
I-238				
Eastbound	-	-	C	48.9
Westbound	F	18.0	F	24.4
I-580 East of I-238				
Eastbound	-	-	D	47.4
Westbound	-	-	F	24.0
I-580 West of I-238				
Eastbound	-	-	A	64.1
Westbound	-	-	A	69.3
I-580 East of I-980/SR-24				
Eastbound	-	-	C	54.5
Westbound	-	-	C	53.9
I-580 West of I-980/SR-24				
Eastbound	-	-	A	64.0
Westbound	-	-	B	58.7
I-980				
Northbound	-	-	C	52.1
Southbound	-	-	D	47.7
SR-24 East of I-580				
Eastbound	-	-	E	33.4
Westbound	-	-	B	57.2

**Source:** ACCMA 2000 LOS Monitoring Report.

**Note:** <sup>a</sup>Missing values (designated with a dash "-") were not reported in the reference document.

During the a.m. peak period (7:00 to 9:00 a.m.), bottlenecks occur on many of the freeways leading to the major employment centers in and near the transportation study area. SR-24 is

1 congested at its southbound connection to I-580. Congestion regularly occurs on westbound I-  
2 80 at the I-580 split and on the approach to the Bay Bridge toll plaza. I-238 is congested  
3 westbound from I-580 to I-880. On I-580, slowing occurs regularly in both directions between I-  
4 80 and I-980. I-980 is congested southbound from the 12<sup>th</sup> Street off-ramps to I-880 (Caltrans  
5 1993).

## 6 **Vessel Transportation**

7 The vessel transportation analysis focuses on commercial vessels.

8 West of the Golden Gate Bridge in the Gulf of the Farallones, vessel approach lanes to the  
9 entrance of San Francisco Bay have been established from the north, west, and south. Each  
10 approach lane is composed of a one-mile-wide inbound traffic lane and a one-mile-wide  
11 outbound traffic lane with a one-mile-wide separation between the traffic lanes. Outside these  
12 lanes, the U.S. Navy designated areas for submarine operations within which barge operations  
13 are precluded. The approach lanes lead to an offshore light station with a rotating beacon that  
14 marks the beginning of the main channel to the Golden Gate Bridge. The beacon, which is  
15 located 10 miles west of Point Bonita, is in the center of a precautionary area where all ships  
16 leaving and entering the port converge. This is the area where many ships take on or discharge  
17 San Francisco Bar Pilots.

18 Piloting in and out of the Bay and adjacent waterways is compulsory for all vessels of foreign  
19 registry and U.S. vessels under enrollment not having a federally licensed pilot on board. San  
20 Francisco Bar Pilots provide these services for vessel movements to and from all terminals in  
21 the Bay and tributaries to the Bay, including the Carquinez Strait.

22 Within San Francisco Bay, the USCG has established Regulated Navigation Areas (RNAs),  
23 which increase navigational safety by organizing traffic flow patterns; reducing meeting,  
24 crossing, and overtaking situations between large vessels in constricted channels; and limiting  
25 vessel speed. The RNAs, which were established in 1993 with input from the Harbor Safety  
26 Committee, modified the previous voluntary traffic routing measures to better conform to  
27 International Maritime Organization (IMO) traffic routing standards. The 1993 modifications  
28 added a Golden Gate precautionary area, a deep water traffic lane separation zone north of  
29 Harding Rock, and an expanded Central Bay precautionary area. It also eliminated the former  
30 traffic lanes in the North Ship Channel and the San Pablo Strait.

31 RNAs apply to "large vessels" (defined as power-driven vessels of 1,600 or more gross tons, or  
32 tugs with a tow of 1,600 or more gross tons). When navigating within the RNAs, large vessels  
33 follow specific guidelines. They must have their engines ready for immediate maneuver, must  
34 operate their engines in a control mode and on fuel that allows for an immediate response to  
35 any engine order, and must not exceed a speed of 15 knots through the water.



1 According to records of the Marine Exchange, (ME), approximately 1,810 vessels called at Port  
2 of Oakland facilities in 2000 to 2001. Of these, approximately 1,735 were container vessels, and  
3 the remainder bulk and auto carriers, or unclassified vessels (Marine Exchange 2001).

#### 4 **4.3.4 Local Setting**

5 This section describes the local transportation setting for ground transportation and vessel  
6 transportation.

#### 7 **Ground Transportation**

8 **The Local Roadway System.** Local vehicular access to the project area is provided by West  
9 Grand Avenue, Maritime Street, Middle Harbor Road, and 7<sup>th</sup> Street, and Wood Street, as  
10 depicted in Figure 4.3-3. West Grand Avenue is a six-lane arterial with a raised center median  
11 and numerous signalized intersections from Mandela Parkway in West Oakland to the Oakland  
12 north-central business district. West Grand Avenue has recently been re-connected to the  
13 Cypress Freeway system at Maritime Street and at a new elevated intersection with the Cypress  
14 Freeway frontage road. Access to I-80 west and I-580 east is provided at the Maritime Street  
15 intersection and access to I-80 east and I-580 west is provided at the frontage road.

16 **Maritime Street** is a four-lane arterial with a center two-way left-turn lane. It is heavily used by  
17 trucks and other traffic accessing the OARB, the Port's Outer Harbor terminal, and the Union  
18 Pacific (UP) railyard. It is a primary access route to the Port of Oakland. On its north end  
19 Maritime Street is connected to the Cypress Freeway system at its intersection with West Grand  
20 Avenue, where freeway ramps provide access to I-80 west and I-580 east. On its south end, the  
21 rail tracks leading to the Joint Intermodal Terminal (JIT) cross Maritime Street just south of 7<sup>th</sup>  
22 Street and just north of Middle Harbor Road. This portion of Maritime Street is subject to train  
23 blockages when trains enter or exit the JIT.

24 **Middle Harbor Road**, an extension of Adeline Street, is a four-lane arterial with a center two-  
25 way left-turn lane. At its eastern end, a bridge structure, known as the Adeline Street Overpass,  
26 carries the roadway across the UP railroad tracks. From Adeline Street to Maritime Street,  
27 Middle Harbor Road is a dedicated City street. From Maritime Street to 7<sup>th</sup> Street, Middle Harbor  
28 Road passes between Berths 55-59 and the JIT, and provides an alternate route around the  
29 segment of Maritime Street that is subject to train blockages. Middle Harbor Road is heavily  
30 used by trucks and other traffic accessing the Port of Oakland. It provides the primary access to  
31 I-880 and I-980 from the Port.

32 **7<sup>th</sup> Street** is a public four-lane arterial that provides access to the Matson and Trapac marine  
33 terminals, Port View Park, and the new MHSP. 7<sup>th</sup> Street also serves local and cross-town traffic  
34 for West Oakland between Middle Harbor Road and I-980/I-880. 7<sup>th</sup> Street passes beneath I-880  
35 and then parallels the UP railroad tracks. Freeway ramps connect 7<sup>th</sup> Street to I-880 south. A  
36 frontage road connects 7<sup>th</sup> Street to points north.

**Wood Street** is a two lane residential street at the eastern border of the redevelopment project area. Wood Street provides a connection from 7<sup>th</sup> Street to the 16<sup>th</sup>/Wood sub-district through a residential area of West Oakland. Through truck traffic is prohibited on the southern portion of Wood Street, and speed bumps have been installed to control speeds. North of the 16<sup>th</sup>/Wood sub-district, Wood Street passes under the elevated portion of West Grand Avenue.

**Level of Service (LOS) Analysis.** The efficiency of traffic operations at study area intersections was evaluated for existing and baseline conditions. Forty-five intersections, identified as having the greatest potential for redevelopment traffic impacts, were selected for study (Figure 4.3-3). LOS at study area intersections was analyzed for the a.m. and p.m. peak hours, using methodologies described in the Highway Capacity Manual (Transportation Research Board 1998).<sup>2</sup> The LOS for signalized and unsignalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, and lost travel time.

Delay is a complex measure and is dependent upon a number of variables, including the number of vehicles in the traffic stream. For signalized intersections, delay is also dependent on the quality of signal progression, the signal cycle length, and the “green” ratio for each approach or lane group. For intersections with one or two stop signs, delay is dependent on the number of gaps available in the uncontrolled traffic stream.

All the intersections, except two are controlled by traffic signals. The 3<sup>rd</sup>/Adeline Street intersection has a traffic signal that displays flashing red signal indications in all directions. This intersection functions as an all-way stop controlled intersection. The 3<sup>rd</sup>/Market Street intersection is controlled by stop signs facing Market Street traffic.

Existing a.m. and p.m. peak-hour traffic turning movement counts were collected at almost all of the study intersections within the last three years (the a.m. peak hour turning movement count at the Constitution Way/Atlantic Avenue intersection was counted in 1998). Turning movement data in the study area were collected from the Fall of 2000 through Spring of 2001.

**Traffic Conditions, Setting.** The existing levels of service at local study area intersections were determined for the a.m. and p.m. peak hours and are provided in Table 4.3-2. Detailed LOS calculation worksheets are available on file with the City of Oakland. All intersections operate at or better than the City of Oakland’s LOS standard (LOS D outside of downtown and LOS E within downtown).<sup>3</sup>

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<sup>2</sup> This version of the Highway Capacity Manual was prepared in 1997 and is commonly referred to as the 1997 Highway Capacity Manual.

<sup>3</sup> Worksheets are available for review at 250 Frank Ogawa Plaza, Suite 3330, during normal business hours.

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Figure 4.3-3    Traffic Study Intersections

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**Traffic Conditions, Alternative Baseline.** A traffic operations analysis was performed to establish a baseline for the analysis of transportation impacts. Baseline conditions were developed to assess the level of service at study area intersections if OARB were still functioning at its 1995 level of operations, before the Base was slated for closure.

**Table 4.3-2  
Existing Intersection Operations, 2001**

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay <sup>a</sup>	LOS	Delay <sup>a</sup>
West Grand Avenue/Maritime Street	C	34.0	C	29.6
West Grand Avenue/I-880 Frontage Road	C	30.3	D	35.4
West Grand Avenue/Mandela Parkway	A	9.6	B	10.7
West Grand Avenue/Adeline Street	B	11.1	B	10.3
West Grand Avenue/Market Street	A	10.0	B	10.6
West Grand Avenue/San Pablo Avenue	B	11.4	B	11.6
West Grand Avenue/MLK Jr. Way <sup>b</sup>	B	13.7	B	17.0
West Grand Avenue/Northgate Avenue <sup>b</sup>	C	23.8	C	21.8
West Grand Avenue/Harrison Street <sup>b</sup>	C	24.2	C	23.2
7 <sup>th</sup> Street/Maritime Street	C	29.7	C	33.3
7 <sup>th</sup> Street/I-880 Southbound Ramp	A	5.2	A	7.8
7 <sup>th</sup> Street/I-880 Northbound Ramp	C	29.2	C	30.5
7 <sup>th</sup> Street/Peralta Street	A	8.6	A	8.7
7 <sup>th</sup> Street/Mandela Parkway	B	14.8	B	16.7
7 <sup>th</sup> Street/Union Street	A	9.0	B	11.9
7 <sup>th</sup> Street/Adeline Street	B	10.7	A	9.5
7 <sup>th</sup> Street/Market Street	B	15.0	C	20.8
7 <sup>th</sup> Street/Harrison Street <sup>b</sup>	B	10.5	B	10.8
7 <sup>th</sup> Street/Jackson Street <sup>b</sup>	C	32.6	C	21.1
6 <sup>th</sup> Street/Jackson Street <sup>b</sup>	B	10.4	B	11.7
5 <sup>th</sup> Street/Union Street/I-880 Ramps	C	31.5	C	27.1
5 <sup>th</sup> Street/Adeline Street	C	30.4	C	29.1
I-880 Off Ramp/Market Street	B	19.5	C	22.8
5 <sup>th</sup> Street/Broadway <sup>b</sup>	C	20.9	C	29.3
3 <sup>rd</sup> Street/Adeline Street	B	11.3	B	11.8
3 <sup>rd</sup> Street/Market Street	B	13.9	B	13.3
14 <sup>th</sup> Street/Mandela Parkway	A	8.5	A	8.4
12 <sup>th</sup> Street/Brush Street <sup>b</sup>	C	30.4	C	22.4
12 <sup>th</sup> Street/Castro Street <sup>b</sup>	B	15.5	B	19.1
27 <sup>th</sup> Street/SR 24-580 SB Off-Ramp	B	11.8	B	15.9
27 <sup>th</sup> Street/SR 24-580 NB On-Ramp	A	9.5	C	20.4
West MacArthur Blvd/Adeline Street	B	18.3	B	19.8
West MacArthur Blvd/Market Street	B	15.8	B	17.3
Powell Street/I-80 Frontage Road	C	21.3	C	22.4
Powell Street/I-80 NB Ramps	C	25.2	D	43.9
Powell Street/Christie Street	C	29.9	C	30.5

**Table 4.3-2**  
**Existing Intersection Operations, 2001**

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay <sup>a</sup>	LOS	Delay <sup>a</sup>
Powell Street/Hollis Street	C	22.7	C	31.1
Powell Street/San Pablo Avenue	C	31.8	C	34.3
Stanford Avenue/Market Street	C	28.6	C	31.6
Stanford Avenue/MLK Jr. Way	B	12.5	D	46.4
Ashby Avenue/7 <sup>th</sup> Street	C	33.7	D	48.6
Ashby Avenue/San Pablo Avenue	C	29.8	C	32.2
Marina Village/Constitution Way	C	20.6	C	22.0
Atlantic Avenue/Webster Street	C	31.5	C	28.6
Atlantic Avenue/Constitution Way	C	22.3	C	20.7

**Source:** Dowling Associates 2002.

**Notes:** <sup>a</sup> Delay in seconds per vehicle.

<sup>b</sup> Defined as a downtown intersection.

In 1995, there were 2,044 employees at the OARB (U.S. Army Corps of Engineers [Corps] 2001), 714 more than the 1,330 employees at the end of 2000 (OBRA 2001). The traffic generated by these 714 additional employees were added to existing traffic volumes to develop the alternative baseline for the transportation impact analysis. Additional trips generated by OARB employees in 1995 are shown in Table 4.3-3.

**Table 4.3-3**  
**OARB Trip Generation, 1995 and 2001**

Year	Land Use Category	Employees	Daily	Trips Generated					
				AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
1995	Warehousing	2,044	5,378	590	229	819	334	620	954
2001	Warehousing	1,330	3,896	397	155	552	224	417	641
Difference between 1995 and 2001		714	1,482	192	75	267	109	203	313

**Source:** Institute of Transportation Engineers 1997.

The additional trips generated by employees that were on the base in 1995 were added to existing traffic volumes based on the distribution of traffic derived from the Alameda County Congestion Management Agency Countywide Transportation Model. The Countywide Model incorporates a representation of land use and demographic characteristics of the nine-county Bay Area, which allows it to produce travel demand forecasts that incorporate influences of regional travel demand on the transportation network in Alameda County. The distribution of OARB trips is shown in Table 4.3-4. The analysis showed that about half of the trips attributed to the OARB alternative baseline would be to or from the area outside the local study area and half would be within the local study area.

The additional trips generated by OARB employees in 1995 were added to existing traffic volumes using the TRAFFIX impact analysis software package. Levels of service for study area intersections for baseline conditions were determined for the a.m. and p.m. peak hours, and are provided in Table 4.3-5. For baseline conditions, all intersections operate at or above the LOS D standard as do the intersections for existing conditions.

**Table 4.3-4**  
**OARB Trip Distribution, 2001**

Route	Trip Distribution
Outside Local Study Area	
I-80 West	10%
I-80 East	14%
SR 24	9%
I-580 East	7%
I-880 South	11%
Within Local Study Area	
Oakland/San Leandro	
SR 24	3%
I-580 East	13%
I-880 South	4%
Grand E. of I-80	17%
7th Street	1%
MacArthur Blvd	3%
Emeryville/Berkeley	
I-80 Frontage Road	1%
San Pablo Avenue	1%
Ashby Avenue	1%
Powell Street	1%
Alameda	
Constitution Way	2%
Webster Street	2%
Total	100.0%
<b>Source:</b> Alameda Countywide Model 2002.	

**Table 4.3-5**  
**Intersection Operations for Baseline Conditions<sup>a</sup>, 1995**

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay <sup>b</sup>	LOS	Delay <sup>b</sup>
West Grand Avenue/Maritime Street	D	37.1	C	32.6
West Grand Avenue/I-880 Frontage Road	C	30.7	D	37.3
West Grand Avenue/Mandela Parkway	A	9.6	B	10.6
West Grand Avenue/Adeline Street	B	11.5	B	10.6
West Grand Avenue/Market Street	A	9.9	B	10.6
West Grand Avenue/San Pablo Avenue	B	11.5	B	11.6

**Table 4.3-5**  
**Intersection Operations for Baseline Conditions<sup>a</sup>, 1995**

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay <sup>b</sup>	LOS	Delay <sup>b</sup>
West Grand Avenue/MLK Jr. Way <sup>c</sup>	B	13.7	B	16.9
West Grand Avenue/Northgate Avenue <sup>c</sup>	C	23.9	C	21.8
West Grand Avenue/Harrison Street <sup>c</sup>	C	24.2	C	23.3
7 <sup>th</sup> Street/Maritime Street	C	30.4	C	33.6
7 <sup>th</sup> Street/I-880 Southbound Ramp	A	5.2	A	7.5
7 <sup>th</sup> Street/I-880 Northbound Ramp	C	29.3	C	30.6
7 <sup>th</sup> Street/Peralta Street	A	8.5	A	8.7
7 <sup>th</sup> Street/Mandela Parkway	B	14.8	B	16.7
7 <sup>th</sup> Street/Union Street	A	9.0	B	11.9
7 <sup>th</sup> Street/Adeline Street	B	10.7	A	9.5
7 <sup>th</sup> Street/Market Street	B	15.0	C	20.8
7 <sup>th</sup> Street/Harrison Street <sup>c</sup>	B	10.5	B	10.8
7 <sup>th</sup> Street/Jackson Street <sup>c</sup>	C	33.6	C	21.3
6 <sup>th</sup> Street/Jackson Street <sup>c</sup>	B	10.4	B	11.7
5 <sup>th</sup> Street/Union Street/I-880 Ramps	C	31.5	C	27.2
5 <sup>th</sup> Street/Adeline Street	C	30.4	C	29.1
I-880 Off Ramp/Market Street	B	19.5	C	22.8
5 <sup>th</sup> Street/Broadway <sup>c</sup>	C	20.9	C	29.4
3 <sup>rd</sup> Street/Adeline Street	B	11.3	B	11.8
3 <sup>rd</sup> Street/Market Street	B	13.9	B	13.3
14 <sup>th</sup> Street/Mandela Parkway	A	8.5	A	8.4
12 <sup>th</sup> Street/Crush Street <sup>c</sup>	C	30.4	C	22.4
12 <sup>th</sup> Street/Castro Street <sup>c</sup>	B	15.5	B	19.1
27 <sup>th</sup> Street/SR 24-580 SB Off-Ramp	B	11.8	B	15.9
27 <sup>th</sup> Street/SR 24-580 NB On-Ramp	A	9.5	C	20.5
West MacArthur Blvd/Adeline Street	B	18.4	B	19.9
West MacArthur Blvd/Market Street	B	15.8	B	17.3
Powell Street/I-80 Frontage Road	C	21.3	C	22.4
Powell Street/I-80 NB Ramps	C	25.2	D	44.1
Powell Street/Christie Street	C	29.9	C	30.5
Powell Street/Hollis Street	C	22.7	C	31.1
Powell Street/San Pablo Avenue	C	31.8	C	34.4
Stanford Avenue/Market St	C	28.6	C	31.6
Stanford Avenue/MLK Jr. Way	B	12.5	D	46.4
Ashby Avenue/7 <sup>th</sup> Street	C	33.7	D	48.6
Ashby Avenue/San Pablo Avenue	C	29.8	C	32.3
Marina Village/Constitution Way	C	20.6	C	21.9
Atlantic Avenue/Webster Street	C	31.5	C	28.6
Atlantic Avenue/Constitution Way	C	22.3	C	20.7

**Source:** Dowling Associates 2002.

**Notes:** <sup>a</sup> Baseline conditions reflect 2001 traffic levels, adjusted to account for 1995 Traffic Generation at the OARB.

<sup>b</sup> Delay in seconds per vehicle

<sup>c</sup> Defined as a downtown intersection.

**Vehicle Types.** Traffic in and near the project area consists of two primary components: passenger car traffic generated by commuters and local residents, and heavy trucks. Heavy trucks have a substantially greater proportional influence on traffic operations than passenger cars. To determine the relative number of passenger cars and trucks in the redevelopment project area, vehicle classification counts were conducted at three locations:

- Maritime Street south of West Grand Avenue;
- 7<sup>th</sup> Street west of I-880; and
- Middle Harbor Road south of 3<sup>rd</sup> Street.

These locations show traffic conditions, respectively, at the northern, central, and southern areas of the Port. Variations in auto, truck, and total traffic volumes throughout the weekday for the three locations listed above are shown in Figure 4.3-4. The figure shows that automobile traffic in the redevelopment project area peaks between 7:00 and 8:00 a.m., at the noon hour, and between 3:00 and 4:00 p.m. Truck traffic peaks between 11:00 a.m. and 12:00 noon.

**Railroads.** Burlington Northern Santa Fe (BNSF) has its major Northern California railyard in Richmond but also has rail access to the Oakland Outer Harbor area. BNSF has an agreement to use the UP rail line between Richmond and Oakland, where BNSF maintains a small yard facility near 34<sup>th</sup> and Wood streets. Oversize and heavy loads (like earthmoving equipment on railroad flatcars) can be routed from Richmond to the Wood Street Yard via the UP mainline and then interchanged with the Oakland Terminal Railroad (OTR) for the final movement to marine terminals in the Port. The JIT was recently constructed by the Port in the area bounded by 7<sup>th</sup> Street, Maritime Street, and Middle Harbor Road in order to expand the existing intermodal cargo handling capabilities at the Port and to allow the BNSF to operate effectively at the Port. From the Bay Area, most of BNSF's priority freight is shipped east to other points in the United States via Stockton, California, and Flagstaff, Arizona.

UP serves the Bay Area on trackage to the east via Stockton and the Sierra Nevada to Salt Lake City, Utah, and points east. UP currently operates an intermodal terminal along Inner Harbor, providing a direct transfer point for containers moving between ships and trains. Currently, most of the Oakland-related UP train traffic travels via Salt Lake City, where UP's primary lines to Southern California, the Pacific Northwest, and the Midwest converge. In 1996, UP purchased SP. In this acquisition, UP acquired three routes for moving freight to and from the Bay Area and the former SP West Oakland Intermodal Railyard on the northeastern side of the Port. The northern route has two tracks and crosses the Carquinez Strait at Benicia en route to the Sacramento area for connections to the Pacific Northwest, Midwest, and Gulf of Mexico.

OTR is an offshoot of the East Bay's former interurban Key Line Transit system that is jointly owned by UP and BNSF. OTR is a local switching railroad that shuttles rail cars between the UP, BNSF, and the Port of Oakland marine terminals. In addition to these interchange



1        insert

Figure 4.3-4    Traffic Volumes at Harbor Area Access Points

2

movements, OTR also serves a few industries located along its street trackage through West Oakland. OTR operates on segments of tracks that pass through the OARB. OTR typically operates in the evening, but crews and trains can operate at any time, depending on demand.

**Bicycle and Pedestrian Facilities.** Bicycle and pedestrian access through the redevelopment project area, particularly to the waterfront, has recently been improved. The Bay Trail has been extended to the east as part of the Port's Vision 2000 Maritime Development Program. Caltrans is required to construct a portion of the Bay Trail between Shellmound Street in Emeryville and the Bay Bridge as mitigation for its I880 relocation project. The remainder of the Bay Trail through the redevelopment project area will be constructed as part of redevelopment. Sidewalks and pedestrian signals have been installed and provide adequate pedestrian access through most of the redevelopment area that is open to the public. The public access facilities in the redevelopment project area are discussed in detail in Section 4.10, Recreation and Public Access.

**Public Transit.** Transit service in the study area is provided primarily by the Alameda-Contra Costa Transit District (AC Transit), Bay Area Rapid Transit (BART), the Oakland-Alameda Ferry, and Amtrak.

**AC Transit** provides bus service to residents and visitors along the east shore of the San Francisco Bay Area with an extensive network of local transit lines (Dowling Associates and GBA 1998). AC Transit Route 13 provides local service between the Oakland-Piedmont City Limits, Lake Merritt and OARB through downtown Oakland. The route generally follows Lakeshore, 14<sup>th</sup>, Mandela, 7<sup>th</sup>, and Maritime Streets. Weekday service is provided about every 15 minutes during peak periods and 30 minutes other times from 5:30 a.m. to 7:00 p.m. There is no weekend service.

Route 62 connects West Oakland with Fruitvale BART via downtown Oakland. The route alignment generally follows Wood, Peralta, 7<sup>th</sup>, 12<sup>th</sup>, 8<sup>th</sup>, 31<sup>st</sup>, 23<sup>rd</sup>, and East 14<sup>th</sup> streets. Weekday service is provided about every 15 minutes during peak and midday periods, and every 30 minutes after 7:00 p.m. On weekends, buses operate every 20 to 30 minutes between 5:30 a.m. and midnight.

Route B provides Transbay service for the redevelopment project area with a bus stop on West Grand Avenue at Mandela Parkway. Westbound service is provided in the morning and eastbound service is provided during the evening peak commute period. No service is provided in the off-peak direction.

**The BART system** provides the West Oakland area with direct links to San Francisco and the metropolitan areas of Contra Costa and Alameda counties. BART operates between 4:00 a.m. and 1:30 a.m. Monday through Friday; 6:00 a.m. to 1:30 a.m. on Saturdays; and 8:00 a.m. to 1:30 a.m. on Sundays and major holidays. The West Oakland and 12<sup>th</sup> Street BART stations are the two BART stations closest to the project area. The West Oakland BART station is located

approximately 2 miles east of the Port's maritime area at the intersection of Mandela Parkway and 7<sup>th</sup> Street (Dowling Associates and GBA 1998).

**The Oakland-Alameda Ferry** provides ferry service between Oakland and San Francisco. This service was initiated in October of 1989 after the Loma Prieta earthquake damaged the Bay Bridge. During the 1997 BART strike, the ferry served as a reliever for displaced transit riders. The MTC, the City of Alameda, and the Port of Oakland continue to plan routes for and fund the ferry service. Three of the five ferry boats in service are 28 knot, high speed catamarans. The other two are 693-passenger boats that travel at roughly 16 knots.

Ferry terminals are located along the Inner Harbor. On weekdays, the four ferries currently make 15 trips between Oakland, Alameda, and San Francisco. Westbound, the ferries operate between 6:00 a.m. and 8:55 p.m. Eastbound, the service runs between 6:30 a.m. and 8:55 p.m. Additional service from Oakland and Alameda is provided for Giants games during the baseball season. For weekday night and weekend games, these ferries go directly to PacBell Park. For weekday games, the ferries go to the Ferry Building on the San Francisco side, and passengers transfer to the streetcar for access to the park.

**Amtrak** uses UP's northern route through the project area to operate three daily round-trip "Capitol" and four daily "San Joaquin" passenger trains between the Bay Area and Sacramento and the Central Valley. An Amtrak maintenance facility is located in the study area near the 7<sup>th</sup> Street/Maritime Street intersection.

**Parking.** The Port provides subsidized parking to independent truck owner/operators within the Port area at the former UP roundhouse site. The purpose of this parking area is to reduce tractor and trailer parking in West Oakland. Truck parking space is leased at a cost of \$50 per chassis and \$75 per truck-trailer combination per month.

#### **4.3.5 Impact Analysis Methodology**

For the analysis of transportation impacts, the following sub-areas of the redevelopment project area were considered:

- The Gateway development area — the City of Oakland's northern portion of the OARB sub-district;
- The Port area — the Port of Oakland's southern portion of the OARB sub-district plus the Maritime sub-district; and
- The 16<sup>th</sup>/Wood area — the 16<sup>th</sup>/Wood sub-district.

The methodology for determining the impacts of redevelopment was based on the analytical procedures described in the previous section. The analysis of traffic operations at intersections was performed using the 1997 Highway Capacity Manual methodologies. For freeways, the

analysis was performed using the methodologies described in the 1984 Highway Capacity Manual, as required by the Alameda County CMA.

The traffic impacts of redevelopment were determined by comparing existing plus redevelopment traffic conditions against alternative baseline traffic conditions for the OARB only. Existing plus redevelopment traffic conditions were established by adding redevelopment traffic volumes to existing traffic volumes. Alternative baseline traffic conditions were established by adding traffic generated by the difference between the number of employees on the OARB in 1995 and the number of employees currently on the base, as previously described.

### Trip Generation

Trip generation for redevelopment is based upon information in Trip Generation, Sixth Edition (Institute of Transportation Engineers 1997). The trip generation for redevelopment is shown in Table 4.3-6. Redevelopment would generate approximately 45,600 daily automobile trips.<sup>4</sup> The Gateway development area would generate 45 percent, the Port development area would generate 23 percent, and the 16<sup>th</sup>/Wood area would generate 32 percent of the total daily redevelopment project area trips.

**Table 4.3-6  
Redevelopment Project Area Trip Generation When Completed**

Land Use	Amount <sup>a</sup>		Daily	Trips Generated						
				AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
Gateway Development Area										
Office, R&D <sup>b</sup>	376	KSF	3,670	472	64	536	85	416	501	
Office, R&D <sup>c</sup>	577	KSF	5,099	663	90	754	123	603	726	
Light Industrial	444	KSF	3,214	384	52	436	57	416	473	
Community/Civic (JATC) <sup>d</sup>	50	KSF	349	40	6	46	6	43	49	
Office	600	KSF	5,255	684	93	778	128	624	752	
Park	29	Acres	232	7	2	9	8	11	19	
Maritime Support (with trucks)	15	Acres	561	21	31	52	21	23	44	
Warehouse and Distribution	300	KSF	1,453	146	32	178	40	128	168	
Subtotal Gateway Development Area			19,832 <sup>e</sup>	2,417	371	2,789	468	2,264	2,732	
Port Area										
Marine Terminals										
Proposed Employment	2,599	Emp.	10,630	894	146	1,040	192	769	962	
Approved Employment	<u>2,047</u>	Emp.	<u>8,372</u>	<u>704</u>	<u>115</u>	<u>819</u>	<u>151</u>	<u>606</u>	<u>757</u>	
New Employment	552	Emp.	2,258	190	31	221	41	163	204	
New Intermodal Trucks <sup>f</sup>	202	Acres	3,182	153	163	316	34	79	113	
New Off-site Trucks <sup>f</sup>	202	Acres	2,876	138	147	285	31	71	102	
Rail Terminal <sup>g</sup>										
Proposed New Intermodal Facility	188	Emp.	867	70	11	81	14	54	68	

<sup>4</sup> All trips discussed in this document are reported as the equivalent number of passenger car trips. Each truck trip generated by redevelopment is considered as the equivalent of two passenger car trips. The total number of daily truck trips generated by redevelopment would be 3,029 – the equivalent of 6,058 automobile trips.

**Table 4.3-6**  
**Redevelopment Project Area Trip Generation When Completed**

Land Use	Amount <sup>a</sup>		Daily	Trips Generated					
				AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Approved JIT	208	Emp.	959	77	13	89	15	60	75
Change in Employment	-20	Emp.	-92	-7	-1	-9	-1	-6	-7
Maritime Support									
Maritime Support Center	75	Acres	1,383	52	77	129	51	57	108
North of West Grand (with trucks) <sup>f</sup>	15	Acres	561	21	31	52	21	23	44
Subtotal Port Area			10,168	546	449	995	176	388	564
<b>16<sup>th</sup>/Wood Area</b>									
North Subarea <sup>h</sup>									
Office <sup>c</sup>	1,426	KSF	10,216	1,364	186	1,550	285	1,393	1,678
Live Work	252	Units	1,428	18	88	106	88	44	132
Light Industrial	120	KSF	836	97	13	110	14	103	118
Park	1	Acre	8	0	0	0	0	1	1
South Subarea									
Live/Work	123	Units	776	10	50	60	49	24	73
Light Industrial	185	KSF	1,289	150	20	170	22	160	181
Subtotal 16 <sup>th</sup> /Wood Area			14,554	1,640	358	1,998	459	1,724	2,182
<b>Total</b>			44,554	4,603	1,178	5,781	1,102	4,376	5,478

**Sources:** Institute of Transportation Engineers 1997 and Port of Oakland 1998

**Notes:**

<sup>a</sup> KSF = thousand square feet; Emp. = employees

<sup>b</sup> Office, R&D was treated as general office for the purpose of trip generation.

<sup>c</sup> Office supporting ancillary retail space was included as office space.

<sup>d</sup> JATC was treated as light industrial space for the purpose of trip generation.

<sup>e</sup> In addition to the trucks associated with Maritime Support, the trip generation rates for Gateway development area and 16<sup>th</sup>/Wood area include an approximately 1% and 0.6% component of heavy duty trucks, respectively, as assumed in the traffic model.

<sup>f</sup> Truck trips are reported as the equivalent number of passenger cars (1 truck = 2 cars).

<sup>g</sup> No new non-intermodal traffic would be generated due to changes in the size of rail terminal facilities.

<sup>h</sup> Negligible peak hour traffic is expected to result from development of 11,000 sq. ft. of event and common space at the Amtrak Station, and that space is not included in the 16<sup>th</sup>/Wood land use amounts.

Separate components of redevelopment were treated as separate land uses for the purpose of trip generation.

1

2 For the purpose of determining the number of trips that would be generated by redevelopment,  
3 the office/R&D land use category described for the Gateway development area was considered  
4 as office space. Office development typically generates a slightly higher number of trips than  
5 R&D development, so the treatment of the combined category as office space would result in a  
6 conservative assessment of traffic impacts. The ancillary retail spaces located in the Gateway  
7 development area and the 16<sup>th</sup>/Wood area were treated as office space because the retail  
8 would serve the offices. The ITE trip generation rates for offices include office buildings with a  
9 variety of tenant services including service retail facilities.

1 The community service (JATC) function contained in the Gateway development area was  
2 treated as light industrial development for the purpose of determining the number of trips that  
3 would be generated. JATC provides job training in the building trades.

4 The number of trips generated in the Port area was determined based on the difference  
5 between the trips that would be generated by previously approved Port development and the  
6 trips that would be generated after redevelopment. Truck trips for the Port area are reported in  
7 terms of the equivalent number of passenger cars. One truck was considered the equivalent of  
8 two passenger cars as recommended in the Highway Capacity Manual (Transportation  
9 Research Board 1995 and 1998). The conversion of truck trips to passenger car equivalents  
10 was performed to represent the relative amount of roadway capacity consumed by heavy trucks  
11 relative to cars.

12 New intermodal truck trips travel between the marine terminals and the rail terminals and remain  
13 entirely within the Port area. Intermodal truck trips generated by redevelopment would comprise  
14 7 percent of the total redevelopment trips and 31 percent of Port area trips (in terms of  
15 passenger car equivalents). New Port area truck trips to and from locations outside the  
16 redevelopment project area would constitute 6 percent of total redevelopment trips and 28  
17 percent of total Port area trips in terms of passenger car equivalents.

18 The number of rail terminal trips is a function of the length of loading track. The New Intermodal  
19 Facility would have slightly less loading track than the JIT, resulting in a slight relative reduction  
20 of employee related traffic. The changes proposed in the rail facilities would not affect the  
21 number of truck trips associated with the railyards. The intermodal traffic at the railyards would  
22 be a function of the amount of marine terminal capacity as long as there is enough capacity at  
23 the rail terminals to accommodate the demand. Likewise, the amount of non-intermodal truck  
24 traffic at the rail yards is a function of local market demand and would not change as long as  
25 there is sufficient railyard capacity. The New Intermodal Facility, in combination with the UP  
26 West Oakland intermodal railyard, would provide adequate railyard capacity to accommodate  
27 expected demand for the foreseeable future.

### 28 **Trip Distribution**

29 The distribution of redevelopment project area trips was performed separately for each of the  
30 redevelopment sub-areas based on the distribution of traffic derived from the Alameda County  
31 Congestion Management Agency Countywide Transportation Model. The distribution of truck  
32 traffic at the Port area marine terminals and railyards was derived from a 1993 truck survey  
33 conducted by the Port of Oakland (Port of Oakland 1993). The distribution of redevelopment  
34 traffic is shown in Table 4.3-7 and Figures 4.3-5 and 4.3-6. Less than one percent of Port area  
35 truck traffic is expected to use the portion of I-580 with heavy truck restrictions, and local  
36 roadways in Emeryville, Berkeley, and Alameda.

**Table 4.3-7**  
**Distribution of Redevelopment Trips**

Route	Gateway Development Area	Port Area Employees	Trucks	16 <sup>th</sup> /Wood Area
<b>Origin or Destination Outside Local Study Area</b>				
I-80 West	10%	10%	9%	9%
I-80 East	14%	14%	20%	16%
SR 24	9%	11%	2%	8%
I-580 East	7%	5%	20%	5%
I-880 South	11%	21%	24%	13%
<b>Origin or Destination Within Local Study Area</b>				
Oakland/San Leandro				
SR 24	3%	5%	2%	3%
I-580 East	13%	8%		6%
I-880 South	4%	6%	8%	5%
Grand E. of I-80	17%	6%	10%	16%
7 <sup>th</sup> Street	1%	4%	3%	9%
MacArthur Blvd	3%	2%	2%	2%
Emeryville/Berkeley				
I-80 Frontage Road	1%	1%		1%
San Pablo Avenue	1%	1%		1%
Ashby Avenue	1%	1%		1%
Powell Street	1%	1%		1%
Alameda				
Constitution Way	2%	2%		2%
Webster Street	2%	2%		2%
Total	100%	100%	100%	100%
<b>Sources:</b> Alameda Countywide Model 2002. Port of Oakland 1993.				

## Significance Criteria

Redevelopment would have a significant effect on the environment if it would:

- Cause an increase in traffic which is substantial in relation to the existing or future baseline traffic load and capacity of the street system (i.e., result 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 would substantially impact access or traffic load and capacity of the street system. Specifically, redevelopment would have a significant effect on the environment if it would:

1

- insert

Figure 4.3-5 Redevelopment Trip Distribution (Outside the Local Study Area)

2



1

- insert

Figure 4.3-6 Redevelopment Trip Distribution (Within the Local Study Area)

2

- 1           – Cause the existing or future baseline LOS to degrade to worse than LOS D (*i.e.*, E) at a  
2           signalized intersection which is located outside the Downtown<sup>5</sup> area;
- 3           – Cause the existing or future baseline LOS to degrade to worse than LOS E (*i.e.*, F) at a  
4           signalized intersection which is located within the Downtown area;
- 5           – Cause the total intersection average vehicle delay to increase by four (4) or more  
6           seconds, or degrade to worse than LOS E (*i.e.*, F) at a signalized intersection outside  
7           the Downtown area where the existing or future baseline level of service is LOS E;
- 8           – Cause an increase in the average delay for any of the critical movements of six (6)  
9           seconds or more, or degrade to worse than LOS E (*i.e.*, F) at a signalized intersection  
10          for all areas where the existing or future baseline level of service is LOS E;
- 11          – At a signalized intersection for all areas where the existing or future baseline LOS is F,  
12          cause:
  - 13           (a) The total intersection average vehicle delay to increase by two (2) or more seconds,
  - 14           (b) An increase in average delay for any of the critical movements of four (4) seconds or  
15           more, or
  - 16           (c) The volume-to-capacity (“V/C”) ratio exceeds three (3) percent (but only if the delay  
17           values cannot be measured accurately);
- 18          – Add ten (10) or more vehicles and after project completion satisfy the Caltrans peak hour  
19          volume warrant at an unsignalized intersection for all areas;
- 20          – Make a considerable contribution to cumulative impacts (a project’s contribution to  
21          cumulative impacts is considered “considerable” when redevelopment contributes five  
22          (5) percent or more of the cumulative traffic increase as measured by the difference  
23          between existing and cumulative [with project] conditions.) See Chapter 5: Cumulative  
24          Impacts.
- 25          • Cause a roadway segment on the Metropolitan Transportation System (MTS) to operate at  
26          LOS F or increase the V/C ratio by more than three (3) percent for a roadway segment that  
27          would operate at LOS F without redevelopment<sup>6</sup>;

---

<sup>5</sup> Downtown is defined in the Land Use Transportation Element of the General Plan (page 67) as the area generally bounded by West Grand Avenue to the north, Lake Merritt and Channel Park to the east, the Oakland Estuary to the south and I-980/Brush Street to the west.

<sup>6</sup> LOS and delay are based on the *Highway Capacity Manual*, Transportation Research Board, National Research Council, 1985, as required by the Alameda County CMA.

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase traffic hazards to motor vehicles, bicycles, or pedestrians due to a design feature that does not comply with Caltrans design standards (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment or large trucks on neighborhood-serving streets);
- Result in less than two emergency access routes for streets exceeding 1,000 feet in length;
- Result in inadequate parking capacity or increase the number and incidence of large vehicles parking within surrounding communities or on streets not designated for such uses. Inadequate parking capacity would result in a parking demand (both project-generated and project-displaced) that would not be met by the project's proposed parking supply or by the existing parking supply within a reasonable walking distance of the project site. Project-displaced parking results from the project's removal of standard on-street parking and legally required off-street parking (non-public parking which is legally required);
- Fundamentally conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks);
- Generate added transit ridership that would:
  - Increase the average ridership on AC Transit lines by three (3) percent or more where the average load factor with the project in place would exceed 125 percent over a peak thirty minute period;
  - Increase the peak hour average ridership on BART by three (3) percent or more where the passenger volume would exceed the standing capacity of BART trains;
  - Increase the peak hour average ridership at a BART station by three (3) percent where average waiting time at fare gates would exceed one minute; or
- Cause unreasonable delays to commercial vessels plying their trade.

Not all criteria listed above apply to proposed redevelopment. Redevelopment would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

#### **4.3.6 Impacts**

##### **Benefits**

Redevelopment would substantially reduce hazards to bicyclists and pedestrians in the redevelopment project area. Redevelopment and implementation of Caltrans public access

commitments would include a Class I multi-use trail within the right-of-way of the Gateway development area access road, connecting Maritime Street to the spur trail Caltrans has committed to fund from the vicinity of the MacArthur Maze to the Gateway peninsula. As part of the realignment of Maritime Street, the Class I spine trail would be extended southward from the new access road to the existing Bay Trail spur along 7th Street.

Redevelopment would provide 105 acres of ancillary maritime support within the redevelopment project area. Ancillary maritime support may include truck parking, container freight stations, container storage, repair and related activities, customs, and agricultural inspection facilities, or other uses. To the extent that truck parking, container freight handling, and container storage would be accommodated near the Port, relief from truck traffic and parking would be provided for nearby areas with incompatible land uses.

Redevelopment would reduce delays on Maritime Street caused by trains entering and leaving the JIT. The replacement of the JIT with the New Intermodal Facility would result in the removal of two gate controlled railroad/highway crossings on Maritime Street. Rail access to the New Intermodal Facility would be via a grade separation across 7<sup>th</sup> Street, which would not impede motor vehicle traffic.

**Impact 4.3-1:** Redevelopment would cause the level of service to degrade to worse than LOS D at three intersections located outside the Downtown area:

- West Grand Avenue/Maritime Street
- West Grand Avenue/I-880 Frontage Road
- 7<sup>th</sup>/Maritime Street

**Significance:** Significant

**Mitigation 4.3-1:** ***West Grand Avenue/Maritime Street.*** As part of the design for the realignment of Maritime Street, the Port shall also provide modifications to the West Grand Avenue/Maritime Street intersection.

**Mitigation 4.3-2:** ***West Grand Avenue/I-880 Frontage Road.*** Project area developers shall fund, on a fair-share basis, modifications to the West Grand Avenue/I-880 Frontage Road intersection.

**Mitigation 4.3-3:** ***7<sup>th</sup>/Maritime Street.*** As part of the design for the realignment of Maritime Street, the Port shall also provide modifications to the 7<sup>th</sup>/Maritime Street intersection.

**Residual Significance:** Less than significant

Redevelopment would generate 5,800 trips during the a.m. peak hour and 5,500 trips during the p.m. peak hour. Redevelopment traffic would cause the level of service to degrade to worse

than LOS D at the three intersections listed above. The impact is considered to be significant. With implementation of Mitigation Measures 4.3-1, 4.3-2, and 4.3-3 the impact would be substantially reduced, and the residual impact would be less than significant.

The impact of redevelopment on study area intersections is summarized in Table 4.3-8. The reduction of those impacts by the proposed mitigation measures is shown in Table 4.3-9.

**Table 4.3-8**  
**Intersections Operations for Redevelopment**

Intersection	1995 Baseline Peak Hour				Existing Plus Redevelopment, 2025 Peak Hour			
	A.M.		P.M.		A.M.		P.M.	
	LOS	Delay <sup>a</sup>	LOS	Delay <sup>a</sup>	LOS	Delay <sup>a</sup>	LOS	Delay <sup>a</sup>
West Grand Avenue/Maritime Street	D	37.1	C	32.6	<b>F</b>	<b>298.1</b>	<b>F</b>	<b>262.6</b>
West Grand Avenue/I-880 Frontage Road	C	30.7	D	37.3	<b>E</b>	<b>79.6</b>	<b>F</b>	<b>171.1</b>
West Grand Avenue/Mandela Parkway	A	9.6	B	10.6	B	17.4	C	31.3
West Grand Avenue/Adeline Street	B	11.5	B	10.6	B	13.9	B	15.4
West Grand Avenue/Market Street	A	9.9	B	10.6	B	10.4	A	10.0
West Grand Avenue/San Pablo Av	B	11.5	B	11.6	B	12.5	B	12.5
West Grand Avenue/MLK Jr. Way <sup>b</sup>	B	13.7	B	16.9	B	11.7	B	15.0
West Grand Avenue/Northgate Avenue <sup>b</sup>	C	23.9	C	21.8	C	25.2	C	25.0
West Grand Avenue/Harrison Street <sup>b</sup>	C	24.2	C	23.3	C	25.9	C	24.7
7 <sup>th</sup> Street/Maritime Street	C	30.4	C	33.6	<b>F</b>	<b>126.8</b>	<b>E</b>	<b>78.5</b>
7 <sup>th</sup> Street/I-880 Southbound Ramp	A	5.2	A	7.5	A	5.3	B	14.0
7 <sup>th</sup> Street/I-880 Northbound Ramp	C	29.3	C	30.6	D	43.1	C	33.0
7 <sup>th</sup> Street/Peralta Street	A	8.5	A	8.7	A	7.9	A	7.8
7 <sup>th</sup> Street/Mandela Parkway	B	14.8	B	16.7	B	14.5	B	15.6
7 <sup>th</sup> Street/Union Street	A	9.0	B	11.9	A	8.6	B	11.2
7 <sup>th</sup> Street/Adeline Street	B	10.7	A	9.5	B	10.7	B	12.0
7 <sup>th</sup> Street/Market Street	B	15.0	C	20.8	C	20.7	C	20.6
7 <sup>th</sup> Street/Harrison Street <sup>b</sup>	B	10.5	B	10.8	B	10.8	B	10.9
7 <sup>th</sup> Street/Jackson Street <sup>b</sup>	C	33.6	C	21.3	E	61.5	C	23.8
6 <sup>th</sup> Street/Jackson Street <sup>b</sup>	B	10.4	B	11.7	B	10.4	B	11.7
5 <sup>th</sup> Street/Union Street/I-880 Ramps	C	31.5	C	27.2	C	33.0	C	27.2
5 <sup>th</sup> Street/Adeline Street	C	30.4	C	29.1	C	32.8	C	30.8
I-880 Off Ramp/Market Street	B	19.5	C	22.8	C	20.3	C	22.6
5 <sup>th</sup> Street/Broadway <sup>b</sup>	C	20.9	C	29.4	C	21.2	C	34.4
3 <sup>rd</sup> Street/Adeline Street (unsignalized) <sup>c</sup>	B	11.3	B	11.8	B	13.3	B	13.1
3 <sup>rd</sup> Street/Market Street(unsignalized) <sup>c</sup>	B	13.9	B	13.3	C	15.8	B	14.1
14 <sup>th</sup> Street/Mandela Parkway	A	8.5	A	8.4	A	9.4	A	8.2
12 <sup>th</sup> Street/Brush Street <sup>b</sup>	C	30.4	C	22.4	C	31.9	C	22.4
12 <sup>th</sup> Street/Castro Street <sup>b</sup>	B	15.5	B	19.1	B	15.5	B	19.1
27 <sup>th</sup> Street/SR 24-580 SB Off-Ramp	B	11.8	B	15.9	B	11.5	B	16.3
27 <sup>th</sup> Street/SR 24-580 NB On-Ramp	A	9.5	C	20.5	B	10.1	C	26.1
West MacArthur Blvd/Adeline Street	B	18.4	B	19.9	C	21.0	C	23.1
West MacArthur Blvd/Market Street	B	15.8	B	17.3	B	15.9	B	17.1

**Table 4.3-8**  
**Intersections Operations for Redevelopment**

Intersection	1995 Baseline Peak Hour				Existing Plus Redevelopment, 2025 Peak Hour			
	A.M.		P.M.		A.M.		P.M.	
	LOS	Delay <sup>a</sup>	LOS	Delay <sup>a</sup>	LOS	Delay <sup>a</sup>	LOS	Delay <sup>a</sup>
Powell Street/I-80 Frontage Road	C	21.3	C	22.4	C	21.3	C	22.4
Powell Street/I-80 NB Ramps	C	25.2	D	44.1	C	25.5	D	48.4
Powell Street/Christie Street	C	29.9	C	30.5	C	29.9	C	30.5
Powell Street/Hollis Street	C	22.7	C	31.1	C	22.6	C	31.6
Powell Street/San Pablo Av	C	31.8	C	34.4	C	32.5	C	34.9
Stanford Avenue/Market Street	C	28.6	C	31.6	C	28.7	C	32.4
Stanford Avenue/MLK Jr. Way	B	12.5	D	46.4	B	12.5	D	46.4
Ashby Avenue/7 <sup>th</sup> Street	C	33.7	D	48.6	C	34.5	D	49.5
Ashby Avenue/San Pablo Av	C	29.8	C	32.3	C	30.8	C	33.7
Marina Village/Constitution Way	C	20.6	C	21.9	C	20.3	C	26.6
Atlantic Avenue/Webster Street	C	31.5	C	28.6	C	32.5	C	28.7
Atlantic Avenue/Constitution Way	C	22.3	C	20.7	C	21.8	C	20.3
Loop Road/GDA Spine Road	-	-	-	-	B	18.1	C	21.4

**Source:** Dowling Associates 2002.

**Notes:** Significant impacts of redevelopment are shown in ***Boldface Italics***.

<sup>a</sup> Delay in seconds per vehicle.

<sup>b</sup> Defined as a downtown intersection.

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**Table 4.3-9**  
**Operations at Impacted Intersections After Mitigation**

Intersection	Existing Plus Redevelopment Peak Hour				Redevelopment with Mitigation Peak Hour			
	A.M.		P.M.		A.M.		P.M.	
	LOS	Delay <sup>a</sup>	LOS	Delay <sup>a</sup>	LOS	Delay <sup>a</sup>	LOS	Delay <sup>a</sup>
West Grand Avenue/Maritime Street	F	298.1	F	262.6	D	54.4	D	41.5
West Grand Avenue/I-880 Frontage Road	E	79.6	F	171.1	D	45.8	D	52.3
7 <sup>th</sup> Street/Maritime Street	F	126.8	E	78.5	D	53.1	C	31.9

**Source:** Dowling Associates 2002.

**Notes:** Significant impacts of redevelopment are shown in ***Boldface Italics***.

<sup>a</sup> Delay in seconds per vehicle.

<sup>b</sup> Defined as a downtown intersection.

<sup>c</sup> Significant impacts at unsignalized intersections are based on signal warrants – not delay.

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**Impact 4.3-2:** Redevelopment would cause some roadway segments on the MTS to operate at LOS F and increase the V/C ratio by more than three percent on segments that would operate at LOS F without redevelopment.

**Significance:** Significant

**Mitigation 4.3-4:** The City and Port shall jointly create and maintain a transit access plan(s) for the redevelopment project area designed to reduce demand for single-occupant, peak hour trips, and to increase access to transit opportunities. Major project area developers<sup>7</sup> shall fund on a fair share basis the plan(s).

**Residual Significance:** Significant and unavoidable

Redevelopment would add substantial traffic to roadway segments on the MTS. Redevelopment would cause the following freeway segments on the MTS to operate at LOS F or increase the V/C ratio by more than three (3) percent for segments that would operate at LOS F without redevelopment:

- I-80 east of the I-80/I-580 split
- I-880 connector to I-80 east
- I-880 from 7<sup>th</sup> Street to the segment south of I-238
- I-580 east and west of I-980/SR-24
- SR-24 east of I-580

The impact is considered significant. Implementation of Mitigation Measure 4.3-4 would reduce traffic demand on the MTS, but the residual impact to existing congested freeway segments would remain significant, and the impact is considered unavoidable. Mitigation Measure 4.4-5, intended to primarily mitigate air quality impacts, would also reduce traffic impacts, but not to a level that is less than significant. No feasible mitigation measures have been identified that would reduce freeway impacts to a level that is less than significant. Increasing freeway capacity by adding lanes would not be feasible because of high cost, negative impacts to air quality, and other factors. Moreover, adding lanes is inconsistent with the policies of the responsible regional agencies.

Other roadway segments on the MTS were evaluated as part of the CMP analysis prepared to satisfy requirements of the Alameda County CMA. No roadway segments were shown to be significantly impacted in that analysis. The CMP analysis showed that the Posey-Webster Tubes would operate at LOS F during the a.m. and p.m. peak hours with or without redevelopment. Traffic from redevelopment would represent 1.1 percent of total traffic at the Posey-Webster Tubes during the a.m. peak hour and less than 1 percent during the p.m. peak hour.

Analysis tables for freeway segments and the CMP analysis are included in Appendix 4.3.

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<sup>7</sup> A "major" developer is defined as a City, Port, or private developer of more than 20,000 square feet of employment-generating space, or facilities generating more than 100 jobs.

**Impact 4.3-3:** Redevelopment could result in traffic hazards to motor vehicles, bicycles, or pedestrians due to inadequate design features or incompatible uses.

**Significance:** Potentially significant

**Mitigation 4.3-5:** Redevelopment elements shall be designed in accordance with standard design practice and shall be subject to review and approval of the City or Port design engineer.

**Mitigation 4.3-6:** The Port shall fund signage designating through transport truck prohibitions through the interior of the Gateway development area.

**Mitigation 4.3-7:** The City and the Port shall continue to work together and shall create a truck management plan designed to reduce the effects of transport trucks on local streets. The City and Port shall fund on a fair share basis implementation of this plan.

**Residual Significance:** Less than significant

The redevelopment project area will have a variety of land uses that would attract a range of travelers, including bicyclists and pedestrians accessing the park land along the waterfront, commuter vehicles traveling to and from employment centers within the project area, and Port-related trucks. This mix of unlike travel modes combined with increased traffic could increase hazards. Because occurrence of this impact depends on site-specific design not currently defined, the impact is considered potentially significant. With implementation of Mitigation Measures 4.3-5, 4.3-6, and 4.3-7, the impact would be minimized, and the residual impact would be less than significant.

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**Impact 4.3-4:** Due to site constraints, it may not be possible to provide two emergency access routes to the western portion of the Gateway development area, which would be in excess of 1,000 feet from the nearest major arterial.

**Significance:** Potentially significant

**Mitigation 4.3-8:** Construct an emergency vehicle access to the western portion of the Gateway development area or provide an emergency service program and emergency evacuation plan using waterborne vessels.

**Residual Significance:** Less than significant



Final site plans for the Gateway development area have not been developed, and it is not currently known if a second access to the western portion of that area would be provided. Because occurrence of this impact depends on site-specific design not currently defined, the impact is considered potentially significant. With implementation of Mitigation Measure 4.3-8, the impact would be minimized, and the residual impact would be less than significant.

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**Impact 4.3-5:** Redevelopment could fundamentally conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

**Significance:** Potentially significant

**Mitigation 4.3-9:** Redevelopment plans shall conform to City of Oakland or Port development standards with facilities that support transportation alternatives to the single-occupant automobile.

**Mitigation:** Measure 4.3-4, described above.

**Residual Significance:** Less than significant

Final site plans for the redevelopment project area have not been developed, and it is not known if redevelopment would conflict with adopted policies, plans, or programs supporting alternative transportation. Because occurrence of this impact depends on site-specific designs not currently defined, the impact is considered potentially significant. With implementation of Mitigation Measures 4.3-4 and 4.3-9, the impact would be minimized, and the residual impact would be less than significant.

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**Impact 4.3-6:** Redevelopment could result in an inadequate parking supply at the Gateway development area, the 16<sup>th</sup>/Wood sub-district, or for trucks serving the Port of Oakland.

**Significance:** Potentially significant

**Mitigation 4.3-10:** The number of parking spaces provided in the project area shall comply with City code or Port requirements and/or with recommendations of a developer funded parking demand analysis.

**Mitigation 4.3-11:** During both construction and operation, the Port shall provide truck parking within the Port development area or Maritime sub-district, at a reasonable cost to truck operators and provide advance information to operators where the parking is located.

**Residual Significance:** Less than significant

Subsequent redevelopment activities have not been designed. Because occurrence of this impact depends on site-specific design not currently defined, the impact is considered potentially significant. With implementation of Mitigation Measures 4.3-10 and 4.3-11, the impact would be avoided or minimized, and the residual impact would be less than significant.

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**Impact 4.3-7:** Redevelopment would increase the average ridership on AC Transit lines by more than 3 percent on transit lines serving the redevelopment project area, but the average load factor with the project in place would not exceed 125 percent over a peak 30-minute period.

**Significance:** Less than significant

**Mitigation:** Mitigation is not warranted.

Redevelopment would increase transit ridership on existing AC transit routes serving the redevelopment project area. The demand for transit service would be highly directional — predominantly toward the redevelopment project area during the morning peak hour and away from the development project area during the evening peak hour. A summary of transit ridership is shown in Table 4.3-10. Although redevelopment would essentially double the AC Transit ridership between the redevelopment project area and downtown, there is enough capacity on the AC Transit routes to accommodate the additional demand. Because the average load factor with redevelopment in place would not exceed 125 percent over a 30-minute period, the impact is considered less than significant.

**Table 4.3-10  
AC Transit Riders**

Route	Direction	Capacity	Existing		Redevelopment (New Riders) <sup>a,b</sup>		Total with Redevelopment		Load Factor with Redevelopment	
			AM	PM	AM	PM	AM	PM	AM	PM
13	Eastbound	94	47	18	9	54	56	72	60%	77%
13	Westbound	94	27	40	58	11	85	51	91%	55%
62	Northbound	94	19	21	37	10	56	31	59%	33%
62	Southbound	94	15	37	8	39	23	76	24%	80%

**Sources:** AC Transit 1998 Boarding & Alighting Survey 1998 and Alameda Countywide Model 2002.

**Notes:**

<sup>a</sup> The table includes AC Transit riders between the redevelopment project area and downtown during peak 30-minute periods.

<sup>b</sup> Approximately 4.5 percent of redevelopment trips would use AC Transit.

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**Impact 4.3-8:** Redevelopment would increase passenger volume exceeding the standing capacity of BART trains, but would not increase peak hour average ridership 3 percent.

**Significance:** Less than significant

**Mitigation:** Mitigation is not warranted.

The number of BART riders during both the morning and evening peak commute hour is approximately 19,500 at the West Oakland BART station. Redevelopment would add about 410 peak hour trips to BART during the peak hours — 2.1 percent of existing ridership. BART is currently studying system-wide capacity issues and will be adjusting service to match demand. A preliminary assessment by BART staff suggests that the capacity impact of redevelopment would be minimal (BART 2002). Because redevelopment would not increase peak hour average ridership three percent on BART, the impact is considered less than significant.

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**Impact 4.3-9:** Redevelopment would increase the peak hour average ridership at the West Oakland BART station by 3 percent where average waiting time at fare gates could exceed 1 minute.

**Significance:** Potentially significant

**Mitigation 4.3-12:** The City and Port shall provide detailed information regarding redevelopment to BART to enable BART to conduct a comprehensive fare gate capacity assessment at the West Oakland BART station. Pending the results of this assessment, the City and the Port may need to participate in funding the cost of adding one or more fare gates at the West Oakland BART station.

**Residual Significance:** Less than significant

Approximately 1,010 BART riders enter or exit the West Oakland BART station during both the morning and evening peak commute hour. Redevelopment would add about 410 peak hour riders to the West Oakland BART station during the peak hours — 41 percent of existing ridership. Most of the BART users added by redevelopment would exit the station during the morning peak and enter the station during the evening peak commuter period — in the opposite direction of the current peak demand, as shown in Table 4.3-11. There are five fare gates at the station — two for entering, two for exiting passengers, and one reversible gate that serves the peak direction of passenger flow. BART staff has indicated that delays are sometimes a problem for the peak direction at the station. Redevelopment would increase demand for the peak direction of flow at the fare gates by about seven percent. Because it is possible redevelopment could result in an average waiting time exceeding one minute at the West

Oakland BART station fare gates, the impact would be considered potentially significant. With the implementation of Mitigation Measure 4.3-13, the impact would be minimized, and the residual impact is considered less than significant.

**Table 4.3-11  
BART Riders at the West Oakland Station**

Direction	Existing		Redevelopment (New Riders) <sup>a</sup>		Total with Redevelopment	
	AM	PM	AM	PM	AM	PM
Boarding	914	209	61	333	975	542
Leaving	99	805	340	77	439	882
<b>Total</b>	<b>1,013</b>	<b>1,014</b>	<b>401</b>	<b>410</b>	<b>1,414</b>	<b>1,424</b>

**Source:** BART Data Acquisition System 2002.

**Note:** <sup>a</sup> Approximately 8 percent of redevelopment trips would use BART.

**Impact 4.3-10:** Construction of New Berth 21 could cause minor delays to commercial vessels plying their trade.

**Significance:** Less than significant

**Mitigation:** Mitigation is not warranted.

Dredging equipment would be present in Outer Harbor for a short period of time. The equipment would operate along the east bank of the Outer Harbor channel at its far end out of the way of most vessel traffic. Dredging equipment would be highly visible, and would be well marked in accordance with U.S. Coast Guard regulations. It is estimated that the vast majority of the fill material required for construction of New Berth 21 would arrive by barge, probably from maintenance dredging or from the Bay Bridge reconstruction project. There is a potential for very minor delays to commercial vessels because ferries, work-boats, and other vessels generating powerful wakes would have to slow when passing barges or dredges being transported to and from the work site. However, the delays would not be frequent and would be within normally accepted practices for a busy port complex. The construction of New Berth 21 would not cause unreasonable delays to commercial vehicles plying their trade, and the impact would be less than significant.

**Impact 4.3-11:** Remediation, demolition/deconstruction, and construction activities within the redevelopment project area would utilize a significant number of trucks and could cause significant circulation impacts on the street system.

**Significance:** Potentially significant

**Mitigation 4.3-13:** Prior to commencing hazardous materials or hazardous waste remediation, demolition, or construction activities, a Traffic Control Plan (TCP) shall be implemented to control peak hours trips to the extent feasible, assure the safety on the street system and assure that transportation activities are protective of human health, safety, and the environment.

**Residual Significance:** Less than significant

Construction and/or remediation would generate haul, delivery, and employee trips. Construction and remediation generally involve large diesel transport trucks. For traffic impacts, transport trucks are considered equivalent to two passenger cars. Remediation vehicles include those transporting both hazardous materials and hazardous waste. These trips may substantially degrade LOS on area roadways and the impact is considered potentially significant. Because occurrence of this impact depends on details of construction/remediation timing and the exact amount and location of related traffic not currently developed, the impact is considered potentially significant. With implementation of Mitigation Measure 4.3-13, the impact would be substantially reduced, and the residual impact would be less than significant.

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#### 4.3.7 Mitigation

Implementation of the following mitigation measures will avoid, minimize, reduce, rectify, or compensate for significant impacts of redevelopment.

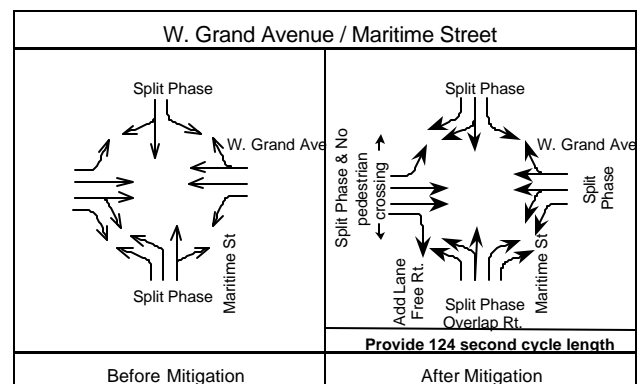
**Mitigation 4.3-1: West Grand Avenue/Maritime Street.** As part of the design for the realignment of Maritime Street, the Port shall also provide modifications to the West Grand Avenue/Maritime Street intersection.

This measure applies to Impact 4.3-1 and Cumulative Impact 5.3-1.

The following modifications shall be made at the West Grand Avenue/Maritime Street intersection:

1. Revise northbound Maritime Street lanes to provide:

- 1 left turn lane
- 1 combination left-through lane
- 2 right turn lanes with overlap signal phasing (green arrow)



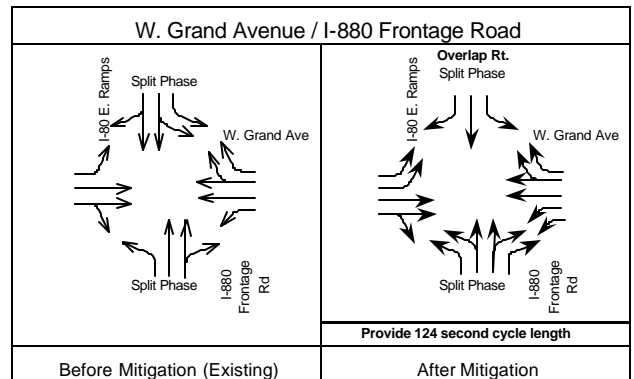
2. Revise southbound Maritime Street (formerly Wake Avenue) lanes to provide:
  - a. 1 left turn lane
  - b. 1 combination through-right lane
  - c. 1 right-turn lane
3. Revise eastbound West Grand Avenue exit ramp to provide:
  - a. 1 left turn lane
  - b. 2 through lanes
  - c. 1 right turn lane with a receiving third southbound lane south of the intersection (free right)
4. Revise westbound West Grand Avenue to provide:
  - a. 1 left turn lane
  - b. 1 combination left-through lane
  - c. 1 combination through-right lane
5. Provide split signal phasing for east and westbound traffic movements on West Grand Avenue
6. Increase the traffic signal cycle length to 124 seconds.

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**Mitigation 4.3-2: West Grand Avenue/I-880 Frontage Road.** Project area developers shall fund, on a fair share basis, modifications to the West Grand Avenue/I-880 Frontage Road intersection.

This measure applies to Impact 4.3-1 and Cumulative Impact 5.3-1.

The following modifications shall be made at the West Grand Avenue/I-880 Frontage Road intersection:



1. Revise the northbound Frontage Road lanes to provide:
  - a. 1 left-turn lane
  - b. 1 combination left-through lane
  - c. 1 combination through-right lane

- d. 1 right-turn lane
2. Revise the southbound I-80 East Ramp lanes to provide:
  - a. 1 left-turn lane
  - b. 1 through lane
  - c. 1 right-turn lane with overlap signal phasing (green arrow)
3. Revise the eastbound West Grand Avenue lanes to provide:
  - a. 2 left-turn lanes
  - b. 1 through lane
  - c. 1 combination through-right lane
4. Revise the westbound West Grand Avenue lanes to provide:
  - a. 2 left-through lanes
  - b. 1 through lane
  - c. 1 combination through-right lane
  - d. 1 right-turn lane
5. Increase the traffic signal cycle length to 124 seconds.

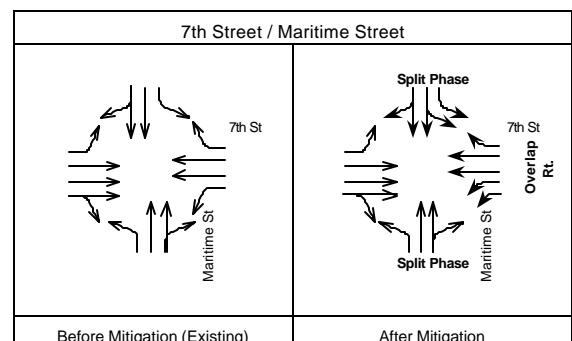
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**Mitigation 4.3-3: 7<sup>th</sup>/Maritime Street.** As part of the design for realignment of Maritime Street, the Port shall also provide modifications to the 7<sup>th</sup>/Maritime Street intersection.

This measure applies to Impact 4.3-1 and Cumulative Impact 5.3-1.

The following modifications shall be made at the 7<sup>th</sup> /Maritime Street intersection:

1. Revise the southbound Maritime Street lanes to provide:
  - a. 1 left-turn lane
  - b. 1 combination left-through lane
  - c. 1 combination through-right lane
2. Revise the westbound 7<sup>th</sup> Street lanes to provide:
  - a. 2 left-turn lanes



b. 2 through lanes

c. 1 right-turn lane with overlap signal phasing (green arrow)

3. Provide split signal phasing for the north and southbound traffic movements on Middle Harbor Road.

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**Mitigation 4.3-4:** The City and Port shall jointly create and maintain a transit access plan(s) for the redevelopment project area designed to reduce demand for single-occupant, peak hour trips, and to increase access to transit opportunities. Major project area developers shall fund on a fair share basis the plan(s).

This measure applies to Impact 4.3-2 and Cumulative Impact 5.3-2.

The Transit Access Plan shall be funded on a fair-share basis by major project area developers, defined as developers of more than 20,000 square feet of employment-generating space, or developers who would generate more than 100 job opportunities.

The City shall establish a Transportation Enhancement Association or other similar funding mechanism whereby developers will contribute their fair share to the Transit Access Plan. The plan shall include transportation demand management strategies designed to reduce peak hour trip generation, including but not limited to the following:

- Fund a transit coordinator to assist employers and employees in the project area;
- Transit user subsidies including the bulk purchase of transit passes;
- Implementation of a parking cash-out program. A parking cash-out program is an employer-funded program in which an employer offers to provide a cash allowance to an employee equivalent to the parking subsidy that the employer would otherwise pay to provide the employee with a parking space. The ACCMA estimates that such programs reduce employee commute traffic by five percent from previous non-monetary incentive-based programs and reduced parking utilization by an estimated three percent;
- Flex-time schedules;
- Telecommuting;
- Utilization of site design standards that would benefit transit, pedestrians, and bicyclists;
- Preferential parking for carpools and vanpools;
- Rideshare matching programs;



- Guaranteed Ride Home program (provides carpool and vanpool participants with a vehicle in an emergency or if they cannot leave at their usual times; and
- Funding for City and/or Port monitoring of the programs.

The plan shall include strategies designed to promote transit use and increase availability of transit opportunities within the project area, including, but not limited to the following:

- Coordination with AC Transit to provide expanded bus service with no greater than 30 minute peak commute hour headways to major employment centers.
- Coordination with BART to provide shuttle service with no greater than 15 minute peak commute hour headways between the West Oakland BART station and major employment centers
- Provision of employer incentives to use alternative transit modes, such as “Flash” passes or transit reimbursements

These measures shall be coordinated with BAAQMD and CAP Transportation Control Measures (TCMs) implemented under Mitigation Measure 4.4-5.

The Transit Access Plan shall be funded at a level that would enable the goal of a 15 percent reduction in single-occupancy, peak hour ridership.

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**Mitigation 4.3-5:** Redevelopment elements shall be designed in accordance with standard design practice and shall be subject to review and approval of the City or Port design engineer.

This measure applies to Impact 4.3-3 and Cumulative Impact 5.3-3.

Through design review, the City and/or Port, as applicable, shall ensure the design of roadways, bicycle and pedestrian facilities, parking lots, and other transportation features comply with design standards and disallow design proposals that likely to result in traffic hazards. Any mitigation or redevelopment features that may directly affect Caltrans facilities shall be submitted for review by that agency.

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**Mitigation 4.3-6:** The Port shall fund signage designating through transport truck prohibitions through the interior of the Gateway development area.

This measure applies to Impact 4.3-3.

1 Realigned Maritime Street (the “loop road”) would be designed and constructed for use by  
2 heavy trucks destined to and from the Port area. An internal Gateway development area access  
3 road will connect realigned Maritime Street to existing Maritime Street and could potentially  
4 provide a shortcut to West Grand Avenue for truck operators. To reduce the use of this road as  
5 a shortcut, the Port shall fund signage that shall be installed to clearly notify truck operators that  
6 through traffic is prohibited along the access road and existing Maritime Street. Should truck  
7 operators not comply, the Port shall continue to fund, and may also increase funding for an  
8 enforcement program to ensure compliance, particularly after the new streets are opened to  
9 traffic.

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11 **Mitigation 4.3-7:** The City and the Port shall continue to work together to create a truck  
12 management plan designed to reduce the effects of transport trucks on local streets. The City  
13 and Port shall fund on a fair share basis, implementation of this plan.

14 This measure applies to Impact 4.3-3.

15 The truck management plan may include, and is not limited to, the following elements:

- 16 • Analyze truck traffic in West Oakland;
- 17 • Traffic calming strategies on streets not designated as truck routes designed to discourage  
18 truck through travel;
- 19 • Truck driver education programs;
- 20 • Expanded signage, including truck prohibitions on streets not designated as truck routes;
- 21 • Traffic signal timing improvements;
- 22 • Explore the feasibility of truck access to Frontage Road;
- 23 • Roadway and terminal gate design elements to prevent truck queues from impeding the flow  
24 of traffic on public streets; and
- 25 • Continue Port funding of two police officers to enforce truck traffic prohibitions on local  
26 streets.

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28 **Mitigation 4.3-8:** Construct an emergency vehicle access to the western portion of the Gateway  
29 development area, or provide an emergency service program and emergency evacuation  
30 program using waterborne vessels.

31 This measure applies to Impact 4.3-4 and Cumulative Impact 5.3-4.

32 Should a second emergency access by land not be possible to the western portion of the  
33 Gateway development area, the City shall provide redundant emergency access to this area by

vessel. The area is currently served by fire boat out of the Jack London Square Fire Station. The City may elect to equip that fire boat with first response medical emergency personnel as well as limited hazardous materials response personnel and equipment (see also Mitigation Measure 4.9-1). Major developers shall fund these improvements on a fair share basis.

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**Mitigation 4.3-9:** Redevelopment plans shall conform to City of Oakland or Port development standards with facilities that support transportation alternatives to the single-occupant automobile.

This measure applies to Impact 4.3-5.

Facilities that support transportation alternatives to the single-occupant automobile may include, and are not limited to, bus turnouts, bicycle racks, on-site showers, on-site lockers, and pedestrian and bicycle ways.

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**Mitigation 4.3-10:** The number of parking spaces provided in the project area shall comply with City Code or Port requirements, and/or with recommendations of a parking demand analysis.

This measure applies to Impact 4.3-6 and Cumulative Impact 5.3-5.

Through project review, the City and/or Port shall ensure an adequate supply of parking spaces will be provided. Major redevelopment project area developers shall fund on a fair share basis a project area-wide, or potentially a sub-area specific parking demand study that shall take into consideration the TDM programs and policies developed through Mitigation Measure 4.3-4.

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**Mitigation 4.3-11:** During both construction and operation, the Port shall provide truck parking within the Port development area or Maritime sub-district, at a reasonable cost to truck operators and provide advance information to truck operators where the parking is located.

This measure applies to Impact 4.3-6 and Cumulative Impact 5.3-5.

The Port shall continue its current program of providing sufficient facilities for independent truck operators parking outside the marine terminal gates and outside the West Oakland community. It is important to maintain accessible areas for use by truckers at the Port during construction as well as after redevelopment to minimize impacts on adjacent neighborhoods.

The Port currently provides subsidized parking to independent truck owner/operators to reduce tractor and trailer parking in West Oakland. Truck parking space is leased at a cost of \$50 per chassis and \$75 per truck-trailer combination per month. The Port also provides advance

information to truck operators regarding locations available for independent truck operator parking during development of permanent ancillary maritime support facilities. This measure requires the Port maintain such programs at a reasonable cost to independent truck operators so they will be encouraged to use on-site Port-area parking facilities.

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**Mitigation 4.3-12:** The City and Port shall provide detailed information regarding redevelopment to BART to enable BART to conduct a comprehensive fare gate capacity assessment at the West Oakland BART station. Pending the results of this assessment, the City and the Port may need to participate in funding the cost of adding one or more fare gates at the West Oakland BART station.

This measure applies to Impact 4.3-9 and Cumulative Impacts 5.3-6 and 5.3-8.

BART staff's preliminary assessment is that no new fare gates would be required, but the City and Port should coordinate with BART to confirm this is the case. Uncongested fare gates are required to encourage BART ridership.

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**Mitigation 4.3-13:** Prior to commencing hazardous materials or hazardous waste remediation, demolition, or construction activities, a Traffic Control Plan (TCP) shall be implemented to control peak hours trips to the extent feasible, assure the safety on the street system and assure that transportation activities are protective of human health, safety, and the environment.

This measure applies to Impact 4.3-11.

Construction and remediation TCPs shall be designed and implemented to reduce to the maximum feasible extent traffic and safety impacts to regional and local roadways.

The TCP shall address items including but not limited to: truck routes, street closures, parking for workers and staff, access to the project area and land closures or parking restrictions that may require coordination with and/or approval by the City, the Port and/or Caltrans. The TCP shall be submitted to the City Traffic Engineering and Planning divisions or the Port, as appropriate, for review and approval prior to the issuance of any building, demolition or grading permits. The City and the Port shall coordinate their respective approvals to maximize the effectiveness of the TCP measures. DTSC would have ongoing authority under its Remedial Action Plan/Remedial Monitoring Plan oversight and the Hazardous Substances Account Act to regulate remediation transportation activities, which must be protective of human health, safety and the environment.

Remediation and demolition/construction traffic shall be restricted to designated truck routes within the City, and the TCP shall include a signage program for all truck routes serving the site during remediation or demolition/construction. A signage program details the location and type

1 of truck route signs that would be installed during remediation and demolition/construction to  
2 direct trucks to and from the project area. Truck access points for entry and exit should be  
3 included in the TCP. In addition, as determined by City of Port staff, the developer shall be  
4 responsible for repairing any damage to the pavement that is caused by remediation or  
5 demolition/construction vehicles for restoring pavement to pre-construction conditions.

6 Remediation and demolition/construction-related trips will be restricted to daytime hours, unless  
7 expressly permitted by the City or the Port, and to the extent feasible, trips will be minimized  
8 during the a.m. and p.m. peak hours.

9 The TCP shall identify locations for construction/remediation staging. Remediation staging  
10 areas are anticipated to be located near construction areas, since remediation will be largely  
11 coordinated with redevelopment. In addition, the TCP shall identify and provide off-street  
12 parking for remediation and demolition/construction staff to the extent possible throughout all  
13 phases of redevelopment. If there is insufficient parking available within walking distance of the  
14 site for workers, the developer shall provide a shuttle bus or other appropriate system to transfer  
15 workers between the satellite parking areas and remediation or demolition/construction site.

16 The TCP shall also include measures to control dust, requirements to cover all loads to control  
17 odors, and provisions for emergency response procedures, health and safety driver education,  
18 and accident notification.

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