



**COLISEUM AREA
REDEVELOPMENT PLAN
REPORT TO COUNCIL**

VOLUME III

**• Draft Environmental
Impact Report**

July 18, 1995

Prepared for:

**Oakland City Council
Oakland Redevelopment Agency**

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CITY OF OAKLAND

COLISEUM AREA
REDEVELOPMENT
PLAN

DRAFT
ENVIRONMENTAL
IMPACT REPORT

ER 93-22

State Clearinghouse No.
94043014

February 15, 1995



Woodward-Clyde 



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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION	1-1
2.0 SUMMARY	2-1
3.0 PROJECT DESCRIPTION	3-1
3.1 PROJECT LOCATION AND PLANNING DISTRICTS	3-1
3.2 REDEVELOPMENT PLAN ACTIONS AND OBJECTIVES	3-1
3.2.1 General Objectives/Goals	3-1
3.2.2 Coliseum Area-Wide Actions	3-5
3.2.3 Target Area Actions	3-6
3.3 PROJECT CHARACTERISTICS	3-12
3.4 PROPOSED PROJECT FINANCING	3-12
3.5 APPROACH TO THE EIR	3-13
3.6 INTENDED USES OF THE EIR	3-15
4.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES	4-1
4.1 POLICY CONFORMITY	4-1
4.1.1 Environmental Setting	4-1
4.1.2 Significance Criteria	4-6
4.1.3 Impacts	4-6
4.1.4 Mitigation	4-11
4.2 LAND USE COMPATIBILITY	4-13
4.2.1 Environmental Setting	4-13
4.2.2 Significance Criteria	4-26
4.2.3 Impacts	4-26
4.2.4 Mitigation	4-37
4.3 POPULATION, EMPLOYMENT AND HOUSING	4-39
4.3.1 Environmental Setting	4-39
4.3.2 Significance Criteria	4-48

TABLE OF CONTENTS (Continued)

<u>Section</u>		<u>Page</u>
	4.3.3 Impacts	4-50
	4.3.4 Mitigation	4-60
4.4	TRAFFIC AND CIRCULATION	4-61
	4.4.1 Environmental Setting	4-61
	4.4.2 Significance Criteria	4-84
	4.4.3 Impacts	4-85
	4.4.4 Mitigation	4-103
4.5	AIR QUALITY	4-117
	4.5.1 Environmental Setting	4-117
	4.5.2 Significance Criteria	4-126
	4.5.3 Impacts	4-127
	4.5.4 Mitigation	4-136
4.6	NOISE	4-139
	4.6.1 Environmental Setting	4-139
	4.6.2 Significance Criteria	4-153
	4.6.3 Impacts	4-154
	4.6.4 Mitigation	4-162
4.7	HAZARDOUS MATERIALS	4-166
	4.7.1 Environmental Setting	4-166
	4.7.2 Significance Criteria	4-177
	4.7.3 Impacts	4-178
	4.7.4 Mitigation	4-187
4.8	GEOLOGY AND SEISMICITY	4-193
	4.8.1 Environmental Setting	4-193
	4.8.2 Significance Criteria	4-199
	4.8.3 Impacts	4-200
	4.8.4 Mitigation	4-201

TABLE OF CONTENTS (Continued)

<u>Section</u>		<u>Page</u>
4.9	SURFACE WATER HYDROLOGY, STORM DRAINAGE AND WATER QUALITY	4-207
4.9.1	Environmental Setting	4-207
4.9.2	Significance Criteria	4-215
4.9.3	Impacts	4-215
4.9.4	Mitigation	4-215
4.10	BIOTIC RESOURCES	4-222
4.10.1	Environmental Setting	4-222
4.10.2	Significance Criteria	4-227
4.10.3	Impacts	4-228
4.10.4	Mitigation	4-229
4.11	CULTURAL RESOURCES	4-232
4.11.1	Prehistoric Archeology	4-232
4.11.2	Architectural and Historic Resources	4-240
4.12	ENERGY	4-267
4.12.1	Environmental Setting	4-267
4.12.2	Significance Criteria	4-269
4.12.3	Impacts	4-271
4.12.4	Mitigation	4-275
4.13	PUBLIC UTILITIES	4-279
4.13.1	Water Supply	4-279
4.13.2	Wastewater / Sanitary Sewer	4-282
4.13.3	Solid Waste	4-286
4.14	PUBLIC SERVICES	4-289
4.14.1	Police Protection	4-289
4.14.2	Fire Protection	4-292
4.14.3	Emergency Medical Services	4-295

TABLE OF CONTENTS (Continued)

<u>Section</u>	<u>Page</u>
5.0 SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED	5-1
6.0 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED	6-1
7.0 GROWTH INDUCING IMPACTS	7-1
7.1 DIRECT GROWTH INDUCING IMPACTS	7-1
7.2 INDIRECT GROWTH INDUCING IMPACTS	7-2
8.0 CUMULATIVE IMPACTS	8-1
8.1 INTRODUCTION	8-1
8.2 LAND USE	8-1
8.3 POPULATION, EMPLOYMENT AND HOUSING	8-2
8.4 TRANSPORTATION	8-2
8.5 AIR QUALITY	8-3
8.6 NOISE	8-3
8.7 HAZARDOUS MATERIALS	8-4
8.8 GEOLOGY AND SEISMICITY	8-6
8.9 HYDROLOGY AND WATER QUALITY	8-6
8.10 BIOTIC RESOURCES	8-7
8.11 CULTURAL RESOURCES	8-7
8.12 ENERGY	8-8
8.13 PUBLIC UTILITIES	8-8
8.14 PUBLIC SERVICES	8-9
9.0 ALTERNATIVES TO THE PROPOSED PROJECT	9-1
9.1 LEGISLATIVE FRAMEWORK	9-1
9.2 ANALYTIC APPROACH	9-1
9.3 ALTERNATIVES CONSIDERED BUT NOT FURTHER ANALYZED	9-2
9.3.1 Location-Specific Alternatives	9-2
9.3.2 Non-Location Specific Significant Effects - Constrained Development/Growth	9-3

TABLE OF CONTENTS (Continued)

<u>Section</u>		<u>Page</u>
9.4	THE NO PROJECT ALTERNATIVE	9-4
9.4.1	Description	9-4
9.4.2	Environmental Impacts	9-4
9.4.3	Reasons for Rejecting This Alternative	9-8
9.5	NO RESIDENTIAL DEVELOPMENT	9-9
9.5.1	Description	9-9
9.5.2	Environmental Impacts	9-9
9.5.3	Reasons for Rejecting This Alternative	9-13
9.6	ENVIRONMENTALLY SUPERIOR ALTERNATIVE	9-13
10.0	REFERENCES	10-1
11.0	DRAFT EIR DISTRIBUTION LIST	11-1
12.0	EIR AUTHORS; ORGANIZATIONS AND PERSONS CONTACTED	12-1
12.1	EIR AUTHORS	12-1
12.2	ORGANIZATIONS AND PERSONS CONTACTED	12-3
13.0	APPENDICES	13-1
A.	NOTICE OF PREPARATION	A-1
B.	INITIAL STUDY	B-1
C.	LAND USE AND ZONING	C-1
D.	POPULATION, EMPLOYMENT AND HOUSING METHODOLOGY	D-1
E.	TRANSPORTATION LEVELS OF SERVICE	E-1
F.	CRITERIA AIR POLLUTANTS	F-1
G.	HAZARDOUS MATERIALS	G-1
H.	EARTHQUAKE MAGNITUDE SCALES	H-1
I.	BIOTIC RESOURCES	I-1
J.	PREHISTORIC ARCHAEOLOGY	J-1

TABLE OF CONTENTS (Continued)

LIST OF TABLES

S-1		2-11
4.2-1	GENERALIZED EXISTING LAND USE WITHIN THE COLISEUM REDEVELOPMENT AREA	4-14
4.2-2	ESTIMATED NET NEW LAND USE CHANGES WITHIN THE PROPOSED COLISEUM REDEVELOPMENT AREA, 2010	4-27
4.2-3	LAND USE CHANGES IN THE COLISEUM REDEVELOPMENT AREA: YEAR 2010 BY TARGET AREA	4-30
4.3-1	POPULATION AND HOUSEHOLDS IN ALAMEDA COUNTY, CITY OF OAKLAND AND COLISEUM REDEVELOPMENT AREA	4-40
4.3-2	POPULATION BY RACE AND HISPANIC ORIGIN IN OAKLAND AND THE COLISEUM REDEVELOPMENT AREA	4-41
4.3-3	DEMOGRAPHIC PROFILE - COLISEUM REDEVELOPMENT AREA	4-42
4.3-4	DISTRIBUTION OF EMPLOYMENT BY INDUSTRY IN OAKLAND AND THE PROPOSED COLISEUM REDEVELOPMENT AREA	4-45
4.3-5	HOUSING CHARACTERISTICS - COLISEUM REDEVELOPMENT AREA	4-49
4.3-6	NET NEW EMPLOYMENT ATTRIBUTABLE TO LAND USE CHANGES IN THE COLISEUM REDEVELOPMENT AREA	4-52
4.3-7	DISTRIBUTION OF EMPLOYMENT BY INDUSTRY, YEAR 2010 WITHOUT REDEVELOPMENT PLAN AND 2010 WITH REDEVELOPMENT PLAN, COLISEUM REDEVELOPMENT AREA	4-54
4.3-8	ESTIMATED NEW JOBS, COLISEUM AREA REDEVELOPMENT PLAN, 2010	4-56
4.4-1	AC TRANSIT ROUTES IN THE STUDY AREA	4-76
4.4-2	EXISTING TRANSIT ROUTE DAILY RIDERSHIP LEVELS	4-79

TABLE OF CONTENTS (Continued)

4.4-3	TRIP GENERATION RATES	4-86
4.4-4	2010 TRIP GENERATION RATES	4-87
4.4-5	2010 CUMULATIVE LEVELS OF SERVICE WITHOUT-PLAN: SELECTED LOCATIONS	4-95
4.4-6	2010 CUMULATIVE LEVELS OF SERVICE WITH PLAN: SELECTED LOCATIONS	4-99
4.5-1	AMBIENT AIR QUALITY STANDARDS	4-119
4.5-2	OAKLAND AMBIENT AIR QUALITY MONITORING SUMMARY, 1988-92	4-121
4.5-3	BAY AREA AIR BASIN EMISSIONS INVENTORY (1991)	4-123
4.5-4	ESTIMATED DAILY REGIONAL EMISSIONS FROM PLAN-RELATED TRAFFIC	4-131
4.5-5	ESTIMATED CARBON MONOXIDE LEVELS ALONG SELECTED ROADWAY SEGMENTS	4-133
4.6-1	COMMON NOISE SOURCES AND THEIR CORRESPONDING NOISE LEVELS	4-140
4.6-2	EXISTING NOISE LEVELS AT MEASUREMENT LOCATIONS	4-144
4.6-3	TYPICAL CONSTRUCTION NOISE LEVELS	4-156
4.6-4	EXISTING AND FUTURE NOISE LEVELS	4-158
4.8-1	MODIFIED MERCALLI INTENSITY SCALE (ABRIDGED)	4-197
4.11-1	POSSIBLE CANDIDATE PROPERTIES FOR CITY LANDMARK STATUS OR THE FRUITVALE DISTRICT AREA OF SECONDARY IMPORTANCE	4-248
4.11-2	CANDIDATE CITY LANDMARK PROPERTIES OUTSIDE THE FRUITVALE COMMERCIAL AREA OF SECONDARY IMPORTANCE	4-250

TABLE OF CONTENTS (Continued)

4.12-1 ENERGY CONSUMPTION FACTORS FOR USES IN THE COLISEUM REDEVELOPMENT AREA	4-270
4.12-2 ENERGY CONSUMPTION FACTORS FOR CONSTRUCTION OF NEW BUILDINGS IN THE COLISEUM REDEVELOPMENT AREA	4-273
4.14-1 SCHOOLS SERVING THE COLISEUM REDEVELOPMENT AREA	4-298
4.14-2 NET NEW SCHOOL AGE CHILDREN AND AFFECTED SCHOOLS IN THE COLISEUM REDEVELOPMENT AREA	4-300
4.14-3 CITY-OWNED PARK AND RECREATION FACILITIES WITHIN THE COLISEUM REDEVELOPMENT AREA	4-303

LIST OF FIGURES

3-1 PROJECT LOCATION	3-2
3-2 PLANNING DISTRICTS	3-3
3-3 TARGET AREAS	3-8
4.2-1 GENERALIZED LAND USE	4-15
4.2-2 ZONING CLASSIFICATIONS	4-18
4.4-1 EXISTING DAILY TRAFFIC VOLUMES	4-62
4.4-2 EXISTING TRAFFIC LANES AND TRAFFIC SIGNALS	4-63
4.4-3 EXISTING LEVELS OF SERVICE	4-65
4.4-4 EXISTING TRANSIT SERVICES	4-74
4.4-5 PLAN TRIP DISTRIBUTION PERCENTAGES	4-89
4.4-6 PLAN TRAFFIC ONLY (DAILY VOLUMES)	4-91
4.4-7 2010 DAILY TRAFFIC VOLUMES WITHOUT PLAN	4-93
4.4-8 2010 WITHOUT PLAN LEVELS OF SERVICE	4-94
4.4-9 2010 DAILY TRAFFIC VOLUMES WITH PLAN	4-97
4.4-10 2010 WITH PLAN LEVELS OF SERVICE	4-98
4.4-11 POSSIBLE LOCATIONS FOR NEW TRAFFIC SIGNALS	4-100
4.6-1 NOISE MONITORING LOCATIONS	4-142
4.6-2 AIRPORT NOISE CONTOURS	4-147
4.6-3 LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS	4-152
4.7-1 POTENTIAL LOCATIONS OF HAZARDOUS MATERIALS	4-169
4.9-1 CREEKS AND SURFACE WATER	4-208
4.11-1 PROPERTIES OF SPECIAL CONCERN	4-245

This Draft Environmental Impact Report (Draft EIR) has been prepared in conformance with the California Environmental Quality Act (CEQA) and its applicable implementing guidelines.

The City of Oakland prepared an Initial Study on March 24, 1994 for the Oakland Coliseum Area Redevelopment Plan (see Appendix A). On the basis of the Initial Study, the City determined that the proposed plan would not result in potential significant effects with respect to the following environmental issues:

Geophysical	Unstable earth conditions; no construction within one-quarter mile of an earthquake fault; substantial depletion of a nonrenewable natural resource or inhibition of its extraction.
Air and Water	Significant alteration in air movement or climate changes due to scale of individual development within the Plan.
Human Health	Interfere with emergency response or emergency evacuation plans.

As permitted by CEQA, these environmental effects will not be addressed further in the Draft EIR on the proposed plan.

The Initial Study identified the following potential significant environmental effects that could or would result from implementation of the proposed Coliseum Area Redevelopment Plan:

Land Use and Socioeconomic factors	Cause a substantial alteration in neighborhood land use, density or character.
Transportation/Circulation/Parking	Substantially increase vehicular movement resulting in traffic hazards to motor vehicles, bicyclists, or pedestrians; alterations to present patterns of circulation or movement of people and/or goods, or alterations to waterborne, rail or air traffic.

Energy

Use or encourage use of substantial quantities of fuel or energy.

This Draft EIR evaluates these potentially significant environmental effects of the proposed Redevelopment Plan, and also evaluates various other potential effects that could result from implementation of the plan including potential impacts to air quality, noise, geology, and seismicity, hazardous materials, biological and wetlands resources, surface water, cultural and historic properties, public services, and public utilities. The Draft EIR also identifies measures that would mitigate potentially significant effects of the Redevelopment Plan, or reduce less-than-significant effects further.

This program EIR addresses the planned development for the Oakland Coliseum Area to the year 2010 by discussing the reasonably foreseeable development projects in 10 of the 18 target areas. The information in this Program EIR will be used by the City to establish specific development guidelines for development projects and ascertain if further environmental review is necessary for project approval during implementation of the Redevelopment Plan.

PROJECT DESCRIPTION

The proposed Coliseum Area Redevelopment Plan encompasses about 6,500 acres around the Oakland Coliseum. The area is well served by regional transportation facilities, including highways, airports, rail lines, and mass transit. Blighting factors in the Coliseum Redevelopment Area are both the cause and effect of the downward spiral of economic and physical conditions within the area, a situation which would not be expected to be alleviated or reversed by private enterprise actions alone.

The Coliseum Area Redevelopment Plan is based on the following goals and objectives: provide for long-term job training and employment opportunities; stimulate home ownership throughout the area; improve public safety for people living and working in the area; improve the quality of the residential environment by assisting new construction, rehabilitation and conservation of living units; eliminate the land-use conflicts between the residential and industrial edge; improve transportation, public facilities and infrastructure in residential, commercial and industrial areas; abate the most visible deteriorated conditions which effect the commercial and industrial sections of the area; stimulate industrial, research and development, and commercial development by improving obsolete, underutilized and vacant properties in the area; assist neighborhood commercial revitalization; and attract and retain businesses to the Coliseum Redevelopment Area.

The Coliseum Redevelopment Area includes seven planning districts, based on land uses, development patterns, and planning issues. A community vision for each planning district has been developed and would be implemented as a specific combination of plan actions related to each district's needs and priorities.

Further, within these planning districts, 10 target areas have been identified where planning efforts will be specifically focussed. Each target area has been identified as an area for development in order to eliminate blight.

The Coliseum Area Redevelopment Plan is projected to result in the following quantifiable benefits to the community: approximately 3,610 to 5,000 net new jobs would be created, and about 280 to 700 net new residential units, 800,700 to 960,000 net new square feet of retail, 398,500 to 622,500 net new square feet of office space, and 353,000 to 557,000 net new square feet of industrial space would be built by the year 2010.

Other benefits of the Redevelopment Plan include overall improvement to the transportation and utility systems, landscaping and lighting, open space areas, and the image of the area by removing the most obvious blight. The Plan would also improve the economic well-being of the residents through job training and increased employment opportunities, and through increased home-ownership and improved living conditions.

IDENTIFIED IMPACTS AND MITIGATION MEASURES

Table S, Summary of Impacts and Mitigation Measures, provides a summary listing of potential impacts, their significance prior to mitigation, mitigation measures that could be implemented, and the impacts' significance after mitigation. This is only a summary; a full discussion of these topic areas may be found in Chapter 4.0 Environmental Setting, Impacts and Mitigation Measures.

UNAVOIDABLE SIGNIFICANT IMPACTS

Implementation of the Coliseum Area Redevelopment Plan may result in unavoidable significant or potentially significant environmental effects due to air quality. Implementation of the Redevelopment Plan would result in an increase in regional emissions of nitrogen oxides in excess (violation) of Bay Area Air Quality Management District (BAAQMD) thresholds.

EXISTING CONDITIONS

Traffic conditions currently operate at unacceptable conditions (LOS F) at two roadway segments (Fruitvale Avenue from Alameda Avenue to Elmwood Avenue and I-880 Freeway

north of High Street to Davis Street). The LOS would not worsen in the future. However, measures are warranted to reduce these unacceptable levels of service.

CUMULATIVE EFFECTS

Cumulative project development in the vicinity, in conjunction with the Coliseum Area Redevelopment Plan would tend to stimulate growth in the Coliseum Redevelopment Area. Cumulative growth is anticipated to occur due to implementation of the Enterprise Zone and other factors. Cumulative growth without implementation of the Coliseum Area Redevelopment Plan is anticipated to include about 9,970 additional employees. Little cumulative growth in housing is anticipated to occur, as most future development in the area would probably be of a commercial and/or industrial nature without implementation of the Redevelopment Plan.

Cumulative traffic conditions without implementation of the Redevelopment Plan at two road segments which were analyzed in this EIR and that currently operate at an acceptable level of service (LOS), would degrade to a significant level (LOS E or LOS F). Cumulative traffic conditions without implementation of the Redevelopment Plan would cause the levels of service at two current problem road segments to degrade further to LOS E or LOS F. In addition, cumulative traffic conditions without implementation of the Redevelopment Plan are anticipated to cause unacceptable levels of service at five other locations for which the levels of service were not calculated in this EIR.

Projected cumulative and plan-related transit demand could cause additional crowding of bus service. About 400 additional AC Transit riders would use the bus due to implementation of the Redevelopment Plan. When spread among the 10 target areas of the Redevelopment Plan, any given transit route or line would receive a fraction of these ridership levels. Projected cumulative and plan-related transit demand could cause additional crowding of BART service. The approximate 200 additional riders due to implementation of the Redevelopment Plan represents less than a 0.2 percent increase in existing BART peak ridership. When arrival and departure times of events at the Coliseum coincide with peak commute travel times, added ridership due to the Redevelopment Plan would aggravate BART crowding.

Local carbon monoxide conditions are predicted to be less-than-significant with cumulative and plan-related emissions. Regional air quality due to nitrogen oxides is projected to worsen and then improve as measures are implemented to control vehicular emissions, encourage ridesharing and transit use, and reduce pollution from industry and other sources. Nonetheless, the regional air basin is not expected to attain federal and State air quality standards for certain pollutants within the time frame mandated by law. Cumulative air quality impacts of nitrogen oxides would be significant because the region would not be able to meet air quality standards.

One roadway segment would result in a noticeable, but not significant, noise increase due to cumulative development (more than 3 dBA and less than 4 dBA). If more than one construction project were to occur at the same time in proximity to another in the study area, there could be cumulative short-term noise effects from construction equipment.

Cumulatively, development in areas within and outside of the Coliseum Redevelopment Area would potentially add opportunities for contact with new sources of materials. With cumulative development, there would be fewer soil and groundwater effects than with the Redevelopment Plan due to less construction. There would also be less buffering between conflicting land uses (industrial and residential) and thus more opportunity for significant effects. In addition, with cumulative development alone, there would be fewer beneficial effects of the long-term reduction of hazardous waste in the study area due to clean-up activities under the Redevelopment Plan.

The proposed Redevelopment Plan would contribute to increased hazardous waste generation in California. Cumulative hazardous waste generation from the study area and the region would exacerbate an existing problem and create a cumulative impact that would be significant with or without implementation of the Redevelopment Plan.

Cumulatively, the Bay Area is subject to varying degrees of hazard from local geologic conditions, such as settlement, landslides, erosion, and seismic shaking. The most recognizable regional impact is earthquake damage that is projected to occur due to major earthquakes on the San Andreas and Hayward Faults. Modern building codes are intended

to minimize the risk of structural collapse and loss of life, but major damage and harm to humans could still occur on a widespread basis with cumulative development.

Cumulatively, the Redevelopment Plan would contribute runoff pollutants to the San Leandro and San Francisco Bays, but would also provide opportunities for cleanup of polluted sites and regulated operations of new construction and development activities, which would be required to meet Best Management Practices. Flood control facilities could be required elsewhere in the City for cumulative development.

Cumulatively, development around the Bay shore has had and would have a significant impact on the biotic resources of the region, and any additional development of important habitat would be a significant impact.

There are a number of important archaeological resources located in the East Bay and within the study area. Given the built-up nature of the Coliseum Redevelopment Area, cumulative impacts within the study area would be indistinguishable from Redevelopment Plan-related impacts. The proposed Redevelopment Plan could result in the direct demolition or alteration of historic resources (whether identified as such or not) and indirect influence on the context of historic resources. Similar impacts are occurring throughout the region, and will continue during the life of the Redevelopment Plan. These cumulative impacts could be significant.

The cumulative increase in annual energy consumption would be approximately 95 million kWh, 565 million cubic feet of natural gas, and 6.4 million gallons of gasoline/diesel fuel. In terms of Btus energy consumption would increase by approximately 2,500 billion Btu, which would represent about a 26 percent increase over existing energy consumption. Cumulative and Redevelopment Plan-related growth would cause energy consumption to increase by approximately 3,750 billion Btu per year. This use of energy within the study area would be energy-efficient and new construction would comply with current state and local standards for energy efficiency. The cumulative increase in energy, while adverse, would not be significant if energy-conserving measures were required for implementation of all development within the study area.

Cumulative development within the East Bay Municipal Utility District (EBMUD) service area has been addressed in its master plan and policy statements regarding expanding water storage, maintaining water quality, and encouraging water conservation and recycling. No significant cumulative impact to water service would occur. Cumulative growth would add to the treatment burden, but would be expected to be served within the overall plan for the City. Collection and disposal services would not be adversely affected by Redevelopment Plan-related growth or cumulative growth, assuming waste diversion tactics are effective.

Cumulative growth throughout the city could result in significant impacts to police services if funding continues to be an issue. Fire protection services are constrained by budget concerns, and growth due to the Redevelopment Plan and cumulatively throughout the city may result in reduced service levels. Response times are generally within acceptable standards, but equipment and staffing may be stretched further to meet demands. Emergency medical service is provided on a first-response basis by the Oakland Fire Department, with transport to hospitals provided by American Medical Response West. American Medical Response West is required to have a strategic plan for providing service within certain time limits, and so deploys ambulances throughout the City to respond to 911 calls.

Schools in the Coliseum Redevelopment Area are, on average, under capacity. The District expects to address local crowding problems through the use of portable classrooms, shifting students to under-enrolled schools, and implementing a comprehensive grade reconfiguration program.

Cumulative growth within the City could result in on-going deficiencies in park and recreation opportunities.

GROWTH-INDUCING EFFECTS

The proposed Coliseum Redevelopment Plan would intensify residential, commercial and industrial development within the Coliseum Redevelopment Area. Most of the development would occur in 10 target areas, with a substantial part of the remaining development occurring along the East 14th Street corridor. Job growth would occur due to job training programs, business retention and expansion programs, and relocation inducement for

businesses from elsewhere in the State. Housing would be rehabilitated and developed at target sites, primarily at the Fruitvale BART Station and along East 14th Street. Transit facilities would also be enhanced with a multimodal facility near the Coliseum BART Station, which could spur additional development in the area.

All of this activity would be growth inducing within the Coliseum Redevelopment Area. Additional growth could occur in surrounding areas as a result of spillover effects; however the primary goal of the Plan is to induce investment and growth in an area that has become blighted and underutilized. Therefore, this would be a beneficial effect of the Plan.

ALTERNATIVES

No Project Alternative

Under the No Project Alternative, new and expanded commercial and industrial growth, and new housing development would take place without the benefit of the proposed Redevelopment Plan. Additional business growth would still be created within the study area; however, it would be created without the business incentives as provided by the proposed Redevelopment Plan. Little additional housing would be anticipated to occur without the Redevelopment Plan and there would be more blight than with the No Project Alternative. The No-Project Alternative would likely have more land use conflicts than with the Plan. Under the No Project Alternative, job growth due to the proposed Redevelopment Plan would decrease by about 3,610 to 5,000 employees and new housing units would decrease by about 280 to 700 units.

The environmental impacts resulting from implementation of the proposed Coliseum Area Redevelopment Plan would, generally, be reduced if the Plan were not implemented. The issue areas which would likely experience fewer impacts than those under the proposed Redevelopment Plan include: employment and population, traffic, air quality, noise, hazardous materials and wastes, hydrology and water quality, biotic resources, cultural resources, energy; and public services and utilities. However, this alternative would provide less remediation of contaminated sites, and so the beneficial long-term effects of cleaning up the study area would be reduced. There would also be fewer improvements to the

infrastructure with this alternative than with the Redevelopment Plan. There would not be Plan-related significant effects due to nitrogen oxide emissions with the No Project Alternative.

The No Project Alternative is rejected because it would not meet the intended goals of the proposed Redevelopment Plan, which would be to retain, revitalize and expand business and housing activity in the study area, to create jobs for disadvantaged individuals, to provide housing, to reduce blight, and to reduce industrial/residential conflicts.

No Residential Development Alternative

This Alternative would be identical to the Redevelopment Plan except that strategies and actions to remove blight from residential neighborhoods would not be adopted or implemented.

There would be no net new housing units due to this alternative compared to 280 to 700 new housing units with the Redevelopment Plan. There would be the same amount of net new retail, office and industrial space as with the Redevelopment Plan. Job growth would be the same as with the Redevelopment Plan and there would be fewer residents than with the Redevelopment Plan. No beneficial effects due to housing development would occur as would with the Redevelopment Plan. Conflicts of new housing with existing industrial uses would not occur.

There would be about four percent fewer total and p.m. peak hour trips in the study area due to no new residential units. There would be about four percent fewer emissions of carbon monoxide, hydrocarbons, nitrogen oxides and other air pollutants with this alternative compared to the project. This alternative would contribute to significant regional nitrogen oxide effects, as would the project, although to a lesser extent. This alternative would result in a corresponding decrease in noise effects due to the traffic decrease compared to the project. As with the Redevelopment Plan, there would be no significant noise effects with this Alternative.

There would be about 15 percent less energy consumed for construction with this Alternative compared to the project. There would be about 25 percent less energy consumed for operation of this Alternative.

The hydrologic impacts of this Alternative would be similar to, but could be lesser in scale than those of the Redevelopment Plan. The extent of pollutant runoff and siltation would be less under this Alternative.

The potential to encounter additional hazardous materials sites due to development or expansion of businesses within the study area would be same as with the Redevelopment Plan. There would be the same improvements for handling hazardous materials as with the Redevelopment Plan. The difference between the effects for the Alternative and the Redevelopment Plan would be negligible because most hazardous material sites are in industrial areas.

Because there are no open creek channels or sloughs in the area that would be developed with residential uses under the Plan, there would be no expected change in impacts to biotic resources of this Alternative.

Impacts to archaeological resources would be expected to be less under this Alternative because there would be less new development with subsurface excavation that would be expected to occur. Impacts to historic and architectural resources would be similar to those of the Plan although impacts to historic structures would be anticipated to be less under this Alternative.

This alternative would generate less demand for potable water supplies, and generate smaller quantities of wastewater and solid waste than would the Plan. This Alternative would generate less demand for police, fire, emergency medical services, parks and schools than would the Redevelopment Plan.

This Alternative is rejected by the City because it would not remove blight from residential areas.

Environmentally Superior Alternative

The No Residential Alternative in conjunction with mitigation measures identified for the Coliseum Area Redevelopment Plan would be the Environmentally Superior Alternative.

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
4.1 Policy Conformity			
4.1-1: The Plan would generally be consistent with the <i>City General Plan</i> , in the areas of Jobs and Employment, Housing, Land Use, Circulation and Noise.	Less Than Significant	None Required	Not Applicable
4.1-2: The Plan does not make specific provision for shoreline access. Implementation of the Plan could cause conflicts with the City Land Use Element of the City General Plan, BCDC Bay Plan, and EBRPD Master Plan, if access issues were not addressed by future development projects. Development of underdeveloped land in EBMUD's jurisdiction could conflict with the Civic and Open Space Uses Element.	Less Than Significant	None Required (See section 4.1.4 of the EIR for measures to further reduce less-than-significant effects.)	Not Applicable
4.1-3: The Coliseum Redevelopment Plan would provide opportunities for business retention, commercial revitalization and job training programs, and housing development and rehabilitation programs that could be in competition with other, existing programs.	Less Than Significant	None Required (See section 4.1.4 of the EIR for measures to further reduce less-than-significant effects.)	Not Applicable
4.2 Land Use			
4.2-1: Plan implementation would include areawide programs such as rezoning, buffering, transportation/public facility/infrastructure improvements, housing construction and rehabilitation, home ownership, and efforts that would reduce blight and would benefit the area's land use compatibility and maintenance. These programs would alter the land use character, patterns and density in the study area.	Less Than Significant	None Required	Not Applicable
4.2-2: The Coliseum Redevelopment Area, especially within target areas, would be subject to varying levels of new development (retail, office, industrial and housing). In general, this would be beneficial to the area by removing blighted conditions and increasing employment, tax revenue, and investment in the community.	Less Than Significant	None Required	Not Applicable
4.2-3: The Coliseum BART Station Target Area and its vicinity could be subject to significant impacts due to intermodal and commercial development near housing.	Significant	Development at the Coliseum BART Station target area should be evaluated at a project-specific level for possible land use impacts, especially regarding intermodal facility and commercial impacts on residences.	Less Than Significant

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
4.2-3: (Continued)		<p>In addition to repaving roadways in the 81st Avenue Target Area, the Redevelopment Plan should provide pedestrian access between businesses on 81st Avenue and the Coliseum BART Station.</p> <p>The Office of Employment and Economic Development (OEDE) should work with BART, Caltrans and the Port of Oakland concerning the BART Oakland Airport Intermodal connector project, to ensure that the proposed alignment, station designs, and potential intermediate station locations are compatible with the proposed Redevelopment Plan.</p>	
4.2-4: Implementation of the Plan would improve the overall visual character of the area, through landscaping, code enforcement, rezoning, and rehabilitation. Other existing visual issues, specifically billboards and signs, would not be addressed by the Plan.	Less Than Significant	None Required (See section 4.2.4 of the EIR for measures to further reduce less-than-significant effects.)	Not Applicable
4.2-5: The Plan would require rezoning at seven of the ten target areas considered in this EIR, in order to allow the proposed uses and implement plan programs for buffering, design review, etc.	Less Than Significant	None Required	Not Applicable
4.3 Population, Employment and Housing			
4.3-1: Implementation of the Redevelopment Plan would create approximately 5,000 net new jobs and add between 590 to 1,900 residents within the City of Oakland. The Fruitvale Avenue Target Area would have the highest concentration of increased population.	Less Than Significant	None Required	Not Applicable
4.3-2: Total secondary employment from the Redevelopment Plan would be about 1,935.	Less Than Significant	None Required	Not Applicable
4.3-3: The Redevelopment Plan would provide 700 housing units.	Less Than Significant	None Required	Not Applicable
4.3-4: The jobs-to-housing balance would increase from 1.91 to 1.22.	Less Than Significant	None Required	Not Applicable
4.3-5: Business and residential replacement would have indirect effects on low-income residents and long-term manufacturing jobs.	Less Than Significant	None Required	Not Applicable

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
4.4 Traffic			
4.4-1: No new roadway segments become significant (degrade below level of service D) or degrade from LOS E to LOS F as a result of the Redevelopment Plan.	Less Than Significant	None Required (See measures in Section 4.4.4 to further reduce less-than-significant impacts to roadways.)	Not Applicable
4.4-2: Parking would be supplied within the study area.	Less Than Significant	None Required (See Section 4.4.4 of the EIR for measures to further reduce less-than-significant effects.)	Not Applicable
4.4-3: Projected cumulative and plan-related transit demand could cause additional crowding of bus service. About 400 additional AC Transit riders would use the bus due to implementation of the Redevelopment Plan. When spread among the 10 target areas of the Redevelopment Plan, any given transit route or line would receive a fraction of these ridership levels.	Less Than Significant	None Required (See Section 4.4.4 of the EIR for measures to further reduce less-than-significant effects.)	Not Applicable
4.4-4: Projected cumulative and plan-related transit demand could cause additional crowding of BART service. The approximate 200 additional riders due to implementation of the Redevelopment Plan represents less than a 0.2 percent increase in existing BART peak ridership. When arrival and departure times of events at the Coliseum coincide with peak commute travel times, added ridership due to the Redevelopment Plan would aggravate BART crowding.	Less Than Significant	None Required (See Section 4.4.4 of the EIR for measures to further reduce less-than-significant effects.)	Not Applicable
4.5 Air Quality			
4.5-1: Particulate matter small enough to cause respiratory problems in susceptible persons could be generated at significant levels during demolition, excavation, and grading at large construction sites or as a result of numerous smaller projects.	Significant	A dust control plan should be implemented for any demolition or new construction projects within the plan area, including regular watering of disturbed soil (at least twice per day), covering haul truck loads or maintaining two feet of freeboard in trucks loaded with dirt or debris, hydro-seeding bare land if it is to be left undeveloped for longer than 60 days, and cleaning access roadways for a distance of 250 feet in each direction at the conclusion of each workday to minimize resuspension of dust.	Less Than Significant

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p><u>4.5-2:</u> Construction equipment could be in use at one large site or numerous smaller construction sites in concentrated activity that could result in exhaust emissions greater than significance thresholds. This would be a temporary impact, since most activity would be spread over 15 to 40 years.</p>	<p>Significant</p>	<p>Equipment and truck exhaust emissions should be minimized by performing low-NOx tune-ups before arrival at the site, and by limiting idling time to five minutes while waiting to load or unload materials.</p> <p>Contractors should be encouraged to participate in rideshare programs, provide off-street parking for construction workers, and minimize deliveries during peak hours.</p>	<p>Less Than Significant</p>
<p><u>4.5-3:</u> Excavation during construction could involve exposure of hazardous materials found in soil and groundwater as a result of leaking tanks or other sources. Remediation would be conducted in coordination with regulatory agencies. The Bay Area Air Quality Management District (BAAQMD) would have authority to impose emission control measures and specific requirements to protect ambient air quality.</p>	<p>Less Than Significant</p>	<p>None Required</p> <p>(See Section 4.5.4 of the EIR for a measure to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>
<p><u>4.5-4:</u> Plan-related traffic would result in regional emissions of nitrogen oxides in excess (violation) of BAAQMD thresholds. Benefits of providing local employment for City residents, which could reduce regional vehicle trips, would only partially compensate for this impact.</p>	<p>Significant</p>	<p>The City of Oakland should require implementation of Transportation Control Measures (TCM) as part of the Redevelopment Plan. The City should develop, coordinate, and implement measures that focus on the specific geographic, land use, and employment patterns found in the area.</p> <p>The City should participate in the Alameda County Congestion Management Agency corridor management plan.</p>	<p>Significant</p>
<p><u>4.5-5:</u> Preliminary modeling of the local roadway segments with future traffic and with plan-generated traffic indicate that carbon monoxide hot spots would occur, with or without implementation of the Redevelopment Plan.</p>	<p>Less Than Significant</p>	<p>None Required</p>	<p>Not Applicable</p>
<p><u>4.5-6:</u> Industrial expansion within the Redevelopment Area could result in additional regional pollutant emissions. These emissions are regulated by the BAAQMD, and it is likely that older facilities would be replaced with newer technology and cleaner emissions.</p>	<p>Less Than Significant</p>	<p>None Required</p> <p>(See Section 4.5.4 for a measure to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
4.6 Noise			
<p><u>4.6-1:</u> Construction noise would result in temporary disturbance of adjacent uses.</p>	Significant	<p>Measures should include:</p> <ul style="list-style-type: none"> • utilize best available noise control techniques (e.g., improved mufflers, equipment redesign, use of silencers, ducts, and engine enclosures) on construction equipment and trucks; • limit noisy construction operation from 7:00 a.m. to 7:00 p.m., Monday through Friday; • locate stationary noise sources as far from residences as possible, muffle and/or enclose within temporary sheds; • use hydraulically or electrically powered impact tools whenever possible. 	Less Than Significant
<p><u>4.6-2:</u> Operational noise effects would be greatest where existing residential uses or sensitive receptors are located next to a proposed development or would be located adjacent to an existing industrial development.</p>	Less Than Significant	<p>None Required (See Section 4.6.4 for a measure to further reduce less-than-significant effects.)</p>	Not Applicable
<p><u>4.6-3:</u> Future noise levels would increase by less than 3 dBA due to Redevelopment Plan-related traffic.</p>	Less Than Significant	<p>None Required</p>	Not Applicable
<p><u>4.6-4:</u> There could be noise compatibility problems concerns for any new residential uses that were to be constructed in proximity to major roadways or industrial facilities. For existing residential uses that are adjacent to major roadways, traffic increases could exacerbate noise effects.</p>	Less Than Significant	<p>None Required (See Section 4.6.4 for a measure to further reduce less-than-significant effects.)</p>	Not Applicable

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p>4.7 Hazardous Materials</p> <p><u>4.7-1:</u> Current and future industrial activity within the redevelopment area could expose neighboring land uses and the environment to hazardous substances such as solvents, degreasers, and process chemicals. Implementation of the Redevelopment Plan would encourage increased activity from the industrial and commercial sectors, as well as locate new residences and retail operators in the area. Spills, accumulated waste, earthquakes, fires and explosions, transportation accidents, releases to the air, and other mishaps could result in exposure to hazardous and toxic levels. In addition, employees could be exposed to hazardous conditions at the work place. Utility construction as part of Plan implementation could also expose contaminated materials during excavation.</p>	<p>Potentially Significant</p>	<p>Prior to introduction of new business development and industrial activity in the Coliseum Redevelopment Area, the City should review design plans for each proposed new business development to ensure that the approved goals, objectives, and guidelines in the <i>Alameda County Hazardous Waste Management Plan</i> are satisfied by the project. Documentation of that review should be added to the administrative record.</p> <p>Buffering provisions of the Redevelopment Plan should be implemented with particular emphasis on separating hazardous material users/producers from sensitive receptors such as residences and schools.</p> <p>All new hazardous material storage and handling areas should be situated on sealed, reinforced concrete surfaces (inside and outside) to minimize the possibility of environmental contamination in the event of an accidental spill. Areas where hazardous liquids are handled should be enclosed by walls or berms. A roof should also cover all loading, unloading, and handling areas to minimize any rain or moisture coming into contact with hazardous substances. Prior to approval of individual new development, the Oakland Fire Department should examine design plans for hazardous substance storage areas during its Fire Code / Building Plan review to ensure compliance with this provision. Documentation of this review shall be added to the administrative record.</p>	<p>Less Than Significant</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p><u>4.7-1:</u> (Continued)</p>		<p>The City of Oakland should encourage proper handling of hazardous materials by new businesses in the Coliseum Redevelopment Area. In compliance with State law (SB 14), new businesses that handle enough hazardous materials to generate wastes in reportable quantities (12,000 kilograms per year of hazardous waste or 12 kilograms per year of extremely hazardous waste) shall be required to have approved Source Reduction Evaluation and Review Plans on file. Qualifying new industries should prepare such plans and file them with the Alameda County Department of Environmental Health by September 1 following start up of business operations. Each September, the City should contact the Department of Environmental Health to confirm that new businesses have filed their source reduction plans, if applicable. Documentation of the annual review should be added to the administrative record.</p> <p>Each September, the City Office of Planning and Building should contact the Fire Department to confirm that permitted new businesses in the Coliseum Redevelopment Area have prepared and filed Hazardous Materials Management Plans as directed. Documentation to that effect should be added to the administrative record.</p> <p>Each September, the City should contact the Alameda County Department of Environmental Health to confirm that new businesses in the program area that have been directed to prepare a Risk Management and Prevention Plan have done so. Documentation to that effect should be added to the administrative record. Once per year, the City should contact the County to check that new hazardous waste generators in the Coliseum Redevelopment Area have been permitted and that monitoring records for hazardous waste storage areas are in order. Documentation to that effect should be added to the administrative record.</p>	

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p><u>4.7-1:</u> (Continued)</p>		<p>All storm water runoff (and runoff from fire suppression activities) that would come from hazardous substance handling areas or enters hazardous substance handling areas should be collected and tested prior to discharge. Sumps should be built to contain any runoff collected; these would also contain any spills and mixtures of runoff and spills. Sumps could be used to hold runoff until it could be treated and either discharged to the sewer or disposed of as hazardous waste.</p>	
<p><u>4.7-2:</u> Remodeling or demolition of existing structures could expose people to hazardous materials contained at the site or in building materials, such as asbestos, transformers, fluorescent lights and ballast, and lead based paints. Occupying buildings in deteriorated conditions could also expose people to asbestos or lead-based paint. Over the long term, renovation and blight removal would have a beneficial effect on the likelihood of exposure to hazardous materials in buildings.</p>	<p>Potentially Significant</p>	<p>All buildings proposed for demolition or major renovation should be inspected by a qualified inspector to determine the appropriate abatement procedures, including containment or removal of asbestos, PCBs, lead and mercury.</p> <p>Health and site specific safety plans should be prepared and adhered to. The health and safety plans would need to be prepared by a Certified Industrial Hygienist and meet the requirements of federal, state and local environmental and worker safety laws. Specific information to be provided in the plans includes identification of contaminants, potential hazards, material handling procedures, dust suppression methods, personal protection clothing and devices, controlled access to the site, health and safety training requirements, monitoring equipment to be used during construction to verify health and safety of the workers and the public, measures to protect public health and safety, and emergency response procedures.</p>	<p>Less Than Significant</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p>4.7-3: Numerous sites containing or suspected to contain groundwater and soil contamination, primarily from leaking underground storage tanks, have been identified within the Coliseum Redevelopment Area. If abandoned or no longer used underground storage tanks are identified, there is a well-established regulatory framework for closure of these tanks. Following these guidelines would reduce impacts from underground storage tank closure to less than significant. Additional sources of contamination could have occurred historically due to less stringent regulation of handling, storage and management practices. Clean up operations could also result in temporary exposure to soil, water and air contamination.</p>	<p>Significant</p>	<p>Phase I surveys of development sites should be conducted to determine the official status regarding suspected contamination, and a detailed site history should be prepared to determine the potential for previously unknown land uses that could have resulted in contamination.</p> <p>Additional studies, such as a Preliminary Endangerment Assessment, Remedial Investigation / Feasibility Study, and Remedial Action Plan may be required and should be conducted in compliance with all regulatory requirements.</p> <p>Site investigations should include the collection of soil and groundwater samples for appropriate laboratory analyses, depending on the historical uses at the site. Sampling would extend to depths expected for excavation at a minimum. Reports of all sampling and analyses should be provided to the Alameda County Health Care Services Agency, Department of Environmental Health, the Regional Water Quality Control Board, or the Department of Toxic Substances Control, as appropriate.</p>	<p>Less Than Significant</p>
<p>4.7-4: Soil remediation, remediation for contaminated groundwater, and excavation and dewatering of contaminated areas as part of remediation could directly or indirectly expose workers, the public, or the environment to potential health hazards. There is a regulatory framework in place for site remediation.</p>	<p>Less Than Significant</p>	<p>None Required</p> <p>(See Section 4.7.4 for a measure to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p>4.8 Geology and Seismicity</p> <p>4.8-1: Construction of development projects, utilities, and roadways in areas of mud and fill could result in differential settlement, causing structural distress and/or service interruption.</p>	<p>Significant</p>	<p>Detailed and extensive site-specific investigations should be conducted for major projects and recommendations followed for minimizing the potential for damage due to weak soils, including measures such as compacting the soil, utilizing appropriate foundation designs, and/or rehabilitating existing foundations to support renovated projects.</p> <p>Specific mitigation is as follows:</p> <p>Preloading is one of the more common mitigation options for weak soils. This entails temporarily placing a large, relatively heavy mound of soil on the construction site with the objective of causing the soil to undergo most of its ultimate settlement before a building is erected. Dynamic deep compaction, which entails systematically tamping the soil in a grid pattern within the planned building area, is a less common but effective mitigation method for weak soils above the water table. The tamping is accomplished with a heavy weight dropped repeatedly from a height of 100 feet or so by a crane. Densification of saturated soils sometimes is accomplished by means of construction of stone columns. In some cases, especially where fill materials have been loosely dumped into place, the loose materials may be removed preparatory to being returned to the site for placement in relatively thin compacted "lifts."</p>	<p>Less Than Significant</p>
<p>4.9. Hydrology & Water</p> <p>4.9-1: New development and expansion of businesses and housing would marginally increase runoff from the area, which is already highly urbanized. No significant impacts to existing storm drain facilities are anticipated.</p>	<p>Less Than Significant</p>	<p>None Required</p> <p>On- and off-site improvements may be required on a case-by-case basis to ensure continued flood control for new development and adjacent uses.</p>	<p>Not Applicable</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p>4.9-2: New development, including grading, excavation, demolition, and expanded or new operations could increase pollutant loads in surface runoff. Erosion from construction sites could contribute soil particles, nutrients, hydrocarbons, and trace metals to the storm drain, sloughs and Bay. Hazardous materials may also be encountered during excavation and dewatering for foundations, site remediation, infrastructure installation, and other activities which may affect surface and groundwater quality.</p>	<p>Significant</p>	<p>All new development should prepare and implement Storm Water Pollution Prevention Plans incorporating Best Management Practices during and after construction.</p> <p>The Storm Water Pollution Prevention Plan should be prepared and submitted for review by the Regional Water Quality Control Board (RWQCB) before the start of construction.</p> <p>All development proposals in the Coliseum Redevelopment Plan Area should incorporate the measures indicated in the Best Management Practices for Construction Activity handbook as specified by the Nonpoint Source Pollution Control Program. The Best Management Practices include measures guiding the management and operation of construction sites to control and minimize the potential contribution of pollutants to storm runoff from these areas. These measures address procedures for controlling erosion and sedimentation, and managing all aspects of the construction process to ensure thorough control of potential water pollution sources. The Best Management Practice Handbook also addresses the preparation of a storm water pollution prevention plan, the selection of best management practices, and the monitoring process for compliance with the Storm Water Pollution Prevention Plan.</p> <p>The following measures are identified for inclusion in the Storm Water Pollution Prevention Plans to minimize the potential adverse water quality impacts of the project:</p> <ul style="list-style-type: none"> • Remove surface cover from soils immediately prior to construction. Uncover soils only where required for construction activities. • Cover stockpiles of soil. • Install silt fences. 	<p>Less Than Significant</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
4.9.2: (Continued)		<p>The following measures are required by the City as standard conditions of approval:</p> <ul style="list-style-type: none"> • That no grading shall occur without a valid grading permit issued by the Office of Planning and Building and that prior to the issuance of any grading permit, a drainage plan and an erosion control plan shall be approved by the Office of Planning and Building. All graded slopes should be planted to prevent erosion according to an erosion control plan approved prior to the issuance of any grading permit. • That no grading shall occur within the period of October 15 through April 15 unless specifically authorized by Engineering Services. • That any project which would not require a grading permit but would result in disturbance of the ground will require installation of appropriate remedial measures to assure water runoff would not transport sediments to the storm water system. 	
4.9-3: Increased activity levels at developed sites could increase the amount of wastes washed into the storm drains from parking lots and potential spills of hazardous materials.	Less Than Significant	None Required (See Section 4.9.4 for a measure to further reduce less-than-significant effects.)	Not Applicable

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p>4.10 Biotic Resources</p> <p><u>4.10-1:</u> New construction resulting from implementation of the Plan could have direct and indirect effects on sensitive habitat and species present in the area, including at target areas bordering San Leandro Bay and at Arrowhead Marsh, Damon Slough, East Creek Slough, and San Leandro Creek. Direct effects include site disturbance, vegetation removal, and waterway modifications. Indirect effects include erosion and runoff to streams containing pollutants. Species of concern include: soft bird's-beak, Point Reyes bird's-beak, Delta tule pea, California clapper rail, black rail, burrowing owl, salt marsh harvest mouse, California brackish water snail, and San Francisco fork-tailed damselfly. Habitat of concern includes: salt marsh, brackishwater marsh, dense pickleweed, and tidal streams/sloughs.</p>	<p>Significant</p>	<p>Project-specific surveys should be required prior to construction to determine the presence or absence of special status species. These studies would provide information to assess project specific impacts to vegetation and wildlife, such as channeling of sloughs or creeks, loss of wetland habitat, or increasing non-native species, and allow the modification of project plans to avoid sensitive species or to provide a sufficient buffer for them.</p> <p>Wetland mitigation plans should be prepared according to U.S. Army Corps of Engineers Guidelines for projects that would impact "Waters of the U.S." and wetland habitats.</p> <p>A minimum buffer of 50 feet along major water courses should be established from the top of the slough banks on both sides of the sloughs and their tributaries within the Coliseum Redevelopment Area, within which development (including construction, storage, and vehicular traffic) should be prohibited. Night lighting should be directed away from natural areas.</p> <p>Developers of projects near wetlands in the Coliseum Redevelopment Area should construct sediment detention basins, and install oil and grease traps in storm drain facilities.</p> <p>During construction, developers of projects near wetlands in the study area should use sediment retention devices such as hay bales and/or silt fences, and possibly restrict grading operations to the dry season when there would be the potential to adversely impact the wetlands.</p> <p>Monitors should be on-site during construction in sensitive areas.</p>	<p>Less Than Significant</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
4.10-1: (Continued)		Vehicles should be restricted to designated roads and parking areas in proximity to surface waters and wetlands, and not allowed within the designated buffer.	
4.10-2: Direct and indirect impacts to common vegetation and wildlife species would occur, but would be less than significant. In some cases, impacts to common species may be considered on a case-by-case basis due to the vegetation's value as landscaping and general environmental quality.	Less Than Significant	No mitigation required. Replacement vegetation may be considered as part of individual projects.	Not Applicable
4.11 Cultural Resources			
4.11-1: Archaeological sites located within any of the target areas would be the most susceptible to development impacts. These areas include CA-ALA-20, -50, and -321. In addition, there are three archaeological sites (CA-ALA-52, -322 and -323) within the remainder area (not in a target area) that would be sensitive to development impacts.	Significant	<p>Focused evaluation of proposed subsurface land alteration activities in the vicinity of recorded archaeological resources, and effects on cultural deposits should be conducted. Field review of the specific project area(s) may be required. A determination of effect on specific cultural resources and a determination of the importance of the affected resources would be required. In circumstances where it is determined that potentially significant archaeological deposits would be directly impacted, a limited subsurface archaeological testing program should be conducted.</p> <p>In circumstances where intact, important archaeological deposits would be disturbed or destroyed, a pre-construction data recovery program should be conducted. This measure would be appropriate if the potential significant of the deposits has been made and the site(s) could not be avoided by redesign or relocation of the project.</p> <p>Data recovery programs of this nature should be undertaken by a qualified professional archaeologist, knowledgeable in the prehistory of the region. The specific nature and extent of the excavations should be developed in response to the circumstances of potential impacts, in accordance with prevailing professional standards and within the context of a detailed research design.</p>	Less Than Significant

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p>4.11-1: (Continued)</p>		<p>The California Native American Heritage Commission (NAHC) should be consulted during all phases of subsurface archaeological investigations to identify individuals and groups that may have specific project-related concerns. Procedures should comply with procedures set forth by the Native American Heritage Commission regarding impacts to Native American Burial remains. All data recovery programs should result in comprehensive technical reports that meet prevailing professional standards.</p>	
<p>4.11-2: Subsurface construction activities within archaeologically sensitive areas of the Coliseum Redevelopment Area, especially near historic waterways, could lead to the discovery of previously unknown prehistoric cultural deposits that could be impacted by construction activities.</p>	<p>Significant</p>	<p>In the event that unknown subsurface archaeological deposits or features are encountered anywhere in the Coliseum Redevelopment Area, work in the immediate vicinity of the archaeological find should be halted, a professional archaeologist consulted and a recovery plan or an appropriate course of action developed in consultation with the State Historic Preservation Officer and the City. All such procedures should be conducted within the context of <i>CEQA Guidelines</i> Appendix K cultural resource management requirements.</p>	<p>Less Than Significant</p>
<p>4.11-3: Increased employment and expansion or relocation of existing businesses and the development of individual projects within the study area could require demolition, relocation, alteration, or adaptive reuse of identified historic resources. In some cases, alteration could be beneficial if changes were made to restore previously altered properties and preserve the structural integrity of deteriorated sites.</p>	<p>Significant</p>	<p>Prior to major development within the Coliseum Redevelopment Area, that is identified as containing a potentially important historical structure, the individual project applicant should prepare and present to the Director of City Planning a historic resources evaluation for the proposed project site, which should include consultation with the State Office of Historic Preservation, the Oakland Cultural Heritage Survey, and the Landmarks Preservation Advisory Board.</p> <p>Prior to major development that is not within the area covered by the Citywide Preliminary Survey, the individual project developer should have a survey of potential historic resources conducted for the proposed project site, which should include a site walk-over and assessment by a historic resources expert determined to have suitable qualifications by the City of Oakland Office of Planning and Building.</p>	<p>Less Than Significant</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p>4.11-3: (Continued)</p>		<p>Development is defined here as:</p> <ul style="list-style-type: none"> Changes to building uses and/or changes in land use or activity; Construction of new buildings; Exterior alterations to existing buildings; Demolition; or An increase in development intensity on a parcel. <p>The Office Planning and Building should be consulted prior to any construction, rehabilitation or infrastructure improvement activities to determine whether any designated or potential architectural or historical resources are located on or near the site. The historic resources evaluation should be reviewed by the Office of Planning and Building at this time. If there are no such resources, the activity may proceed. If this survey and evaluation identifies historic resources on a parcel, mitigation measures identified in this Mitigation Section should be implemented, as appropriate.</p> <p>If the activity would affect a City Landmark or be within an S-7 zone, Design Review is required under the Zoning Regulations. If the activity would affect a property on the Preservation Study List or one which appears to be for City Landmark designation and/or inclusion in an S-7 Zone, the Planning Director should consult with the Landmarks Preservation Advisory Board and the City Planning Commission to determine whether those bodies wish to initiate formal designation and/or rezoning. If the proposed activity involves demolition of a property that is a City Landmark, is in an S-7 Zone, or is on the Preservation Study List, issuance of the demolition permit should be deferred to allow the interested parties to confer and attempt to work out a proposal that would avoid demolition.</p>	

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p><u>4.11-3:</u> (Continued)</p>		<p>If the historic resources survey conducted by the individual project development identifies the project site as a historic property, the developer should demonstrate efforts to the City of Oakland Office of Planning and Building to avoid demolition, relocation or alteration of any identified historic properties when developing the individual project. Redesign of an individual project may be required to successfully implement this mitigation measure, including incorporation of appropriate mitigation measures into the project design using widely accepted standards for historic resources management, such as the <i>Secretary of the Interior's Guidelines for Rehabilitation</i> and the <i>State Historic Building Code Buildingde Co Code</i>.</p> <p>If demolition of the historic property cannot be avoided, the developer of an individual project should demonstrate efforts to relocate the historic property to a location approved by the City of Oakland Office of Planning and Building and the Landmarks Preservation Advisory Board.</p> <p>If relocation of the historic property is not feasible and demolition cannot be avoided, the developer of an individual project should fund and conduct the preparation of documentation in accordance with the Historic American Buildings Survey (HABS). The documentation should be reviewed and approved by the City of Oakland Office of Planning and Building and the Landmarks Preservation Advisory Board.</p>	
<p><u>4.11-4:</u> Implementation of the Plan could adversely affect potential and identified historic buildings and/or districts within the area by diminishing the historic character and/or architectural integrity of the resource. There are no designated properties under either federal or state programs, but city surveys have not covered the entire area.</p>	<p>Significant</p>	<p>Implement measures from 4.11-3, as appropriate.</p>	<p>Less Than Significant</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p>4.11-5: Indirect impacts could occur to historic resources if neighboring new development is out of character with the overall historic fabric.</p>	<p>Significant</p>	<p>Prior to major development within the Coliseum Redevelopment Area, the individual project applicant should prepare and present to the Director of City Planning a historic resources evaluation for the Area of Potential Effect (APE) of the proposed project site. The Area of Potential Effect for a project site should be defined as properties visible from the project site.</p> <p>This historic resources evaluation should include a survey of the Area of Potential Effect conducted by a suitably qualified expert as determined by the City of Oakland Office of Planning and Building. The evaluation should also include consultation with the State Office of Historic Preservation, the Oakland Cultural Heritage Society, and the Landmarks Preservation Advisory Board.</p> <p>The Office of Planning and Building should be consulted prior to any construction, rehabilitation, or infrastructure improvement activities to determine whether any designated or potential architectural or historical resources are located on or near the site. The historic resources evaluation should be reviewed by the Office of Planning and Building at this time. If there are no such resources, the activity may proceed. If this survey and evaluation identifies historic resources on a parcel, mitigation measures identified in this Mitigation Section should be implemented, as appropriate.</p> <p>If the activity would affect a City Landmark or would be within an S-7 Zone, Design Review is required under the Zoning Regulations. If the activity would affect a property on the Preservation Study List or one which appears to be for City Landmark designation and/or inclusion in an S-7 Zone, the Planning Director should consult with the Landmarks Preservation Advisory Board and the City Planning Commission to determine whether those bodies wish to initiate Design Review.</p>	<p>Less Than Significant</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p>4.12 Energy</p> <p><u>4.12-1:</u> New construction due to implementation of the Redevelopment Plan would require 2,861.4 billion Btu of energy.</p>	<p>Significant</p>	<p>The developer of any construction project should be required to turn off idling construction equipment when not in use where doing so would not damage the equipment.</p> <p>Buildings should be designed to utilize solar energy to the extent possible, by ensuring solar access and by properly orienting windows. Building walls and windows should be chosen from the appropriate energy reflecting and absorbing material types for maximum energy conservation.</p> <p>Air distribution systems in structures should be designed to cascade ventilation air from high priority areas to low priority areas before exhausting it, thereby decreasing the volume of ventilation air required.</p> <p>Window systems should be designed and other means should be used to reduce thermal gain and loss, and thus cooling loads, during warm weather and heating loads during cold weather.</p> <p>The total amount of concrete and asphalt paving should be minimized, and vegetation planted.</p> <p>Light-colored architectural treatments of interior surfaces should be used to reflect more light. The use of skylights should also be considered. For exterior lighting, low-sodium lamps should be used.</p> <p>Mechanical systems (i.e. HVAC, or heating, ventilating and cooling) should be controlled using a computer-controlled system for maximum efficiency.</p> <p>Incentives should be provided for developers to investigate the potential for cogeneration technology to be applied to their industrial processing.</p>	<p>Less Than Significant</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p>4.12-2: Development due to the Redevelopment Plan would increase energy consumption by approximately 47.5 million kWh of electricity, 283 million cubic feet of natural gas, and 3.2 million gallons of gasoline/diesel fuel. Total operational energy consumption, including travel-related consumption, would increase by 1,248.5 billion Btu per year. While adverse, the 15 percent energy increase would be due to infill development that would be well served by transit. Given that population will increase in the Bay Area in the future, to intensify development in an urban area would be the most energy-efficient development.</p>	<p>Less Than Significant</p>	<p>None Required (See Mitigation 4.12-1, above, and other measures in Section 4.12.4 of the EIR to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>
<p>4.12-3: There is sufficient existing capacity at existing PG&E substations in the study area to accommodate additional development.</p>	<p>Less Than Significant</p>	<p>None Required</p>	<p>Not Applicable</p>
<p>4.12-4: The Redevelopment Plan would be consistent with the City's goal of promoting land use patterns and travel modes that help reduce energy consumption.</p>	<p>Less Than Significant</p>	<p>None Required</p>	<p>Not Applicable</p>
<p>4.13 Public Utilities</p>			
<p>4.13-1: Implementation of the Plan would incrementally increase water demand and could require upgrading local service lines to meet expanded commercial and industrial demand and fire flow requirements. Improvements would be funded by developers on a case-by-case basis, or by EBMUD as part of routine system upgrades.</p>	<p>Less Than Significant</p>	<p>None Required (See Section 4.13.1 for measures to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>
<p>4.13-2: Implementation of the Plan would incrementally increase generation of wastewater, which could require upgrades to pump stations and collection pipes, and would exceed sub-basin growth projections in some areas. Improvements are planned as part of EBMUD and the City's Inflow/Infiltration Correction Program. Flows could be accommodated within the overall expansion allocation for the area.</p>	<p>Less Than Significant</p>	<p>None Required (See Section 4.13.2 for measures to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>
<p>4.13-3: Implementation of the Plan would incrementally increase the amounts of solid waste generated within the service area of Waste Management of Alameda County. Approximately 18 tons per day would be generated, plus construction and demolition debris and toxic remediation by-products.</p>	<p>Less Than Significant</p>	<p>None Required (See Section 4.13.3 for a measure to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>

TABLE S: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Project-Specific Impact	Significance Prior to Mitigation	Mitigation Measures	Significance After Mitigation
<p>4.14 Public Services</p>			
<p>4.14-1: Increased resident and employee populations would incrementally increase demand for police services, including four new officers and two civilian employees in order to maintain existing service ratios. New job opportunities, development, property rehabilitation, and generally improved conditions could beneficially affect crime in the area. New development would also provide increased tax revenues to support operations.</p>	<p>Less Than Significant</p>	<p>None Required (See Section 4.14.1 for measures to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>
<p>4.14-2: Increased resident and employee populations would incrementally increase demand for fire services. No new staffing or equipment would be required. As with police services, implementation of the Plan could beneficially affect demand for fire protection services by removing blighted conditions.</p>	<p>Less Than Significant</p>	<p>None Required (See Section 4.14.2 for measures to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>
<p>4.14-3: Increased resident and employee populations would incrementally increase the demand for emergency ambulance services.</p>	<p>Less Than Significant</p>	<p>None Required (See Section 4.14.3 for measures to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>
<p>4.14-4: New residential development would increase the population demands on the Oakland Unified School District, and could cause crowding at schools that are currently at or near capacity, such as in the Fruitvale BART Target Area and along the East 14th Street corridor.</p>	<p>Less Than Significant</p>	<p>None Required (See Section 4.14.4 for measures to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>
<p>4.14-5: Increased resident and employee populations would incrementally increase demand on local park facilities, further exacerbating the shortfall in park acreage. However, the Redevelopment Plan also includes provisions for improved landscaping and open space facilities which would provide a net benefit to the area. Increased maintenance demands for the improvements would not be significant.</p>	<p>Less Than Significant</p>	<p>None Required (See Section 4.14.5 for measures to further reduce less-than-significant effects.)</p>	<p>Not Applicable</p>

3.1 PROJECT LOCATION AND PLANNING DISTRICTS

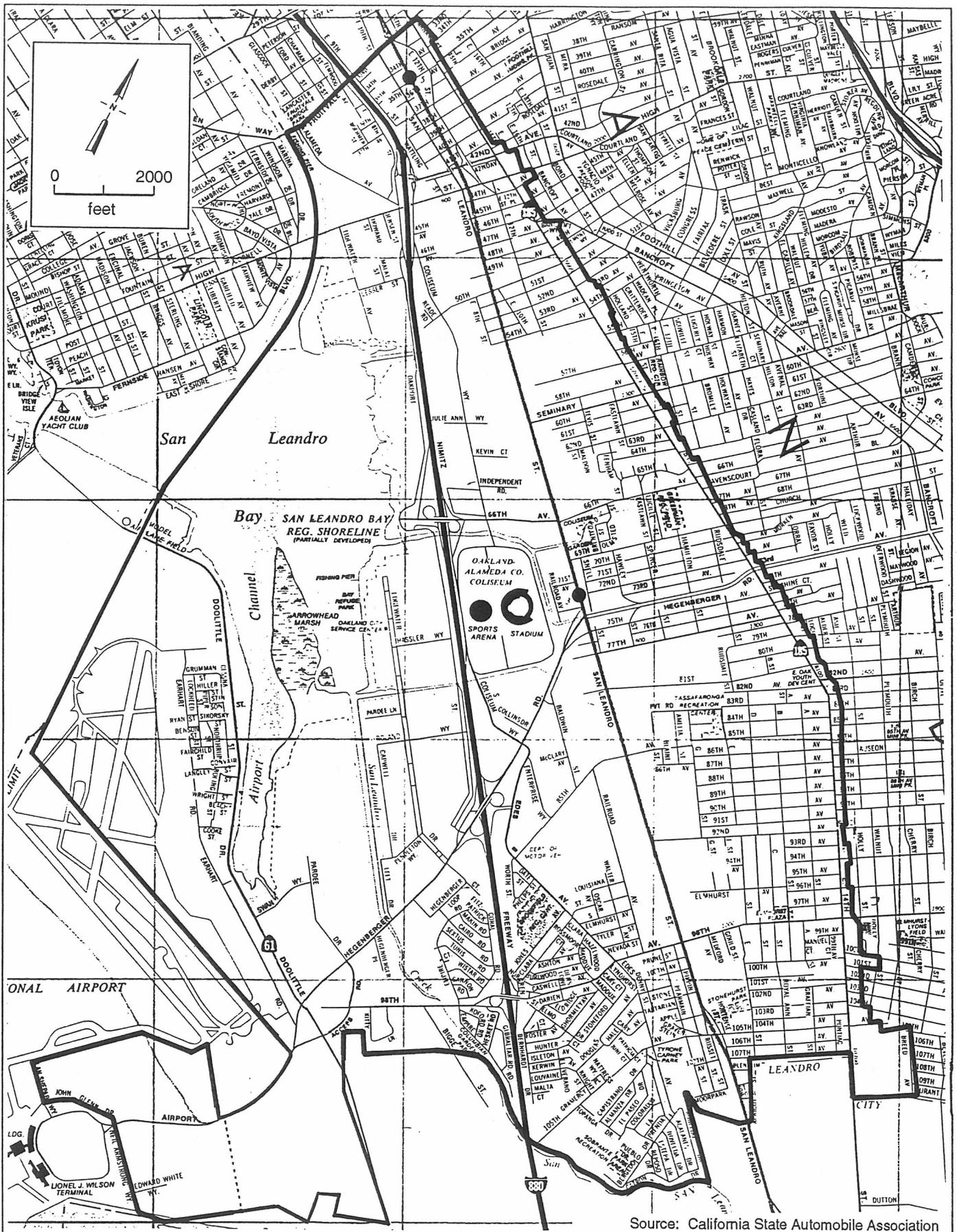
The proposed Coliseum Area Redevelopment Plan area is located in the City of Oakland and encompasses about 6,500 acres around the Oakland Coliseum (see Figure 3-1). This area (Coliseum Redevelopment Area) extends between Fruitvale Avenue and the Oakland / San Leandro city limit, and between East 14th Street and the Metropolitan Oakland International Airport. The Coliseum Redevelopment Area contains seven planning districts, which are shown on Figure 3-2, and are described in the Redevelopment Plan. These districts include: Fruitvale / Central Corridor Planning District, Elmhurst / Central East Corridor Planning District, Edgewater Industrial Planning District, Elmhurst Industrial Planning District, Coliseum/Hegenberger Planning District, Brookfield Planning District, and Airport/Recreation Planning District.

Major transportation facilities in the area include the Oakland to Fremont BART line including the Fruitvale and Coliseum BART stations, Interstate 880 (I-880), the Metropolitan Oakland International Airport, and the Southern Pacific and Union Pacific rail lines. Major north-south roadways include San Leandro Boulevard and East 14th Street. Major east-west roadways include Fruitvale Avenue, High Street, Hegenberger Road/Avenue and 98th Avenue.

3.2 REDEVELOPMENT PLAN ACTIONS AND OBJECTIVES

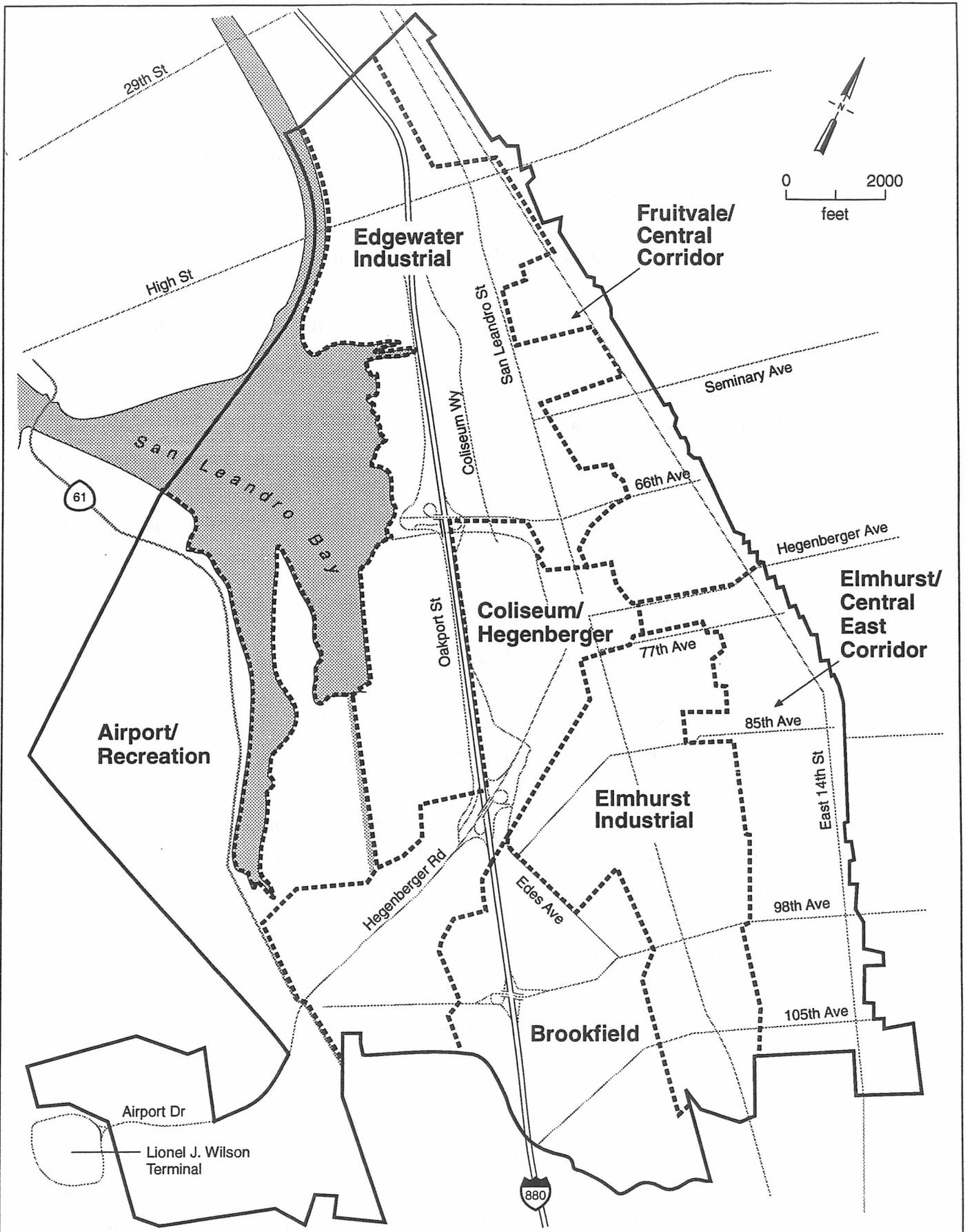
3.2.1 General Objectives/Goals

Blighting factors in the Coliseum Redevelopment Area are both the cause and effect of the downward spiral of economic and physical conditions within the area. This is a situation which would not be expected to be alleviated or reversed by private enterprise actions alone. General objectives and goals of the Coliseum Area Redevelopment Plan include the following:



Source: California State Automobile Association

Project No. 93CO508A	Coliseum Area Redevelopment Plan	PROJECT LOCATION	Figure 3-1
Woodward-Clyde Consultants			



Project No. 93C0508A	Coliseum Area Redevelopment Plan	PLANNING DISTRICTS	Figure 3-2
Woodward-Clyde Consultants			

3.0 Project Description

1. To provide for long-term job training and employment opportunities for Coliseum Redevelopment Area residents.
2. To stimulate home ownership in the Coliseum Redevelopment Area.
3. To improve public safety for people living and working in the Coliseum Redevelopment Area.
4. To improve the quality of the residential environment by assisting new construction, rehabilitation and conservation of living units in the Coliseum Redevelopment Area.
5. To eliminate the land-use conflicts between the residential and industrial edge in the Coliseum Redevelopment Area.
6. To improve transportation, public facilities and infrastructure in residential, commercial and industrial opportunity areas.
7. To abate the most visible deteriorated conditions which effect the commercial and industrial sections of the Coliseum Redevelopment Area.
8. To stimulate industrial, research and development, and commercial development by improving obsolete, underutilized and vacant properties in the Coliseum Redevelopment Area.
9. To assist neighborhood commercial revitalization.
10. To attract and retain businesses to the Coliseum Redevelopment Area.

As discussed above, for the purpose of Plan development and implementation, the Coliseum Redevelopment Area has been subdivided into seven planning districts. These districts are distinct in their land use patterns and mix. They also differ from each other in terms of their problems, and in their opportunities for redevelopment and revitalization. The Redevelopment Plan identifies a "community vision" for each planning district which is a

specific combination of plan actions related to each district's needs and priorities. Further, within these planning district, sub-districts or nodes ("target areas") have been defined where planning efforts would be specifically focused. Each target area has been identified as an area for development due to blight conditions. The Redevelopment Plan would offer specific opportunities, economic incentives, and land use actions to encourage development in these areas. The discussion below describes specific actions included in the Redevelopment Plan. First, Redevelopment Plan area-wide actions are described, followed by target area actions specific to each target area.

3.2.2 Coliseum Area-Wide Actions

The Redevelopment Plan includes the following actions that would occur throughout the Coliseum Redevelopment Area: 1) implementing transitional zoning and buffers; 2) assisting property owners, through grants or loans, in rehabilitating housing units that are in relatively poor condition; 3) implementing an employment training and placement program; and 4) establishing an organization to market the Coliseum Redevelopment Area to new retailers, manufacturers, developers and other business. The area marketing organization would develop data on the area, including a current listing of available parcels in the area, and contact potential businesses and developers to encourage locating in the area.

Many of the industrial areas in the Coliseum Redevelopment Area border residential neighborhoods. Although development standards provide for setbacks and screening on sides of lots adjacent to the residential uses, this does not completely solve the problems of the industrial-residential interface.

Transitional zoning and buffers could include the following actions:

- Prohibit truck traffic through residential neighborhoods;
- Enforce zoning codes to eliminate non-conforming industrial uses in residential areas;
- Install sound walls or berms and plant trees to minimize visual and noise problems;
- Expand use of the M-20 (light industrial) zone for interfaces between residential and industrial uses;

- Expand use of the S-13 Mixed Use Development Combining Zone in transitional areas between residential and industrial uses; and
- Develop live-work units in new developments or converted industrial buildings.

Other area-wide actions that could occur within the Coliseum Redevelopment Area include: 1) improving landscaping along East 14th Street and San Leandro Street, 2) improving street lighting along East 14th Street, 3) providing light rail or bus lines along East 14th Street and San Leandro Street, and 4) improving roads in the Elmhurst Industrial Planning Area. Additional actions of the Redevelopment Plan would be specifically tailored to individual target areas, as discussed below.

3.2.3 Target Area Actions

Although the Redevelopment Plan has a 40 year planning horizon, the Environmental Impact Report (EIR) specifically analyzes only those impacts that would be expected to occur by the year 2010, 15 years from the plan's adoption. Beyond that time horizon, impacts of development would be too speculative to analyze in detail for three reasons. First, regional, state and national population and economic growth cannot be predicted with accuracy so that future cumulative development cannot be reasonably known. Thus, it would not be possible to know if the implementing actions and goals of the Redevelopment Plan would continue to have a growth-inducing effect. Second, science and technology in use in the year 2035 that would affect both environmental impacts and available mitigation cannot be reasonably known. Third, the infrastructure that will be available in the future within the study area is unknown. For these three reasons, this analysis considers that the analysis of growth and resulting impacts beyond the 15-year time frame would be both speculative and unreasonable.

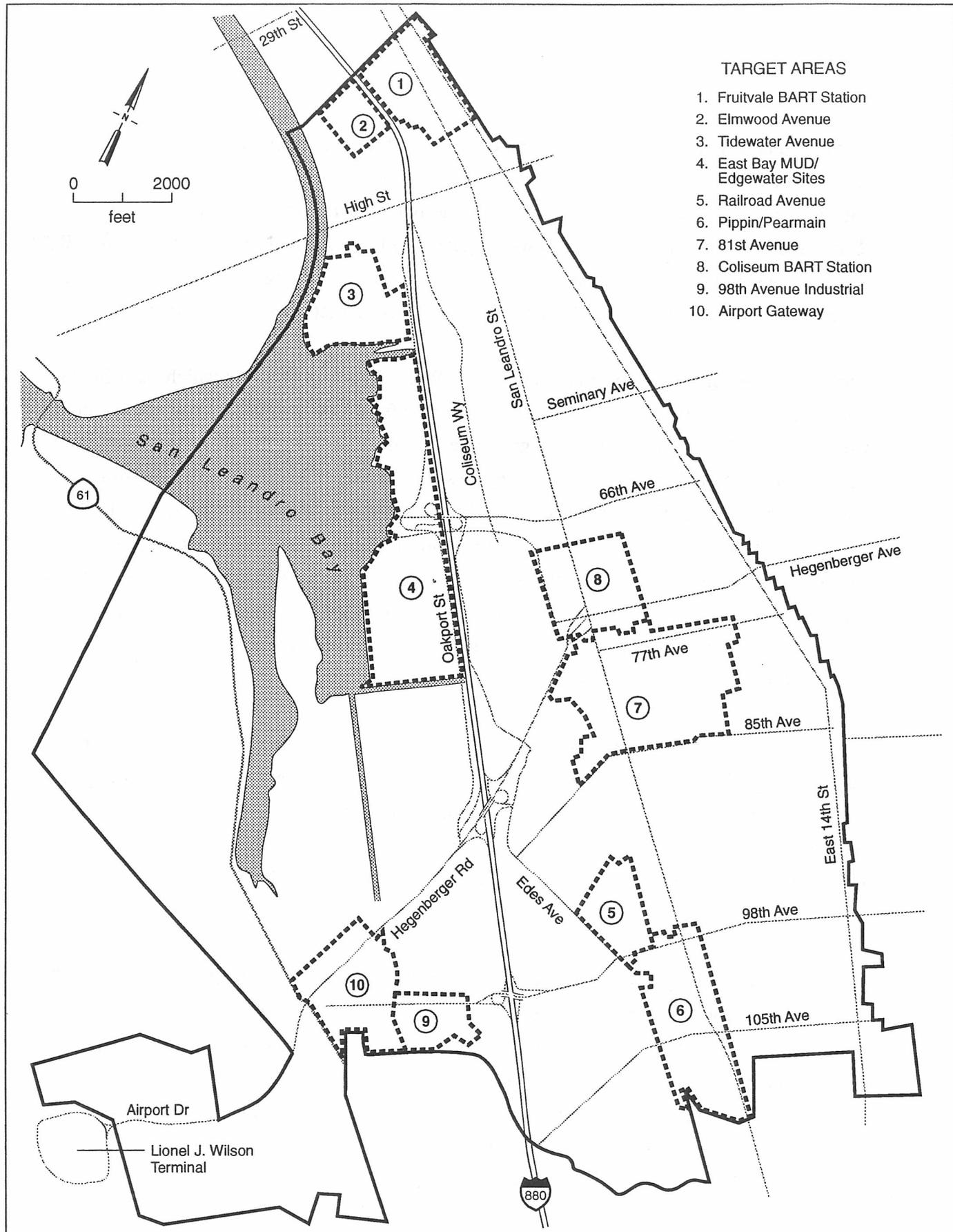
This EIR analyzes impacts of developing 10 of the 18 target areas that are identified in the study area, infill development along the East 14th Street Corridor and other miscellaneous development to the year 2010. For the other eight target areas, the improvements are not planned to occur until after the year 2010 and this EIR analysis does not focus on these areas. The analysis for the 10 target areas is a conservative analysis in that it assumes the maximum feasible growth that could potentially occur within that time frame. At the same time, there is the possibility that some development could occur in the eight target areas or in portions

of the remainder area (not within a target area) that are not specifically analyzed herein. Because of the conservative analysis of impacts for the year 2010 within the 10 target areas and the remainder area analyzed in this EIR, the potential for additional impacts within the eight target areas not analyzed herein would generally be accounted for. In addition, the EIR addresses general issues which are relevant to development throughout the study area, and provides mitigation that would also apply to these eight target areas and the remainder area.

The eight target areas that are identified by the Redevelopment Plan for which the EIR does not specifically analyze impacts include: 1) the Safeway Node in the Fruitvale / Central Corridor Planning District, 2) the Hegenberger Road / East 14th Street Target Area in the Elmhurst / Central East Corridor Planning District, 3) the 105th Avenue / East 14th Street Target Area in the Elmhurst / Central East Corridor Planning District, 4) the 66th Avenue - Coliseum Site in the Edgewater Industrial Planning District, 5) the IMO-Delaval Site in the Elmhurst Industrial Planning District, 6) the San Leandro Street Target Area in the Coliseum/Hegenberger Planning District, 7) the 98th Avenue / Edes Avenue Target Area in the Brookfield Planning District, and 8) the North Field Target Area in the Airport/Recreation Planning District.

Because this EIR assumes that full build-out would occur by the year 2010 within the 10 target areas analyzed in this EIR, cumulative impacts of development with the Redevelopment Plan Area would be adequately disclosed for this 15 year period. Specific impacts relating to such development could, however, require additional disclosure under the *California Environmental Quality Act*. The 10 target areas analyzed in this EIR are shown in Figure 3-3 and are discussed below.

1. Fruitvale BART Station. Because it serves as a transit hub, the Fruitvale BART station could become the focus for an intensive mixed-use community development, with the goal of upgrading the overall image of the area and providing improved housing, increased retail opportunities and more community services in the area. Members of the community are studying the potential for various types of development in the area. A better connection between the BART station and East 14th Street would also be part of this project.



- TARGET AREAS**
1. Fruitvale BART Station
 2. Elmwood Avenue
 3. Tidewater Avenue
 4. East Bay MUD/Edgewater Sites
 5. Railroad Avenue
 6. Pippin/Pearmain
 7. 81st Avenue
 8. Coliseum BART Station
 9. 98th Avenue Industrial
 10. Airport Gateway

Project No.
93C0508A

Coliseum Area
Redevelopment Plan

Woodward-Clyde Consultants

TARGET AREAS

Figure
3-3

Strategies for eliminating blight include: provide capital to support existing Mortgage Assistance Program and First Time Homebuyers Downpayment Assistance Program; provide capital for new residential development in this target area; provide capital to support existing Home Maintenance and Improvement Program; fund small business revolving loan fund for facade improvements, working capital, tenant improvements, etc.; fund landscaping and lighting of neighborhood commercial areas; provide capital for mixed-use projects, parking, toxic clean-up, etc.

2. Elmwood Avenue. On Elmwood Avenue, near Fruitvale Avenue, about three blocks of single-family homes are surrounded by heavy industry. Such a small residential area in close proximity to heavy industry can create noise, traffic, air quality and hazardous materials problems for residents, and residents' complaints can be a nuisance for businesses. These homes could be more buffered from surrounding industrial uses.

Strategies for eliminating blight include: provide capital to develop new Beat Health Substation in the Redevelopment Plan Area; provide capital for landscaping and buffering the residential industrial edge problem areas; provide capital for infrastructure improvements to support approved catalyst projects and other development activities; provide capital for acquisition and/or rehabilitation of parks, open space, libraries, etc.

3. Tidewater Avenue. This industrial area has a hodge-podge of uses ranging from an asphalt plant to a high-end business park. It also includes some unpaved roads, and could require increased water lines if more intensive uses were to develop within it. This target area is adjacent to the Martin Luther King, Jr. Shoreline Park. This area represents an opportunity for the City to identify a more unified type of commercial development that is desired in the area, and to work to establish this development as the predominant one in the area.

Strategies for eliminating blight include: provide capital for infrastructure improvements to support approved catalyst projects and other development activities; provide capital for acquisition and/or rehabilitation of parks, open space, libraries, etc.,

and provide capital needed for industrial land acquisition, assembly, demolition, relocation and toxic clean-up.

4. East Bay MUD / Edgewater Sites. The East Bay MUD Site is largely vacant land that is owned by the East Bay Municipal Utility District. The Edgewater Site includes the City Corporation Yard and land which has been transferred from the Port of Oakland to the City. These sites represent an opportunity for retail development, especially "big box" retail development. The City is currently preparing an EIR for development of a Price/Costco Store in the area.

Strategies for eliminating blight include: provide capital needed for industrial land acquisition, assembly, demolition, relocation and toxic clean-up.

5. Railroad Avenue. Along Railroad Avenue, heavy industrial uses and unsightly tire and vehicle storage yards are scattered among single-family homes. In such a location, the presence of industry creates impacts and safety hazards for residents, while residents sometimes complain about and impede the activities of industry.

Strategies for eliminating blight include: provide capital to develop new Beat Health Substation in the Redevelopment Plan Area; provide capital for new residential development in this target area; provide capital to support existing Home Maintenance and Improvement Program; provide capital for landscaping and buffering the residential industrial edge problem areas.

6. Pippin-Pearmain. Along Pippin and Pearmain Streets between San Leandro Street, Edes Avenue, 98th Avenue and 105th Avenue, single-family homes and industrial uses are mixed together. Conflicts similar to those described above for Railroad Avenue occur here as well.

Strategies for eliminating blight include: provide capital to develop new Beat Health Substation in the Redevelopment Plan Area; provide capital for new residential development in this target area; provide capital to support existing Home Maintenance

and Improvement Program; provide capital for landscaping and buffering the residential industrial edge problem areas.

7. 81st Avenue. This heavy industrial area has a set development pattern and stable businesses, but its roadways are worn and narrow, so it is in need of roadway improvements. Such improvements would make the area more attractive to industry, which would serve to improve employment opportunities in the area.

Strategies for eliminating blight include: provide capital to develop new Beat Health Substation in the Redevelopment Plan Area; provide capital for landscaping and buffering the residential industrial edge problem areas; provide capital needed for industrial land acquisition, assembly, demolition, relocation and toxic clean-up.

8. Coliseum BART Station. BART stations provide an opportunity to develop a dense mixed-use pedestrian environment, and this will be especially true at the Coliseum station if a multi-modal center develops there serving BART, Amtrak, and the Airport. Thus the area around this BART station would have development standards requiring pedestrian-oriented and mixed-use design. The area would support both housing and offices in the future. Currently, the BART station is primarily surrounded by industrial uses, some of which create aesthetic and noise conflicts with the potential for mixed-use development, and these uses would have to be relocated or mitigated if pedestrian- or transit-oriented development were to occur.

Strategies for eliminating blight include: provide capital to support existing Mortgage Assistance Program and First Time Homebuyers Downpayment Assistance Program, provide capital for new residential development in this target area, provide capital to support existing Home Maintenance and Improvement Program; provide capital needed for industrial land acquisition, assembly, demolition, relocation and toxic clean-up.

9. 98th Avenue Industrial. Several well established industrial uses, including the Oakland Scavenger transfer station, are located along 98th Avenue between I-880 and Doolittle Drive. These industrial facilities are not conducive to a revitalization of the

98th Avenue corridor to a commercial corridor, and should be relocated or buffered to improve this corridor. Widening of 98th Avenue may provide the occasion for land use changes in this area.

Strategies for eliminating blight include: provide capital for infrastructure improvements to support approved catalyst projects and other development activities; provide capital for acquisition and/or rehabilitation of parks, open space, libraries, etc.; provide capital needed for industrial land acquisition, assembly, demolition, relocation and toxic clean-up.

10. Airport Gateway. The area in the triangle created by Hegenberger Road, Doolittle Drive and Airport Road contains several parcels that are not heavily developed, and includes an underutilized hotel and a trucking facility. With the reconfiguration of this intersection to better serve airport traffic, this area could become a commercial gateway to the airport with commensurate office or retail development.

Strategies for eliminating blight include: provide capital needed for industrial land acquisition, assembly, demolition, relocation and toxic clean-up.

3.3 PROJECT CHARACTERISTICS

Due to project objectives and implementing actions of the Coliseum Area Redevelopment Plan, approximately 700 net new residential units, 960,000 net new square feet of retail, 622,500 net new square feet of office space, and 512,500 net new square feet of industrial space would result in the study area. This development would create approximately 5,000 additional jobs and would accommodate about 2,100 new residents by the year 2010. With full build-out due to the Redevelopment Plan 9,300 additional jobs would be created and about 5,100 new residents would be accommodated by the year 2035.

3.4 PROPOSED PROJECT FINANCING

Tax increment financing would be used for: 1) the physical plant for job training; 2) infill construction and mortgage assistance to stimulate home ownership; 3) the physical plant for

Beat Health Substations; 4) new construction, home maintenance program, and the acquisition and rehabilitation of units to improve the quality of the residential environment; 5) landscaping and buffering to eliminate land-use conflicts; 6) infrastructure improvements and land acquisition and rehabilitation for parks; 7) land acquisition and toxic cleanup to stimulate industrial commercial development; and 8) small business revolving loan fund, landscaping and lighting, and mixed-use projects for neighborhood commercial revitalization.

The City general fund would be used for rezoning costs. Federal and state transportation funds would be used for transportation infrastructure improvements. Other sources of City, state and federal funds would be used for job training operations. Federal Community Development Block Grant funds would be used for neighborhood commercial revitalization including small business revolving loan fund, landscaping and lighting, and mixed-use projects. City funds would be used to attract and retain business with establishment of the Oakland Commerce Corporation and the one-stop business assistance center.

3.5 APPROACH TO THE EIR

Projections of land use changes and employment growth associated with the proposed Redevelopment Plan provide the basic data that are analyzed, directly or indirectly, in this document. Impacts that would be created as a result of this plan would be both land use and employment driven.

Program impacts were projected for the year 2010 to coincide with future cumulative Association of Bay Area Government (ABAG) growth projections and with Oakland Enterprise Zone growth projections for the industrial area around the Oakland Coliseum Oakland/Alameda Coliseum Complex. Projections of population, employment, income and housing growth are prepared by ABAG every two years for the nine-county Bay Area. These projections are developed based on national and regional demographic and economic trends as well as local government plans, policies and regulations that affect land use. The Oakland Enterprise Zone program, a state enterprise zone developed by the City of Oakland, provides a number of incentives (i.e., tax credits for sales and use taxes and for hiring qualified employees, interest deductions for lenders on loans to firms within the area, building permit application streamlining) to existing businesses for expanding within the area and to new

3.0 Project Description

businesses for locating within the area. The program will be in effect for 15 years from 1993 to 2007 and is projected to result in an increase of about 5,700 new jobs. This increased growth was not anticipated by the ABAG growth projections. Once these new jobs are added, it is expected that they will continue even after the economic incentives are no longer in effect. The Oakland Enterprise Zone encompasses approximately 29.5 square miles, mostly in the flatland area of Oakland. The Coliseum Redevelopment Area (11 square miles) is largely contained within the Enterprise Zone, except for the land west of I-880 near San Leandro Bay and the Oakland Airport.

Employment and land use projections were developed for the proposed Redevelopment Plan. Because many impacts (e.g., intersection-level traffic analyses, curbside carbon monoxide concentrations and historic resources) depend on location, and because employment and land use projections could not always be pinpointed to specific community blocks or streets, a general approach has been taken in the impact analyses. Similarly, the information provided in the setting sections has been tailored to what was required for the impact analysis, and avoids descriptions that are overly detailed with regard to location.

As a conservative case, land use changes due to the Redevelopment Plan and market conditions within the study area are analyzed for the land use projections. For the traffic analyses, projections from the Alameda County Congestion Management Agency for the year 2010 are assumed to include growth due to the Coliseum Redevelopment Plan. Thus impacts due to the Plan must be subtracted from the cumulative total. As a conservative case, smaller land use projections are assumed for the traffic analysis to be subtracted than for other analyses based on land use projections (i.e., employment, energy, utilities, and public services). Because the air quality and noise analyses are based on traffic projections, these also use the lower land use projections.

Under a forecasting approach to cumulative impact analysis, jobs that would be created by the proposed Coliseum Area Redevelopment Plan would exceed both ABAG and Enterprise Zone employment projections for the study area. That is, the Coliseum Area Redevelopment Plan jobs represent a net new increment to ABAG and Enterprise Zone growth forecasts.

The technical categories that are analyzed in this EIR include: land use; policy conformity; employment, population and housing; transportation and circulation; air quality; noise; hazardous materials; geology and seismicity; surface water hydrology, storm drainage and water quality; biotic resources including wetlands; cultural and historic resources; energy; public utilities; and public services.

3.6 INTENDED USES OF THE EIR

The City of Oakland is the Lead Agency for the proposed Coliseum Area Redevelopment Plan project and will use the information contained in this EIR when considering adoption of the Plan. This Draft Environmental Impact Report (DEIR) will also be reviewed by the other responsible and interested agencies, groups, and individuals.

This EIR will serve as a Program EIR under Section 15168 of the *California Environmental Quality Act Guidelines*. It will provide the basis for environmental review of specific projects and actions subsequently proposed in the study area that have potential effects described in this Program EIR. For such projects, this Program EIR will provide the basis for a Negative Declaration or Supplemental EIR on those projects, covering site-specific issues that have not been addressed in this document. In addition, this program EIR identifies mitigation measures for general impacts that could be implemented on a project specific basis, as applicable, to reduce potential impacts in some cases to a less-than significant level.

ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

4.1 POLICY CONFORMITY

4.1.1 Environmental Setting

Oakland General Plan

The City of Oakland is currently conducting a comprehensive General Plan update. The first element to be adopted was the Historic Preservation Element (March 1994). The Open Space, Conservation and Recreation Element is scheduled for adoption in mid-1995, followed by the Land Use and Transportation Elements in 1996, and various other elements, including housing, thereafter. Until the General Plan update is completed, the *Oakland Policy Plan* (1972, as amended) is regarded as the most current and comprehensive statement of the City's *Oakland Comprehensive Plan* goals and policies.

This *Oakland Policy Plan* is an overview and summary of policies contained in the previously adopted *Oakland Comprehensive Plan*. The Policy Plan contains goals and policies pertaining to Human Resources; Housing; Jobs & Employment; Land Use; Parks & Recreation; Open Space and Natural Resources; Safety & Seismic Safety; Circulation; Scenic Highways; Noise; and Citizen Participation and Neighborhood Planning.

Following is a summary of *Oakland Comprehensive Plan* goals that are particularly relevant to the Coliseum Area Redevelopment Plan:

- To expand the educational and employment opportunities for all of Oakland's minority groups.
- To improve socioeconomic conditions of Oakland's economically disadvantaged residents.

4.1 Policy Conformity

- To provide for the housing needs of all economic segments, age groups, and all household types.
- To ensure a reasonable balance of housing according to tenure (such as conventional ownership, condominium, or rental), dwelling type, price, density, type of amenities, and location.
- To provide increased job opportunities to Oakland's unemployed, underemployed, and otherwise economically disadvantaged residents beyond the modest increases in jobs that might be expected from current trends.
- To reduce the level of unemployment in Oakland's labor force, particularly among the City's hard-core unemployed.
- To increase the productivity of human, land and capital resources in Oakland.
- To strengthen the City's nonresidential tax base through the stimulation of private sector investment in commercial and industrial enterprises, and through the retention and attraction of economic activity beyond improvement in the tax base that might occur through current trends.
- To improve Oakland's image as a community in which to do business.
- To advance Oakland's position as a regional center of commerce, industry, recreation and culture.
- To conserve existing neighborhoods and other areas, while encouraging new development in locations compatible with such conservation.
- To prevent or reduce exposure to excessive or annoying noise.

Specific policies that are pertinent to the Redevelopment Plan and the Plan's conformance to these policies are discussed in Section 4.1.3 Impacts, below.

Related Plans and Policies

Port of Oakland

The City of Oakland Charter delegates the Port of Oakland Board of Commissioners with specific powers and duties regarding land use and development on properties along the Oakland Waterfront within a geographically defined area termed the "Port Area." All port actions must conform with the City of Oakland General Plan.

Approximately 40 percent of the land contained in the Coliseum Redevelopment Plan Area is land which is located within the Port Area. Most of this land is private property. The Port has jurisdiction over the Metropolitan Oakland International Airport, the Seaport and the Oakland Airport Business Park (except for land transferred to the City in the East Bay MUD / Edgewater Sites Target Area).

Within the Airport Business Park and the Distribution Center, the Port has ordinances establishing codes, covenants and restrictions regarding land use and development. Permitted uses include a range of light industrial uses (i.e., warehousing, processing laboratory), research and development activities, and offices. Retail uses are permitted along Hegenberger and Oakport Roads while hotels and motels are limited to specific areas.

East Bay Regional Park District

The East Bay Regional Park District 1989 *Master Plan* designates several open space and recreation areas in the Coliseum Redevelopment Area. These include the existing Martin Luther King, Jr. Regional Shoreline, which provides an observation platform and boardwalk for viewing Arrowhead Marsh. The *Master Plan* also proposes a trail around San Leandro Bay. Plan policies call for maximum public access to the shore while avoiding impacts on wildlife and rare plants, and access by public transit, hiking, bicycling, etc., whenever feasible.

4.1 Policy Conformity

The dedicated park encompasses approximately 200 acres of land plus over 400 acres of water and marsh areas such as Arrowhead Marsh. Park facilities provide for both active and passive recreation, such as bicycling, motorized boating, playing fields, bird watching, an observation structure and picnic sites. Paved or improved trails, connecting to city streets, provide public access along most of the waterfront from the Tidewater Avenue area, continuing around the perimeter of San Leandro Bay and adjacent to Doolittle Drive. The Shoreline Park is adjacent to Tidewater Avenue and East Bay MUD / Edgewater Sites Target Areas.

Bay Conservation and Development Commission (BCDC)

BCDC has regulatory and permitting authority on land within 100 feet of the bay shoreline or certain waterways to the bay. The Commission's primary goals are twofold: 1) to prevent the unnecessary filling of the San Francisco Bay, and 2) to increase public access to and along the bay shoreline. The BCDC *San Francisco Bay Plan* shows the existing park surrounding the Oakland shoreline of San Leandro Bay, and indicates a proposed boat ramp in Airport Channel. The Plan also proposes fishing in the Bay and a path from the Bay to the Coliseum.

City of San Leandro

The southern boundary of the Coliseum Redevelopment Area is the City of San Leandro. In June 1993, San Leandro adopted a Redevelopment Plan which is the focus of major development in that city. The San Leandro Redevelopment Plan includes commercial revitalization of East 14th Street starting at the Oakland / San Leandro border (Livermore, 1994).

Related Planning Areas and Activities

Portions of the proposed Coliseum Redevelopment Area have been the subject of several land use and commercial revitalization studies. In addition, the study area encompasses several related planning areas that are recognized by the City of Oakland.

Community Development Districts

The northeast portion of the study area between Fruitvale Avenue and High Street is part of Fruitvale Community Development District. The remaining portions of the Coliseum Redevelopment Area lie entirely within the Central East Oakland and Elmhurst Community Development Districts. These Districts are primarily responsible for overseeing Community Development Block Grant funds for neighborhood and public services facilities (e.g., childcare, tutoring, and housing development).

Neighborhood Commercial Revitalization Area

East 14th Street, between 73rd Avenue and the San Leandro / Oakland city limit, has been designated as a Neighborhood Commercial Revitalization (NCR) target area. The primary objective of the Neighborhood Commercial Revitalization program is to improve the physical condition and marketability of properties along the city's major commercial corridors. The program completes a market analysis, urban design plan and strategy for each target area. This study has not yet been undertaken for the East 14th Street corridor.

Oakland Commerce Corporation

The Coliseum Redevelopment Area is part of the Oakland Commerce Corporation business retention program. The focus of the program is business retention within the industrial and manufacturing areas of Oakland. The Oakland Commerce Corporation was originally created to address the business retention and land use problems in the Coliseum Redevelopment Area such as residential/industrial conflicts. In 1993, the program was expanded to include West Oakland and portions of the Jack London Square area.

Enterprise Zone

A portion of the study area is included in the Oakland Enterprise Zone Targeted Industrial Area. This area is generally bounded by Fruitvale Avenue, East 14th Street, 98th Avenue and the City of San Leandro border, and I-880. The Oakland Enterprise Zone has two principal objectives: 1) to stimulate economic activity and employment opportunities, particularly for

disadvantaged residents; and 2) to encourage commercial and industrial development in the targeted areas. (The Enterprise Zone also includes a Targeted Commercial Area in downtown Oakland which is not located in the Coliseum Redevelopment Area.)

4.1.2 Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project would normally be considered to have a significant effect on the environment if it were to conflict with adopted environmental plans or goals of the community where it is located.

4.1.3 Impacts

Consistency with the *Oakland General Plan*

By statute, all development within the Redevelopment Area must be consistent with the adopted Oakland General Plan when development projects are approved. The following discussion is provided to identify potential types of inconsistency between the proposed Redevelopment Plan and the most current *Oakland Comprehensive Plan*. As individual projects are proposed, there may be elements of these projects that are inconsistent with specific policies contained in the current *Oakland Comprehensive Plan*. Following is a summary of *Oakland Comprehensive Plan* policies that are relevant at the program level of analysis contained in this EIR. The policies are paraphrased for brevity; following each policy is the City Council Resolution Number which adopted the policy.

Jobs and Employment Element

The policy set forth in the *Oakland Comprehensive Plan* is to support job training and placement institutions, to encourage industries which provide entry-level jobs and opportunities for upward mobility (Resolution No. 51836), and to strengthen the City's tax base through the retention and attraction of economic activity beyond improvements that might occur through current trends (Resolution Nos. 57593 and 58889). The proposed Redevelopment Plan would conform to these policies by providing a job training program for

area residents, encouraging business retention through an area-wide marketing program, and upgrading the infrastructure and overall image of the Coliseum Redevelopment Area.

Housing Element

The aims of the *Oakland Comprehensive Plan* are to encourage private housing development (Resolution No. 57775); to support cooperative ownership and other non-profit mechanism as a means of reducing housing costs (Resolution No. 57775); to provide or assist in obtaining rehabilitation loans and grants, counseling and other follow-up services as needed, as well as relocation aid if required (Resolution No. 57775); and to relocate rather than demolish residential property acquired for public purposes when economically feasible (Resolution No. 57775).

Implementation of the Redevelopment Plan would include a variety of housing opportunities, including private development and non-profit mechanisms, such as the involvement of the Spanish Speaking Unity Council in the development of the Fruitvale BART Station development. The Redevelopment Plan would be subject to the Community Redevelopment Law that requires relocation assistance and benefits for all residential property that would be acquired for redevelopment purposes. See further discussion of relocation in Section 4.3 Population, Employment and Housing, below. No residential property would be taken by eminent domain under the Redevelopment Plan.

Land Use Element, Natural Setting

According to the *Oakland Comprehensive Plan*, every reasonable effort should be made to provide attractive public access to the water's edge in development of shoreline areas (Resolution No. 52735). The Redevelopment Plan does not explicitly include shoreline access as part of identified redevelopment projects. However, implementation of the Redevelopment Plan would not remove current public access to the Martin Luther King, Jr. Shoreline Park in the East Bay MUD / Edgewater Sites Target Area or in the Tidewater Target Area.

Mixtures with Non-Residential Uses and on Vacant Lots

The *Oakland Comprehensive Plan* policy is to protect residential areas from activities which produce excessive noise, dirt, odors or heavy traffic (Resolution No. 52735); to generally exclude new residential uses from areas planned for industrial use (Resolution No. 58889); and to use vacant lots within residential areas in the flat lands for infill housing of appropriate type and density (Resolution No. 58889). Conformance with these policies is a major goal of the proposed Redevelopment Plan. The Redevelopment Plan proposes to implement rezoning, buffering, and code enforcement to minimize or eliminate residential/industrial conflicts. All of the housing proposed in the Coliseum Redevelopment Area would be infill, urban housing.

Industrial Areas

The *Oakland Comprehensive Plan* seeks to increase use of vacant, underutilized and derelict land (Resolution No. 51836); and to develop industrial areas in ways that do not harm adjacent residential areas (Resolution No. 58889). The overall goals and objectives of the Redevelopment Plan would conform with these policies.

Commercial and Industrial Uses (Resolution No. 58889)

In the *Oakland Comprehensive Plan*, development intensity and height of commercial and industrial uses that are located in a residential area generally should not exceed what is suitable for housing in the same area (Resolution No. 58889). Development plans for the Coliseum BART Station Target Area could conflict with this policy if there is not sufficient buffering and transitional uses between new retail, office and multi-modal transportation uses at the time that specific projects are proposed.

Commercial Areas (Resolution No. 58889)

The intentions of the *Oakland Comprehensive Plan* are to complement, not weaken, the Central District (Resolution No. 58889); to discourage, by rezoning or otherwise, commercial uses that do not bring economic benefit to Oakland and do not provide convenient shopping

to sizeable residential areas which would not otherwise be served (58889); and to encourage a mixture of residential or other non-commercial activities suitable to the particular area (Resolution No. 58889).

The proposed Redevelopment Plan would result in about 622,500 net new square feet of commercial office space. Currently, the Coliseum Redevelopment Area does not directly compete with office space in the Central District, as the study area contains mostly "Class B" office space and types of uses that do not require proximity to the Central District of downtown Oakland. Much of the office space that has been identified for the Coliseum Redevelopment Area is flexible space and incubator space that would continue to take advantage of less expensive rents outside of the Central District of downtown Oakland. Specific commercial projects would need to be reviewed to assess if Coliseum Redevelopment Area office space would compete with the Central District. Retail uses in the proposed study area would require rezoning from manufacturing uses to commercial uses. New large-scale retail projects would benefit the City overall and make use of large tracts of land with regional access not available elsewhere in the City. Project-specific studies would be completed to determine the costs and benefits to the City.

Civic and Open Space Uses

Undeveloped areas owned by the East Bay Municipal Utility District should be retained as reserves of open space (Resolution No. 58889); the City will evaluate its vacant property for possible retention as permanent open space (Resolution No. 55637). Within the East Bay MUD / Edgewater Sites Target Area, property is owned by East Bay MUD and the City of Oakland. The Redevelopment Plan could be in conflict with existing open space policies; however, the location and use of these parcels may not be suitable for permanent open space.

Circulation and Noise

The policies of the *Oakland Comprehensive Plan* are to concentrate housing, employment or shopping near BART stations and major bus routes (Resolution No. 58889); and to discourage new land uses and density increases in areas where noise levels in the foreseeable future exceed what is acceptable for such uses (Resolution No. 54264). The overall goals to reduce

residential/industrial conflicts, and the planned development at the Fruitvale BART and Airport/Coliseum BART Stations Target Areas would be consistent with these policies.

Related Planning Areas and Activities

Proposed business retention, commercial revitalization, and job training programs could complement existing programs in the Coliseum Redevelopment Area. If redevelopment activities were not coordinated with existing programs, there could be an inefficiency of City resources and potential conflicts among programs.

Related Plans and Policies

At a program level of detail, the proposed Redevelopment Plan, on balance, would conform with the proposed plans and policies of the East Bay Regional Park District. Specific development in the Tidewater Avenue and East Bay MUD / Edgewater Sites Target Areas would not preclude existing public access to the shoreline which currently provides opportunities for shoreline access for hiking, bicycling and jogging.

The proposed Redevelopment Plan would be consistent with the Bay Conservation Development Commission (BCDC) *San Francisco Bay Plan*. The Coliseum Area Redevelopment Plan does not address increased opportunities for shoreline paths from the Bay to the Oakland / Alameda County Arena as shown in the *San Francisco Bay Plan*, but it does not preclude such opportunities.

Redevelopment activities that would occur on land under the jurisdiction of the Port of Oakland, including the Oakland Airport Business Park, would require approval by the Port. Overall, the Redevelopment Plan would not conflict with Port plans for expansion and improvement of the Metropolitan Oakland International Airport. The Redevelopment Plan would generally be beneficial to the Port by upgrading and improving the overall image of the Coliseum Redevelopment Area which serves as a "gateway" to the City from the Oakland Airport.

Summary of Environmental Plans and Goals

The Redevelopment Plan would not conflict with adopted environmental plans, and therefore would not have a significant effect on the environment in this regard. By statute, all development within the Coliseum Redevelopment Area must be consistent with the adopted General Plan of the City of Oakland.

4.1.4 Mitigation

Because the Redevelopment Plan would not conflict with any established environmental plans or goals, no mitigation is warranted. The following measures would further reduce any project-specific effects on plan conformity.

1. Areawide marketing activities of industrial and commercial parcels should be coordinated with the Oakland Commerce Corporation and the Enterprise Zone Coordinator, which also provides business retention and marketing services in the Coliseum Redevelopment Area.
2. The Redevelopment Plan should include design standards that provide shoreline access in the development of the Tidewater and East Bay MUD / Edgewater Sites Target Area.
3. The Redevelopment Plan should establish land use and design guidelines for the Redevelopment Area that could be incorporated into the ongoing update of the *Oakland Comprehensive Plan*.
4. As appropriate, neighborhood commercial revitalization projects, major new housing developments and housing rehabilitation programs should be coordinated with the local community development districts in Fruitvale, Central East Oakland, and Elmhurst.

REFERENCES - Policy Conformity

City of Oakland, *Oakland Comprehensive Plan*, 1994.

City of Oakland, *Oakland Policy Plan A Component of the Oakland Comprehensive Plan*, 1972.

Livermore, Kathleen, Associate City Planner, City of San Leandro, telephone conversation, June 28, 1994.

4.2 LAND USE AND ZONING COMPATIBILITY

4.2.1 Environmental Setting

Coliseum Redevelopment Area

Land Use

The Coliseum Redevelopment Area covers approximately 6,500 acres, about 13 percent of the City's total land area. The area encompasses the "flat lands" of East Oakland. Land use within the Coliseum Redevelopment Area is predominantly industrial, manufacturing, or commercial (34 percent). Of the remaining area, 25 percent is airport and airport-related; 19 percent is residential; 14 percent is open space, vacant land, or land that is otherwise undevelopable; and 8 percent is roadways, streets, and utilities. Table 4.2-1 shows the general distribution of land use by category.

Generalized land use patterns in the Coliseum Redevelopment Area are shown in Figure 4.2-1. Windshield surveys were conducted for the entire study area to assess general land use patterns. Where several types of land uses were present, the predominant land use pattern was recorded. Eight predominant land use categories were identified in the field survey and are described below.

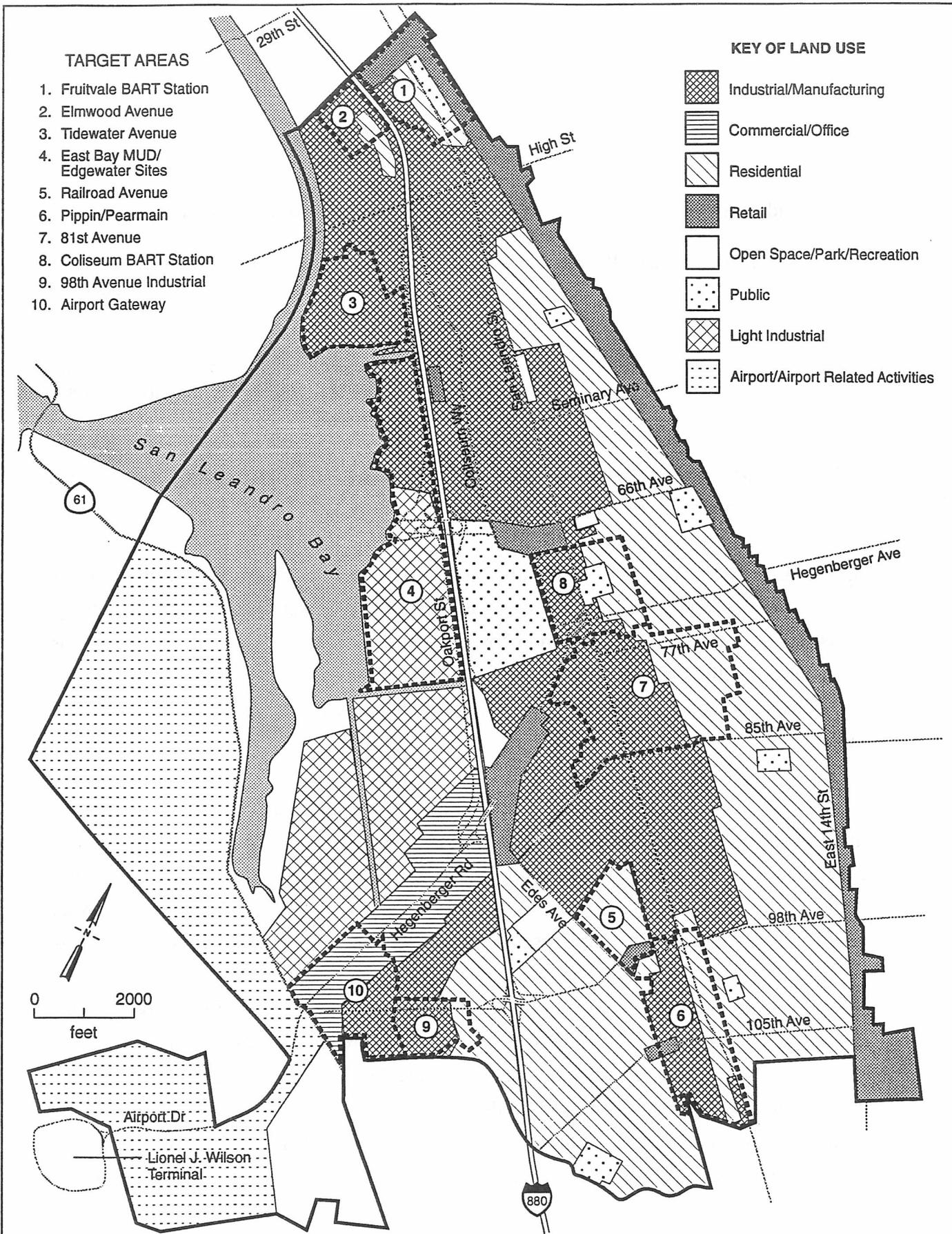
<u>Land Use Category</u>	<u>Description of Predominant Uses</u>
Industrial/Manufacturing:	Warehousing, manufacturing, heavy equipment and heavy industry
Light Industrial:	Industrial business parks and light manufacturing
Commercial:	High-, mid- and low-rise offices and hotel/motel uses
Retail:	Local and regional serving retail and restaurants

TABLE 4.2-1

**GENERALIZED EXISTING LAND USE WITHIN THE
COLISEUM REDEVELOPMENT AREA**

Land Use Category	Approximate Acres	Percent of Total
Commercial/Industrial/Manufacturing	2,200	34%
Airport and Airport Related	1,600	25%
Residential	1,200	19%
Open Space/Recreation/Vacant	950	14%
Highway/Railroads/Utilities	550	8%
TOTAL	6,500	100%

Source: *ABAG Projections 94: by Census Tract, Oakland* (Brady and Associates)
Coliseum Area Land Use Suitability Study, March 1993; and Pittman &
Hames Associates, 1994.



Project No. 93C0508A	Coliseum Area Redevelopment Plan	GENERALIZED LAND USE	Figure 4.2-1
Woodward-Clyde Consultants			

4.2 Land Use and Zoning Compatibility

Airport:	Airport lands and airport related industry
Residential:	Single- and multi-family housing
Open Space / Parks / Recreation:	Open space, parks, recreation areas, and land that is otherwise undevelopable
Public:	Schools, BART Stations, and the Oakland / Alameda County Coliseum complex

A list of sensitive receptors in the Coliseum Redevelopment Area, e.g., schools, hospitals, and convalescent homes, is contained in Appendix C.

As shown in Figure 4.2-1, above, the predominant land use is industrial and manufacturing, primarily concentrated between Interstate 880 (I-880) and San Leandro Street, although industrial pockets are located throughout the study area. Light industrial uses are concentrated in the Oakland Airport Business Park. The study area's only "Class A" high-rise office building, the Airport Corporate Center, is located in the business park on Oakport Street.

Residential uses are primarily single-family homes located south and southwest of East 14th Street, and south of Edes Avenue and 98th Avenue. Multi-family uses are generally clustered on major residential streets; however apartments are often interspersed among single-family homes. The project area encompasses portions of the Fruitvale and Central East Oakland neighborhoods, and all of the Elmhurst, Brookfield Village, and Sobrante Park neighborhoods.

Major concentrations of retail uses are situated along East 14th Street and Hegenberger Road, between San Leandro Street and I-880. However, the retail character of these streets are different. On East 14th Street, there are mostly local serving retail uses, including beauty shops, churches, laundromats, check cashing outlets, and neighborhood restaurants. There is an absence of national chain retailers, grocery stores, and financial institutions. In contrast, Hegenberger Road has relatively large-scale, regional and citywide serving retail uses,

4.2 Land Use and Zoning Compatibility

including Home Base, the Auto Parts Club and Pay 'n Pak. Commercial uses on Hegenberger Road include low- and mid-rise offices, banks, hotels and motels.

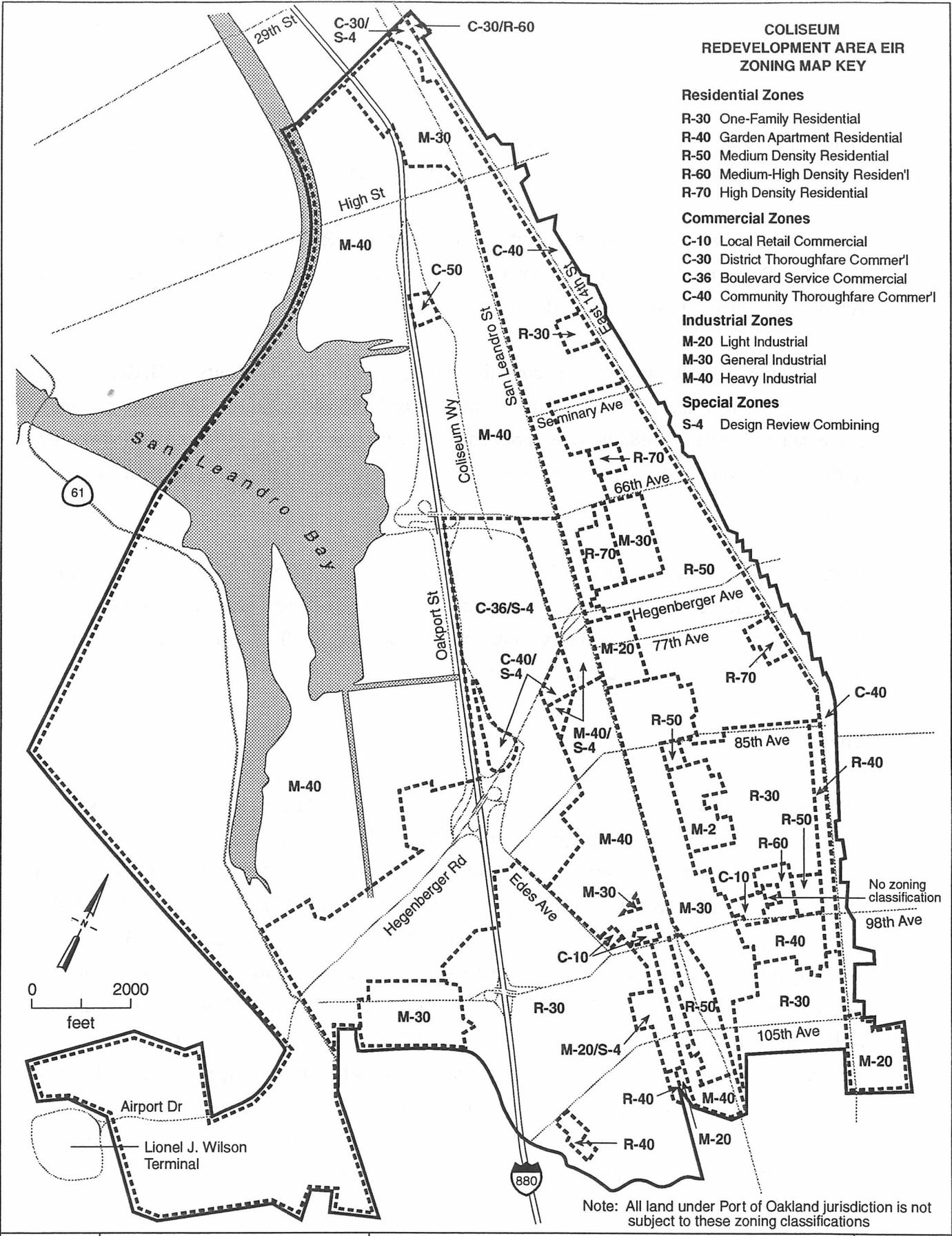
Major open space use includes the Martin Luther King, Jr. Regional Shoreline leased by the East Bay Regional Park District from the Port of Oakland. The shoreline park includes Arrowhead Marsh, a protected wetlands area.

The Coliseum Redevelopment Area contains two BART stations, the Fruitvale BART Station and the Airport/Coliseum BART Station. The Oakland / Alameda County Coliseum complex is located northeast of I-880 between 66th and 77th Avenues. The stadium and arena is home to two professional sports franchises and the site of scheduled events and concerts throughout the year.

Portions of the Metropolitan Oakland International Airport (excluding passenger terminal facilities) are located in the southwest end of the study area. The Oakland Airport currently serves about 6.5 million passengers annually. By the year 2010, an estimated 11.7 million passengers are expected to use the airport.

Zoning

The Coliseum Redevelopment Area contains 13 residential, industrial, commercial and special zoning classifications. The major zoning classifications are shown in Figure 4.2-2 and include R-30, One-Family Residential, R-40 Garden Apartment Residential, R-50 Medium Density Residential, R-60 Medium-High Density Residential, and R-70, High Density Residential. Commercial zones include C-10 Local Retail Commercial, C-30 District Thoroughfare, C-36 Boulevard Service, and C-40 Community Thoroughfare. As reflected by the existing land use pattern, the predominant zoning classification is M-40 Heavy Industrial, followed by M-30 General Industrial. Four pockets of M-20 Light Industrial zones are located throughout the Coliseum Redevelopment Area adjacent to residential uses. The S-4 Design Review Combining District is combined with C-36 and C-40 zones on Hegenberger Road and East 14th Street (near Fruitvale Avenue). A description of zoning classifications and their permitted uses are presented in Appendix C, Table C-1.



Project No. 93C0508A	Coliseum Area Redevelopment Plan	ZONING CLASSIFICATIONS	Figure 4.2-2
Woodward-Clyde Consultants			

General Visual Characteristics

The proposed Coliseum Redevelopment Area is located on relatively flat terrain on or adjacent to bay fill. Flat terrain extends to the north, west and south: and the East Bay Hills rise 1,700 feet generally to the east of the Coliseum Redevelopment Area. In general, the topography slopes downward from east generally to eight creeks found within the study area limits, the most prominent is San Leandro Creek, located to the south. Proceeding from north to south, others include Sausal Creek, Peralta Creek, Courtland Creek, Seminary Creek, Lion Creek, Arroyo Viejo, and Elmhurst Creek. Penetrating the eastern shore line of the bay are two tidal sloughs: East Creek and Damon. Large marshes are visible at the southern end of the bay, and south of Airport Drive.

In general, the study area can be described as linear in shape, oriented on a north/south axis. In the center, the eastern and western limits extend outward following the configuration of East 14th Street to the east, and Harbor Bay Parkway and the north fields of the airport. An additional segment to the southwest includes the area between Lew Galbraith Golf Course and Air Cargo Road.

The visual character and quality of land uses vary throughout the 6,500 acre Coliseum Redevelopment Area. Distinctive visual landmarks are the Oakland / Alameda County Coliseum Complex (the symbolic anchor of the study area), the Martin Luther King, Jr., Regional Shoreline Park (including Arrowhead Marsh), the Airport Corporate Center (a high-rise office complex visible from I-880), and the Metropolitan Oakland International Airport. The visual images of the study area are seen from the major transportation routes. They include Hegenberger Road, East 14th Street, 98th Avenue, the elevated BART tracks, and I-880.

The density of development generally declines from east to west. Housing dominates the view between the BART tracks and the eastern study area, and within the area surrounding the I-880 / 98th Avenue interchange at the southern project limits. Closely-spaced commercial and small older heavy industrial plant facilities, which have minimal landscaping, setbacks and screening, border the BART tracks. Large and more widely-spaced industrial building are seen further west between the BART tracks and I-880. Elevated industrial

4.2 Land Use and Zoning Compatibility

equipment such as stacks and storage silos can be seen across the skyline throughout this area. Billboards and advertising signs are also visible throughout this area and to the west of I-880. The most prominent feature is the Oakland Coliseum complex. It consists of two round, glass and steel, stadium structures surrounded by large parking lots. The area bordered by Hegenberger Road, I-880, and the San Leandro Shore Line is a business park with large one and two-story contemporary buildings surrounded by landscaping. Large undeveloped parcels are sprinkled throughout. The tallest structure in this area is the thirteen-story high Unysis building located southwest of the Oakland Coliseum.

Hegenberger Road serves as the main access for the Oakland Airport. Airport customer and related services are located along this route such as hotels and restaurants. In addition, there are commercial buildings serving the business community. Contemporary medium high-rise buildings form a vertical edge to this transportation corridor. The airport dominates the views to the west. There are wide unobstructed views between large metal-sided airplane hangers and across air fields. With the exception of the Unysis Building, multi-story buildings are concentrated along Hegenberger Road, thereby preserving views of the bay from vantage points to the east, from I-880, and from the BART train.

Connecting green spaces are concentrated between I-880 and the bay and along the edges of the I-880 freeway. Within these areas long-range views are afforded down transportation corridors, between buildings, across air fields and water, and through the Lew Galbraith Golf Course. From I-880, there is a wide and unobstructed view of San Leandro Bay between 68th Avenue and East Creek Slough. Lines, forms and textures are clearly delineated by large forms, well-defined and broad transportation corridors, and large masses of colors of similar hues. The orientation to the landscape is directed outward. There is a sense of connection to the visual environment beyond the immediate neighborhood.

In contrast, the area between the BART tracks and East 14th Street, and around 98th Avenue, is characterized by closely-spaced homes bordering narrow streets. The visual quality and character can change from block to block. Homes vary in style and age, but are primarily single-family bungalows built in the 1930's and 1940's. On a single street, one block may have homes that are well maintained and landscaped, while on an adjacent block, homes may be of average quality with poor maintenance. Multi-family residential uses are located along

4.2 Land Use and Zoning Compatibility

major streets, but are also interspersed within blocks of single-family homes. Population numbers are high, and use of the streets by residents creates an extension and overlap of personal boundaries. Long range views are afforded down the wider transportation corridors, such as East 14th Street and Hegenberger Road. However, the predominant focus is inward and is defined by the immediate neighborhood. There is a patchwork of textures, short lines, multiple colors, and diverse angular forms. Green spaces are small and interspersed between buildings.

East 14th Street is a well-defined edge to the eastern limits of the Coliseum Redevelopment Area. It is characterized by store-front retail uses, some of which are boarded up. There is no consistent landscape theme along the streetscape. As a result the varied architectural styles and advertising signs define the visual experience. This service center serves as the spine from which lateral access routes are provided to the neighborhoods.

Although portions of the Coliseum Redevelopment Area are well maintained, overall physical blight is prevalent throughout the study area. There is a relatively high incidence of 1) buildings which are unsafe or unhealthy for persons to live and work in, 2) obsolete commercial buildings, 3) obsolete industrial buildings, and 4) incompatible land uses, particularly between industrial and residential uses (KMA, 1994).

Redevelopment Planning Districts and Target Areas

The Coliseum Redevelopment Area contains seven redevelopment planning districts that have been designated to characterize land use patterns, and formulate redevelopment strategies (see Figure 3-2 in the Project Description Chapter). Each planning district, in turn, contains target areas which would be the major focus of redevelopment strategies (see Figure 3-3 for the target area boundaries). Proposed redevelopment strategies could help enhance existing businesses in the area, create a key node on vacant or underused land, or stabilize an existing, desirable development pattern. These strategies could also help minimize or eliminate land use conflicts with the predominant or emerging land use patterns that impede further development. Land use conflicts often entail residential/industrial "edge" problems in which industrial uses produce noise, odor or visual conditions that conflict with adjacent residential uses.

4.2 Land Use and Zoning Compatibility

A description of redevelopment planning districts and the target areas contained in those districts are described below. As noted in Chapter 3.0 Project Description, the proposed Coliseum Redevelopment Area contains a total of 18 Target Areas, of which 10 are specifically analyzed in this EIR. The remaining eight target areas, are not specifically addressed because development is not anticipated to occur until over 15 years, however, they are noted below.

Fruitvale Central Corridor Planning District

This corridor extends along the northern edge of the Coliseum Redevelopment Area between Fruitvale Avenue and Hegenberger Avenue. It includes a portion of the East 14th Street corridor, which supports mixed-use residential, retail, and small office development. It also includes residential neighborhoods in Fruitvale and Central East Oakland south of East 14th Street and north of the industrial areas. This District contains the Fruitvale BART Station Target Area which is analyzed in this EIR. It also contains the Safeway Node for which development is not specifically analyzed in this report.

1. Fruitvale BART Station Target Area. Generally bounded by Fruitvale Avenue, I-880, East 14th Street, and 38th Avenue, land uses in this target area are a mixture of single-family residential, and low density (2-3 story) mixed-use commercial retail uses situated along East 14th Street. The Fruitvale BART Station is a transit hub that serves as a gateway to the Fruitvale community. The Spanish Speaking Unity Council and BART are currently planning the development of a mixed-use, transit-based development within the target area boundaries, southeast of San Leandro Street.

Edgewater Industrial Planning District

This district contains the heavy industrial areas of Fruitvale and Central East Oakland as well as the Airport Business Park, which is light industrial. Traditional heavy manufacturing industries are located between 66th Avenue and Fruitvale Avenue, many of which are served directly by rail. The Edgewater Industrial Planning District has several residential/industrial edge and conflict areas. The Edgewater Industrial Planning District includes the Elmwood Avenue, Tidewater Avenue, and East Bay MUD / Edgewater Sites Target Areas. The 66th

Avenue Coliseum Site also is included in the Edgewater Industrial Planning District, but is not analyzed in this EIR.

2. Elmwood Avenue. Elmwood Avenue is a three-block street, southeast of Fruitvale Avenue, that contains single-family homes surrounded by heavy industrial uses. Homes on this street are directly affected by noise, traffic, air quality, and hazardous material conditions commonly associated with heavy industrial uses. Homes on this street vary in quality and condition, but are generally well maintained.
3. Tidewater Avenue. This area currently contains a diverse mixture of industrial uses ranging from trucking firms (Di Salvo and Flexivan), heavy industrial plants (Gallagher and Burk asphalt manufacturing plant) to the Tidewater Business Park, a high-end industrial condominium park. Portions of this target area lack infrastructure improvements such as paved roads and utilities lines. The Martin Luther King, Jr. Shoreline Park is along the bay side boundary of this target area.
4. East Bay MUD / Edgewater Sites. This target area consists of two major parcels. One site is a storage yard owned by the East Bay Municipal Utility District (East Bay MUD). This site has frontage along I-880, and is considered a prime retail site. East Bay MUD's Oakport Wet Weather Treatment Facility is adjacent to the storage yard. The Martin Luther King, Jr. Shoreline Park is along the bay side boundary of this target area.

The second site, 22 acres at Oakport and Hassler Way, consists of a parcel that has been bought by the City from the Port of Oakland, and a parcel containing the City's Municipal Center (corporation yard). A portion of this site is currently the subject of an EIR for a 250,000 square-foot, value-oriented retail complex that would be anchored by a Price/Costco store. This site also contains a public access trail to Martin Luther King, Jr. Regional Shoreline.

Elmhurst Industrial Planning District

This planning district is primarily heavy industrial. Many of the sites have obsolete industrial facilities that are underused or permanently closed, such as IMO Delaval and American Can. Many of the sites have toxic contamination problems. Within this planning district, there are several residential/industrial conflict and edge problems. The Elmhurst Industrial Planning District has four target areas, three of which are analyzed in this EIR (see descriptions below). The remaining target area, the IMO-Delaval Site is not addressed specifically.

5. Railroad Avenue Target Area. This target area is bounded by Railroad Avenue, 98th Avenue, Edes Avenue and vacant land. Within this area, homes are interspersed with, and often abut, heavy industrial uses, auto dismantling storage yards, and open industrial yards. Homes on Railroad Avenue front the Southern Pacific railroad tracks and the rear facades of industrial buildings facing San Leandro Street. Because there is no separation between residential and industrial uses, there are safety, noise, air pollution, parking, and loading conflicts.
6. Pippin/Pearmain Target Area. Along Pippin and Pearmain Streets, between San Leandro Street, 98th, Edes and 105th Avenues single-family homes are interspersed with industrial uses. Incompatible land uses in this residential pocket are similar to those described for the Railroad Avenue Target Area. Homes are adjacent to tire storage yards, canneries, and auto dismantling yards. Several vacant industrial lots are located throughout the neighborhood.
7. 81st Avenue Target Area. The 81st Avenue Target Area contains older, established heavy industrial and manufacturing uses. The area has stable, long-term Oakland businesses such as Mother's Cakes and Cookies, Sunshine Biscuits and Sconza Candies. The area has relatively poor access and roadways which need to be improved to better serve businesses in the area.

Coliseum/Hegenberger Planning District

This planning district is part of the gateway to the City which extends from the Metropolitan Oakland International Airport to the Hegenberger Road corridor. Key land uses are the Coliseum BART station and office, and retail and hotel uses along the Hegenberger Road corridor. This planning district contains three target areas that are addressed in this EIR (see descriptions below). A fourth target area, San Leandro Street, is not specifically included in the EIR analysis.

8. Coliseum BART Station Target Area. The Coliseum BART Station Target Area is bounded by Hawley Street, 69th Avenue, 76th Avenue, and the Southern Pacific Railroad tracks. The target area is a mixture of residential and industrial uses. The focus of the target area is the Coliseum BART Station. This station is surrounded by mostly industrial uses, although residential uses are located on the north side of the station.

There have been several studies concerning development of a BART-operated fixed guideway system to transport passengers between the Coliseum BART station and to the Oakland Airport. In addition, there is potential for multi-modal connections to the AMTRAK Capital Corridor line.

9. 98th Avenue Industrial Target Area. Ninety-eighth Avenue contains a mixture of industrial uses, including the new Waste Management of Alameda County Transfer Station, and several airport related uses such as long-term satellite parking lots, and car rental parking lots. With the completion of the 98th Avenue road widening project, this street will become a major route between I-580 and the airport. As a result, 98th Avenue has increased prominence as part of the portal to the City from the Oakland Airport. The current mixture of uses is not considered compatible with this image.
10. Airport Gateway Target Area. Within this target area the triangular area between Hegenberger Road, Doolittle Drive and Airport Drive contains several underused parcel. Uses include a motel, car rental facility, car wash, and several commercial

4.2 Land Use and Zoning Compatibility

uses, warehouses, industrial uses and vacant parcels. This location is considered the gateway to the City upon leaving the Oakland Airport. In its current configuration and use, this target area detracts from the importance of this area to the City.

4.2.2 Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project would normally be considered to have a significant effect on the environment if it were to disrupt or divide the physical arrangement of an established community. For visual quality, a project would be significant if it were to cause a substantial demonstrable negative aesthetic effect.

4.2.3 Impacts

Coliseum Redevelopment Area

By definition, the proposed Redevelopment Plan is intended to change the land use character of the Coliseum Redevelopment Area. These changes would result in new land use development, as well as improvements to existing uses within the study area. It is possible that proposed land use changes could occur without implementation of the Redevelopment Plan. However, private enterprise or City actions, working together or alone, would not be able to achieve land use changes necessary to eliminate economic and physical blight within the Coliseum Redevelopment Area in the foreseeable future. Implementation of the Redevelopment Plan would create a more compatible land use pattern, and upgrade the overall economic and physical conditions in the Coliseum Redevelopment Area.

By the year 2010, implementation of the proposed Redevelopment Plan could result in a net increase of 2.1 million square feet of retail, office, and industrial space and 700 new housing units. Table 4.2-2 summarizes the distribution of net new space within the proposed Coliseum Redevelopment Area.

The largest increase in new uses would be retail (35 percent), followed by almost equal amounts of office, industrial and residential. Almost 60 percent of the new retail development is proposed for large-scale, value oriented retail that would be located in the

TABLE 4.2-2

**ESTIMATED NET NEW LAND USE CHANGES WITHIN THE PROPOSED
COLISEUM REDEVELOPMENT AREA, 2010**

Land Use Category	Net New Sq. Ft.	Percent of Total
Retail	960,000 ^a	35%
Office	622,500	22%
Industrial	557,500	20%
Residential (700 units)	630,000 ^b	23%
TOTAL	2,770,000^c	100%

^a Almost 60 percent of retail space (550,000 sq. ft.) is proposed for "big-box," value oriented retail.

^b Assumes an average of 900 sq. ft. per residential unit.

^c Approximately 2,140,000 sq. ft. of net new retail, office and industrial space would be provided, and 700 total housing units. Total net new development, assuming 900 sq. ft. per housing unit, would be 2,770,000 sq. ft.

Source: Office of Employment and Economic Development, May 1994; and Pittman & Hames Associates, 1994.

4.2 Land Use and Zoning Compatibility

East Bay MUD / Edgewater Sites Target Area (Price/Costco store) and in the remainder area (not in a target area) in the vicinity of High Street / Alameda Avenue / I-880 (Super K-Mart Store).

The proposed Redevelopment Plan would also be expected to result in moderate changes to the transportation system, and in a net benefit in open space and recreation uses. Most of the open space changes would be landscaping and pedestrian plaza improvements in the Fruitvale BART Station Target Area, and landscaping improvements in the East Bay MUD / Edgewater Sites and Coliseum BART Station Target Areas.

Area-Wide Redevelopment Projects

In addition to projects aimed at specific target areas, the proposed Coliseum Area Redevelopment Plan would implement a number of land use-related strategies aimed at eliminating blight throughout the Coliseum Redevelopment Area.

Residential/Industrial Edge Buffers

The Redevelopment Plan includes a variety of strategies to soften the edge between industrial and residential uses, such as the prohibition of truck traffic through residential neighborhoods, strict enforcement of zoning to eliminate non-conforming industrial uses in residential zones, and buffering measures such as the installation of landscaping, sound walls or berms to minimize visual and noise problems in industrial/residential edge areas. Live-work units in new development or converted industrial buildings could also create a buffer between industrial and residential areas. Implementation of transitional buffers would minimize land use conflicts between residential and industrial uses.

Transportation / Public Facilities / Infrastructure Improvements

This strategy would provide capital for infrastructure improvements to support catalyst projects and other development activities.

Housing Construction, Rehabilitation, and Conservation

The Redevelopment Plan would provide capital for new residential construction, and for existing home maintenance and improvement programs. Implementation of this program would increase housing opportunities and stabilize existing residential neighborhoods. These improvements could increase property values throughout the Coliseum Redevelopment Area which is a concern of residents. Refer to Section 4.3 for a discussion of Housing.

Home Ownership

The Redevelopment Plan would provide capital to support Mortgage Assistance and First Time Buyers Homeowner Assistance Program.

Areawide Marketing Program

The proposed Redevelopment Plan could include an areawide marketing program to attract and retain business in the Coliseum Redevelopment Area. Part of the program would be identifying parcels available for development, and encouraging prospective business and developers to locate in the Coliseum Redevelopment Area. This aspect of the program would ensure that existing and proposed land uses are developed in a manner that is consistent with the overall goals of the Redevelopment Plan. Refer also to Section 4.3 for a discussion of business retention.

No significant adverse land use impacts would occur as a result of areawide redevelopment strategies such as buffering, housing rehabilitation, and marketing, which are intended to address existing land use conflicts, substandard conditions, and under-developed sites.

Redevelopment Plan Target Areas

A summary of land use changes by target area is presented in Table 4.2-3. These changes are described below. These changes are conservative numbers that include growth anticipated due to the Redevelopment Plan and existing market conditions. Thus these land use changes overpredict actual impacts; they are used for the employment, energy, public utilities, and

TABLE 4.2-3

LAND USE CHANGES IN THE COLISEUM REDEVELOPMENT AREA: YEAR 2010
BY TARGET AREA

Target Area	Net New Retail Space (SF)	Net New Office Space (SF)	Net New Industrial Space (SF)	Total Net New Space (Sq.Ft.) Retail, Office, Industrial	Net New Housing Units
1. Fruitvale BART Station	150,000	100,000	0	250,000	300
2. Elmwood Avenue	5,000	0	0	5,000	30
3. Tidewater Avenue	20,000	50,000	120,000	190,000	0
4. East Bay MUD / Edgewater Sites	350,000	117,500	87,500	555,000	0
5. Railroad Avenue	50,000	50,000	75,000	175,000	10
6. Pippin/Pearmain	15,000	60,000	0	75,000	60
7. 81st Avenue	0	60,000	100,000	160,000	0
8. Coliseum BART Station	20,000	125,000	0	145,000	0
9. 98th Avenue Industrial	25,000	0	75,000	100,000	0
10. Airport Gateway	25,000	50,000	50,000	125,000	0
Remainder Area (a)	300,000	10,000	50,000	360,000	300
TOTAL	960,000	622,500	557,500	2,140,000	700

Source: Office of Employment and Economic Development, May 1994; Pittman & Hames Associates, 1994.

(a) Remainder area includes the East 14th Street Corridor and Super K-Mart Site

public services analyses. For the transportation, noise, and air quality analyses, only the increment due to the Redevelopment Plan is analyzed. This is because for the traffic analysis, impacts due to the Plan must be subtracted from the cumulative forecasts for the area. Thus for conservative Redevelopment Plan-related impacts, the less traffic to be subtracted, the more conservative the analysis. It should be noted that as few as about 280 total housing units, and as little as about 800,700 square feet of retail, 398,500 square feet of office and 353,000 square feet of industrial space could be created due to implementation of the Redevelopment Plan. See Table 4.4-1 in Section 4.4.1, Traffic and Circulation, for a breakdown by geographic area for these land uses.

1. Fruitvale BART Station Target Area. Development within this target area would be a catalyst project for the proposed Redevelopment Plan. Redevelopment strategies could include infrastructure improvements new residential development, housing maintenance and improvement assistance, rezoning, facade improvements and code enforcement on East 14th Street, and lighting/landscape improvements. The Fruitvale BART Station Target Area is proposed for mixed-use, housing, retail and community services development. Proposed new development would total 250,000 square feet of retail and office space and 300 housing units.

Implementation of the Redevelopment Plan would alter the character and increase the intensity of uses, particularly residential uses, in the Fruitvale BART Station Target Area. However, these changes would have positive effects on citywide and regional land use by promoting more efficient land use patterns and infill housing in proximity to regional transit.

Outside of the Fruitvale BART Station Target Area, the East 14th Street corridor remainder area, would have the largest number of new housing units in the proposed Coliseum Redevelopment Area.

2. Elmwood Avenue. Redevelopment strategies include rezoning, landscaping; and buffering for residential/edge problems; infrastructure improvements; and new and rehabilitated parks, open spaces and libraries; and new Beat Health Substation. There would be a modest increase in retail space (5,000 sq. ft.) and 30 new housing units

4.2 Land Use and Zoning Compatibility

in this target area. Residential uses would be improved by phasing out non-conforming industrial uses and by providing landscape buffers between residential and industrial uses.

3. Tidewater Avenue. Redevelopment improvements would help establish this area for business park and light industrial uses. Proposed redevelopment strategies include infrastructure improvements to access roads and water lines to serve more intensive uses; acquisition and rehabilitation of parks, open spaces and libraries; and industrial land acquisition and development. Total development would be 190,000 net new sq. ft., including 120,000 sq. ft. of industrial, 20,000 sq. ft. of retail, and 50,000 sq. ft. of office space. Besides potential business relocation, impacts on existing uses would be minimal. Refer to Section 4.3.3 Population, Employment and Housing Impacts for a discussion of business relocation effects.
4. East Bay MUD / Edgewater Sites. The East Bay MUD / Edgewater Sites Target Area would include a retail catalyst project. Redevelopment strategies include industrial land acquisition and development. Actions could include rezoning from M-30 to a commercial classification, and relocating the City's Municipal Service Center (corporation yard). This site is targeted for regional serving, "big-box" or value oriented retail development containing approximately 350,000 square feet. Almost 60 percent of the total retail space proposed for the Coliseum Redevelopment Area would be contained in the East Bay MUD / Edgewater Sites Target Area. (A portion of this site is currently the subject of an EIR for development of a 250,000 square foot Price/Costco store.) Proposed redevelopment of this site would introduce regional serving retail to an area that is currently light industrial and business park use. At a program level of analysis, the introduction of retail would not be an incompatible use. In addition, this site is likely the best retail opportunity site in the Coliseum Redevelopment Area, due to its size, access and visibility from I-880. The potential issue of public access to the shoreline would be addressed in the project specific environmental review.
5. Railroad Avenue. Implementation of the proposed Redevelopment Plan would lessen residential and industrial land use conflicts in this target area. Redevelopment

strategies could include new residential development, rezoning, landscape buffers along the residential/industrial edge, housing maintenance and improvement assistance, and new Beat Health Substation. Approximately 10 new housing units, and 175,000 square feet of new retail, office and industrial space would be developed. Proposed redevelopment actions would improve land use compatibility in this target area.

6. Pippin/Pearmain. Redevelopment strategies in this target area include rezoning, better code enforcement, landscape buffers along the residential and industrial edge, new residential development, and a housing rehabilitation program. Approximately 60 new housing units, and 75,000 square feet of new retail, office and industrial space would revert from implementation of the Redevelopment Plan. Sixty live-work units could be developed in this target area which would provide a transition between industrial and residential uses. Implementation of the Redevelopment Plan would improve land use compatibility among industrial and residential uses within the target area.
7. 81st Avenue. Redevelopment strategies include rezoning, landscape buffers along the residential/industrial edge, industrial land acquisition and development, and a new Beat Health Substation. Also city streets could be repaved to provide better access and to encourage and stabilize existing businesses. Approximately 160,000 net new sq. ft. of office and industrial space would be developed. Land use impacts would be negligible, as no new uses are proposed and the amount of new development is compatible with existing uses.
8. Coliseum BART Station. Within this target area, strategies include new residential development, housing maintenance and improvement assistance, and industrial land acquisition and development. Proposed net new space totals 145,000 square feet of retail and office space.

In connection with this new development, the Coliseum BART Station Target Area has the opportunity for a multi-modal transportation center. A multi-modal facility would provide connections between an international transportation hub, the regional rail transit system, and inter-city rail system. If constructed, the airport connector

4.2 Land Use and Zoning Compatibility

project is anticipated to attract an estimated 401,400 annual riders in 2010, not including additional riders that would be attracted from the Capital Corridor line (BART/Port, 1993).

Because of the proximity of existing residential uses near the BART stations, redevelopment could introduce new land use conflicts (e.g., building scale, noise, local traffic, light/glare, parking conflicts, etc.). Such effects would need to be considered in the location, design and orientation of new commercial development. The potential for conflicts could be further increased if the proposed multi-modal facility is constructed.

9. 98th Avenue Industrial. The Redevelopment Plan proposes to revitalize the 98th Avenue corridor as a retail/office commercial corridor that serves as a gateway to the City from the Airport. To achieve these changes, the Redevelopment Plan proposes to relocate or buffer existing, inconsistent industrial uses. Implementing include infrastructure improvements to encourage business development; acquisition and rehabilitation of parks, open spaces, and libraries; and industrial land acquisition and development. An estimated 100,000 sq. ft. of new industrial and retail development is planned for this target area. Proposed changes would intensify and improve land use patterns, but would not substantially alter the types of land uses that currently exist.
10. Airport Gateway. The Airport Gateway Target Area would include a catalyst project for the proposed Redevelopment Plan. Implementation of the Redevelopment Plan would result in 125,000 square feet of retail, office and industrial space. Redevelopment strategies include industrial land acquisition and development. A catalyst project could be developed. Proposed changes would result in a more efficient use of land, and would not substantially alter the land use character of this area.

Remainder Area

Within the remaining portions of the Coliseum Redevelopment Area (not within a target area), approximately 300 housing units and 300,000 net new sq. ft. of retail, 10,000 sq. ft. of office and 50,000 sq. ft. of industrial space would be built. The retail space would be value-oriented retail. Much of the housing would be infill units along the East 14th Street corridor. The introduction of infill housing along East 14th Street would intensify housing uses along this retail corridor. Increased housing could be beneficial in stimulating and stabilizing retail activity along this street.

Land Use Compatibility Summary

The two target areas that would experience the most noticeable and substantial land use changes would be the Fruitvale BART Station and the East Bay MUD / Edgewater Sites Target Areas. Proposed redevelopment would increase the intensity or density in uses as well as change the land use mix in these areas. Other target areas would experience similar changes, but at more modest levels. As noted above, development at the Coliseum BART Station Target Area has the potential to create new residential land use conflicts, depending on the location and scale of new development, and the operation of the proposed intermodal facility.

Overall, implementation of the Redevelopment Plan would not disrupt or divide the physical arrangement of the Coliseum Redevelopment Area. Therefore, the proposed Redevelopment Plan would not cause a significant effect on land use under *CEQA* criteria. The Redevelopment Plan would alter the land use character, patterns and density in the Coliseum Redevelopment Area; however, these changes would improve the compatibility of diverse land uses in the study area by eliminating or reducing land use conflicts, and physical blight through the use of landscaping, housing rehabilitation and code enforcement measures.

Implementation of the Redevelopment Plan would improve the overall visual character of the Coliseum Redevelopment Area. There are four redevelopment activities that would improve the visual quality of the study area: 1) landscaping and buffering measures; 2) code enforcement; 3) rezoning; and 4) residential rehabilitation. Landscaping and buffering would

4.2 Land Use and Zoning Compatibility

visually screen incompatible uses and enhance views and general character of the study area from major public travel routes. Proposed rezoning could also improve the visual quality, particularly the development standards, and landscaping and setback requirements contained in the M-20 Light Industrial and C-13 Design Review combining zones. Code enforcement and residential rehabilitation programs would generally upgrade the visual appearance of the area by replacing older, poorly maintained structures and properties with new development that would conform to current planning code and design standards. However, the Redevelopment Plan does not address an existing problem with signs and billboards and their effect on visual quality. At a program level of analysis, the Redevelopment Plan would not cause a substantial negative aesthetic effect, and therefore would not result in significant visual impacts.

Zoning

By statute, the proposed Redevelopment Plan must be consistent with the *Zoning Ordinance* of the City of Oakland. Implementation of the Redevelopment Plan would require rezoning in seven of the ten target areas to permit proposed uses. Except for the M-20 Zone and the S-13 Mixed use Development Combining Zone, no specific rezoning classifications have been identified in the proposed Redevelopment Plan. No significant impact would occur, because the rezoning is intended to rectify existing or potential land use conflicts.

The proposed Redevelopment Plan could rezone portions of the study area to M-20 Light Industrial zone to form a buffer and transition between residential and commercial uses. The M-20 zone allows light industry, custom manufacturing, and commercial uses, and is intended to "create, enhance and preserve areas containing manufacturing and related establishments with limited external impact in an open and attractive setting, and is typically appropriate to locations adjacent residential communities." The development standards of the M-20 zone also provide for more landscaping. The S-13 Mixed Use Development Combining Zone could also be applied in transition areas between industry and residences to encourage live-work units and other residential uses in industrial areas.

Rezoning portions of the Coliseum Redevelopment Area to M-20 Light Industrial and S-13, Mixed-Use Development Combining Zone would require an amendment to the zoning code.

This change in zoning would not be considered a significant effect as it would improve land use patterns and compatibility in the Coliseum Redevelopment Area.

4.2.4 Mitigation

At a program-level of analysis, the proposed Redevelopment Plan would have a less-than-significant impact on land use, and no mitigation measures are warranted under *CEQA*. All development within the study area must be consistent with the *Zoning Ordinance* of the City of Oakland. Development at the Coliseum BART Station Target Area would be evaluated at a project-specific level for possible land use impacts, especially regarding intermodal facility and commercial impacts on residences. The following measures would reduce any potentially significant project-specific effects on land use compatibility to a less-than-significant level.

1. In addition to repaving roadways in the 81st Avenue Target Area, the Redevelopment Plan should provide pedestrian access between businesses on 81st Avenue and the Coliseum BART station. In addition to relatively poor roadway access, this area lacks paved sidewalks on 81st Avenue and San Leandro Street that could provide pedestrian access for workers employed in the 81st Avenue Target Area.
2. The Redevelopment Plan should include code enforcement for the location, height, and setback of signs within the study area. The height and mixture of signs throughout the Coliseum Area add to the visual blight of the Coliseum Redevelopment Area.
3. The Office of Employment and Economic Development (OEDE), on behalf of the Redevelopment Agency, should work with BART, Caltrans and the Port of Oakland concerning the BART Oakland Airport Intermodal connector project, to ensure that the proposed alignment, station designs, and potential intermediate station locations are compatible with the proposed Redevelopment Plan. The Coliseum BART Station Target Area has the potential to be a catalyst project for the Redevelopment Area, should the intermodal connector project be approved and constructed.

REFERENCES - Land Use

Bay Area Rapid Transit (BART) / Port of Oakland (Port), *BART-Oakland Airport Intermodal Connector Project*, December 1993.

Brady and Associates (Brady), *Coliseum Area Land Use Suitability Study*, March 1993.

City of Oakland (Oakland), *Oakland Zoning Regulation*, Ordinance 7248, revised through June 13, 1989.

Keyser Marston Associates (KMA), *Blight Analysis, Coliseum Redevelopment Study Area*, August, 1994.

4.3 POPULATION, EMPLOYMENT AND HOUSING

4.3.1 Environmental Setting

Population

According to the 1990 U.S. Census, the City of Oakland population is approximately 373,240. The Coliseum Redevelopment Area contained a total population of 29,990 or eight percent of the City's total. The majority of the population in the Coliseum Redevelopment Area and in the City are members of households. The study area, however, has a larger household size than the City as a whole. The average number of persons per household in the study area is 3.2, compared to a citywide average of 2.5. Table 4.3-1 shows population size and number of households for Alameda County, the City of Oakland and the Coliseum Redevelopment Area.

Distribution of population by race indicates that Coliseum Redevelopment Area residents are predominantly African American (68.6 percent) followed by Asian (11.2 percent), White (10.0 percent), Hispanic origin (9.3 percent), Native American (0.7 percent), and other (0.3 percent). Table 4.3-2 shows distribution of population by race and Hispanic origin.

A demographic profile of the Coliseum Redevelopment Area is presented in Table 4.3-3. Similar to the City as a whole, the Coliseum Redevelopment Area is comprised of almost equal male and female residents, 48.5 percent and 51.5 percent, respectively. The median age of residents is 28.3, slightly younger than the City's average age of 32.6. The age distribution of residents in the Coliseum Redevelopment Area is similar to the City's age distribution, although a higher percentage of the study area population is 15 years old or younger than in the City's distribution.

The proposed Redevelopment Plan would include a job training program for area residents. Household income and education level are indicators of the need for such a program. According to the 1990 U.S. Census, the median household income in the Coliseum Redevelopment Area was \$19,710, 37 percent less than the citywide median income of \$27,100. As reflected by income levels, 31 percent of Coliseum Redevelopment Area households receive public assistance income, compared to 18 percent throughout the City.

TABLE 4.3-1

**POPULATION AND HOUSEHOLDS IN ALAMEDA COUNTY, CITY OF
OAKLAND AND COLISEUM REDEVELOPMENT AREA**

Area	Population	Number of Households	Persons Per Household
Alameda County	1,279,182	480,079	2.6
City of Oakland	372,242	144,766	2.5
Coliseum Redevelopment Area	29,990	9,236	3.2

Source: U.S. Census of Population and Housing, 1990; Pittman & Hames, 1994.

TABLE 4.3-2

POPULATION BY RACE AND HISPANIC ORIGIN IN OAKLAND AND THE COLISEUM REDEVELOPMENT AREA

Race	City of Oakland		Study Area	
	Number	Percent	Number	Percent
White	120,849	32.5%	2,992	10.0%
Black	163,335	43.9%	20,563	68.6%
Hispanic ^a	54,931	14.8%	2,802	9.3% ^a
Asian	29,725	8.0%	3,345	11.2%
American Indian	2,371	0.6%	198	0.7%
Other	1,031	0.3%	90	0.3%
TOTAL	372,242	100.0%^b	29,990	100.0%^b

^a By census definition, persons of Hispanic origin can be of any race. The lower percentage of Hispanic population in the study area is probably attributable to the fact that one half of Census Tract 4061 is included in the study area. That census tract includes the Fruitvale community which has a high concentration (48 percent) of residents of Hispanic origin.

^b Totals do not equal 100 percent due to rounding.

Source: U.S. Census of Population and Housing, 1990; Pittman & Hames Associates, 1994.

TABLE 4.3-3

DEMOGRAPHIC PROFILE - COLISEUM REDEVELOPMENT AREA

Demographic Indicator	City of Oakland		Study Area	
	Number	Percent	Number	Percent
Population by Sex				
Male	178,824	48.0%	14,558	48.5%
Female	193,418	52.0%	15,432	51.5%
Median Age	32.6	--	28.3	---
Population by Age				
Under 5 Years	29,779	8%	2,999	10%
5 to 15 Years	52,114	14%	5,998	20%
16 to 65 Years	245,680	66%	17,994	60%
65+ Years	44,669	12%	2,999	10%
TOTAL	372,242	100.0%	29,990	100.0%
Education over age 25				
Less than 9th Grade	28,964	11%	3,280	25%
High School	180,120	66%	9,500	73%
College Education	65,850	24%	167	1%
Households with Public Assistance	25,781	18%	2,892	31%
Median Income	\$27,100		\$19,710	

Source: U.S. Census of Population and Housing, 1990; Population and Housing Characteristics for Census Tract and Block Numbering Area, San Francisco-Oakland-San Jose, CA CMSA; Pittman & Hames Associates, 1994.

4.3 Population, Employment and Housing

(For contrast, the percentage of public assistance in Alameda County as a whole is 10 percent.) Within the Coliseum Area, 56 percent of the residents have a high-school education, as compared to 74 percent citywide. An estimated five percent of Coliseum Redevelopment Area residents have two or more years of college education.

Employment

Economic Base

The Coliseum Redevelopment Area is one of the City's major centers of economic activity. Historically, the study area has been, and continues to be, the City's most important industrial corridor. Whereas Oakland manufacturing and wholesale activities account for 15.8 percent of all employment, in the Coliseum Redevelopment Area manufacturing and wholesale account for 29.4 percent, almost double the citywide total. Several nationally known manufacturers, such as Mothers Cakes and Cookies, Granny Goose Foods, Sunshine Biscuits, Quaker Oats, and Fleischman's Margarine & Yeast are located in the Coliseum Redevelopment Area. However, as in most local economies, small firms dominate the Coliseum Redevelopment Area. Census data indicates that 57 percent of the firms in the Area have fewer than four employees, however, larger firms dominate the employment base (CCCC, 1993).

Following national trends, during the late 1970s and early 1980s, the economy of the Coliseum Redevelopment Area began to decline. Many firms, especially those in traditional manufacturing, cut back operations, relocated or closed. As a consequence, firms such as Gerber Foods, General Electric, National Lead, American Can and IMO Deleval, along with numerous canneries, closed leading to employment decline. It is estimated that the Coliseum Redevelopment Area lost 20,000 manufacturing jobs during the last two decades (UOM Forum, 1989).

Coliseum Redevelopment Area Employment

According to the Association of Bay Area Governments, there were 197,610 total jobs in the City of Oakland in 1990. Of this total, 36 percent are in the service industry, 16 percent in

4.3 Population, Employment and Housing

manufacturing and wholesale trade, and 12 percent in retail. Approximately 37 percent of jobs are in the other category, which includes construction, transportation/utilities/communication, finance and real estate (FIRE) and government. Agriculture and mining comprised less than one percent of total jobs.

Employment in the Coliseum Redevelopment Area differs from that of the city primarily in the distribution of jobs in wholesale and manufacturing, and in the service categories. The Coliseum Redevelopment Area has 29 percent of its jobs in manufacturing and wholesale, almost double the rate in the City as a whole. The Coliseum Redevelopment Area also has a lower percentage of service jobs, while the distribution of retail jobs are similar to the City. The "other" job category is also similar to the City, however, based on land use patterns, it can reasonably be expected that Coliseum Redevelopment Area jobs are concentrated in transportation, construction and utilities, instead of FIRE, construction and government sectors.

The distribution of employment by industry for the City of Oakland and the study area is shown in Table 4.3-4.

The total number of jobs in the Coliseum Redevelopment Area has declined in the past decade, with the most dramatic decrease in manufacturing and wholesale jobs. Between 1980 and 1990, manufacturing and wholesale jobs declined from, 17,072 to 8,967, a 48 percent decrease. Total employment declined in all sectors, between 1980 and 1990, from 35,539 to 30,526, an overall decline of 14 percent. The decrease in manufacturing and wholesale jobs has had a disproportionate effect on the Coliseum Redevelopment Area residents, most of whom are minorities.

In May 1994, the official unemployment rate in the City of Oakland was reported at nine percent. Coincidentally, this is the same as the City's civilian unemployment rate reported in the 1990 U.S. Census. In contrast, the 1990 U.S. Census reported civilian unemployment in the Coliseum Redevelopment Area at 17 percent.

The actual unemployment rate is likely to be higher, due to discouraged workers who are no longer actively seeking employment. The number of discouraged workers can be estimated

TABLE 4.3-4

DISTRIBUTION OF EMPLOYMENT BY INDUSTRY IN OAKLAND AND THE PROPOSED COLISEUM REDEVELOPMENT AREA

Industry	City of Oakland		Study Area	
	Number	Percent	Number	Percent
Agriculture/Mining	500	^a	109	^a
Manufacturing/Wholesale	31,170	15.8%	8,967	29.4%
Retail	22,960	11.6%	3,171	10.4%
Services	70,300	35.6%	6,397	21.0%
Other ^b	72,680	36.8%	11,203	36.7%
TOTAL	196,610	100.0%^c	30,526	100.0%^c

^a Less than one percent.

^b Includes Finance, Insurance and Real Estate; Transportation and Utilities; Construction; and Government.

^c Totals do not equal 100 percent due to rounding.

Source: Association of Bay Area Governments, Projection '94; Pittman & Hames Associates, 1994

4.3 Population, Employment and Housing

by assuming that the difference between the City and the study area in labor rate participation for persons 16 years and older is due to discouraged workers. These workers are not accounted for in unemployment estimates. In 1990, labor force participation (for the population 16 years and older) was 63 percent in the City of Oakland; in the Coliseum Redevelopment Area, the labor force participation rate was 52 percent. Therefore, there are about 2,340 discouraged workers in the study area which, if added to unemployed workers, would yield an unemployment rate of about 38 percent in the Coliseum Redevelopment Area.

Business Retention

In response to employment decline, the City of Oakland launched a business retention program in the Coliseum Redevelopment Area in 1989. The program is conducted by the Oakland Commerce Corporation (formerly the Coliseum Commerce Corporation). Business retention is aimed toward retaining firms and jobs on a case-by-case basis, based on a system of early warning, a hands-on response team, and individualized retention strategies. The emphasis in business retention stems from the fact that roughly 70 percent of local employment growth is generated by the expansion of local firms (Commerce, 1989).

In addition, a portion of the Coliseum Redevelopment Area has been designated as an Enterprise Zone Targeted Industrial Area. The Enterprise Zone provides for incentives that are designed to simulated economic activity within targeted areas, including business retention and the creation of jobs for disadvantaged residents within the Enterprise Zone.

Housing

The 1990 Census indicates that the City of Oakland has a total of about 154,740 housing units, of which 93 percent are occupied. Of the occupied units, 42 percent were owner-occupied and 58 percent were renter-occupied. About seven percent were condominium units.

The Coliseum Redevelopment Area has a total of 9,213 occupied housing units. The study area has a relatively high percentage of owner occupied housing; an estimated 4,213 units or

4.3 Population, Employment and Housing

46 percent were owner-occupied, and 54 percent were renter-occupied. Less than one percent of housing units in the study area are condominiums, compared to seven percent citywide.

The study area has a relatively large number of publicly assisted housing units. In addition to 700 units scattered throughout the Coliseum Redevelopment Area, there are four public housing complexes each containing almost 100 units or more. These are: 1) Coliseum Gardens at 66th and East 14th (178 units), 2) Lockwood Gardens at 1325 65th Avenue (372 units), 3) Palo Visa Gardens at 1100 64th Avenue (100 units), and 4) Tassafaronga at 919 85th Avenue (99 units).

The proposed Redevelopment Plan would include a housing rehabilitation program to stabilize neighborhoods and improve the condition and appearance of units throughout the study area. Housing rehabilitation indicators include the age of the housing stock, overall housing conditions, the condition of vacant units, and the number of vacant units that are boarded up.

Within the City of Oakland, over half (55 percent) of the housing stock was constructed before 1950, which is similar for the study area (54 percent). Almost 38 percent of the City's housing stock is more than 50 years old. About 10 percent of the Oakland housing stock was considered to be substandard based on a 1992 City survey of the condition of housing structures. At the time of this survey, 9.4 percent of the housing units were found to be deteriorating but suitable for rehabilitation, and less than one percent were considered so dilapidated that rehabilitation was infeasible (Oakland, 1982).

The City of Oakland has 10,216 vacant units, or a vacancy rate of 6.6 percent. In comparison, the Coliseum Redevelopment Area has 850 units which is equivalent to a 8.4 percent vacancy rate. The City of Oakland has rated the condition of its vacant housing. In 1988, it was found that 24 percent of the vacant single-family homes were in good condition, 44 percent were in fair condition, and 31 percent were in poor condition. No assessment was made in that survey of the feasibility of rehabilitating units that were substandard (Oakland, 1992).

The proposed Redevelopment Plan could affect property values in the Coliseum Redevelopment Area. Housing prices and affordability are indicators of how increased

4.3 Population, Employment and Housing

housing values may affect existing residents. The median housing value in the City of Oakland is \$177,400 which is 53 percent higher than housing values in the study area of \$83,835. However, the citywide median contract rent is \$485, which is 18 percent higher than the study area's contract rent of \$397. The disproportionate spread between housing prices and contract rents indicates that Coliseum Redevelopment Area residents are required to pay more of their incomes for rental housing.

The mean household income among homeowners within the City is \$53,450, compared to \$24,950 for renters. Within the study area, the mean household income for homeowners is \$30,200 and \$19,130 for renters. This means that homeowners' incomes are 53 percent higher than renters' incomes citywide, and 37 percent higher in the Coliseum Redevelopment Area.

Table 4.3-5 summarizes housing characteristics for the City of Oakland and the Coliseum Redevelopment Area.

4.3.3 Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project will normally have a significant effect on the environment if it will "induce substantial growth or concentration of population," or "displace a large number of people." In addition, *CEQA Guidelines* state that an economic or social change by itself is not to be considered a significant effect on the environment. Thus, for purposes of this EIR, only those population impacts (including those related to a change in the number of employees and residents) that were to cause a substantial adverse physical change to the environment would be considered to be significant. Displacement impacts would be considered to be significant if a substantial number of businesses or residences were acquired or relocated through eminent domain powers.

TABLE 4.3-5

HOUSING CHARACTERISTICS - COLISEUM REDEVELOPMENT AREA

Characteristic	City of Oakland		Study Area	
	Number	Percent	Number	Percent
Total Housing Units	154,737	--	10,062	--
Occupied Housing Units	144,521	--	9,213	--
Owner Occupied	60,153	42%	4,213	46%
Renter Occupied	84,368	58%	5,000	54%
Single-Family ^a	74,864	49%	6,476	64%
Multi-Family ^a	77,787	51%	3,303	36%
Percent Built Before 1950---	---	55%	---	54%
Vacant Units	10,216		850	
Vacancy Rate	---	6.6%	---	8.5%
Vacant Units Boarded Up	616	6.0%	55	6.5%
Median Value Owner-Occupied	\$177,400	--	\$83,835	--
Median Contract Rent	\$570	--	\$397	--

^a Does not include trailers or mobile homes.

Source: U.S. Census of Population and Housing, 1990; Population and Housing Characteristics for Census Tract and Block Numbering Area, San Francisco-Oakland-San Jose, CA CMSA; Pittman & Hames Associates, 1994.

4.3.4 Impacts

Population

Coliseum Redevelopment Area

Implementation of the proposed Redevelopment Plan would increase population in the City of Oakland due to: 1) proposed new housing construction in the Coliseum Redevelopment Area, and 2) workers employed by jobs created in the Coliseum Redevelopment Area who may choose to locate in Oakland. The proposed Redevelopment Plan would add an estimate 700 net new housing units in the Coliseum Redevelopment Area. Assuming 3.0 persons per household, this would add an estimated 2,100 residents to the study area.¹

In 2010, these 2,100 net new residents would represent a 6.4 percent population increase in the Coliseum Redevelopment Area population, and a less than one percent population increase in the City of Oakland.

Implementation of the Redevelopment Plan would create an estimated 5,000 net new jobs. Based on these employment projections, the Redevelopment Plan could add 590 to 1,900 residents within the City of Oakland who would be workers that choose to locate in Oakland. The lower number of 590 is based on a strong local hiring goal of 35 percent (see employment discussion below). The upper number of 1,900 is based on the existing percentage of Oakland workers who reside in Oakland. The actual number of new residents attributable to employment is likely to fall within this range. This is particularly true because of the relatively large proportion of retail jobs that would be created by the Redevelopment Plan; these jobs are traditionally held by workers with less than a seven mile commute.

¹ The household size of 3.0 persons was derived by looking at: 1) population per household trends in the City of Oakland between 1990 and 2010 which ranged between 2.5 and 2.6, 2) the household size of 3.3 in the Coliseum Redevelopment Area, and 3) accounting for the fact that most units that would be built under the Redevelopment Plan would be infill housing that likely would have smaller households than currently exist in the study area.

Target Area Population

Housing development is proposed in four of the ten target areas, plus the remainder area (not in a target area). Approximately 86 percent of residential population growth would occur equally in the Fruitvale BART Station Target Area (43 percent) and in the remainder area (43 percent). However, population growth in the Fruitvale BART Station Target Area would receive a higher population concentration. Population growth in the remainder area would be dispersed along the East 14th Street corridor.

In the year 2010, the population increase attributed to the Redevelopment Plan would represent less than one percent of the City's total population. However, in the Fruitvale BART Station Target area, there would be a higher concentration of increased population. From a housing, transportation and land use perspective, it is reasonable to have a higher density of population and housing in proximity to the regional transit system and community services proposed for development in this target area. This is commonly referred to as "transit-oriented" development. The effects of this increased population could be addressed through project-specific design features and environmental review. The increased population would be a less-than-significant effect.

Employment

The proposed Redevelopment Plan in itself would not create jobs. The Redevelopment Plan would, however, foster job creation through: 1) implementation of land use changes and improvements, and 2) economic development strategies and activities that would retain existing businesses and attract new firms to the area.

Coliseum Redevelopment Area Employment

Based on proposed land use changes, 5,007 net new jobs would be generated in the Coliseum Redevelopment Area. Of this total, 2,264 (45.2 percent) would be office jobs, 1,923 (38.4 percent) would be retail jobs; and 820 (16.4 percent) would be industrial jobs. Table 4.3-6 shows net new employment attributable to the proposed Redevelopment Plan. The analysis for energy consumption, public utilities and public services are based on these employment

TABLE 4.3-6

**NET NEW EMPLOYMENT ATTRIBUTABLE TO LAND USE CHANGES IN
THE COLISEUM REDEVELOPMENT AREA**

Employment Category ^a	Total Number	Percent
Retail	1,923	38.4%
Office	2,264	45.2%
Industrial	820	16.4%
TOTAL	5,007	100.0%

^a Employment estimates were derived from the following factors per employee: retail - 425 sq. ft.; value oriented retail - 670 sq. ft.; office - 275 sq. ft.; industrial - 680 sq. ft.

Source: Pittman & Hames Associates, 1994.

4.3 Population, Employment and Housing

numbers. It should be noted that as few as 3,614 (or about 3,610) of these jobs may be directly attributable to the Redevelopment Plan.

Employment estimates are based solely on anticipated land use changes that would occur within the proposed Redevelopment Area. The Coliseum Redevelopment Area could also attract new jobs due to redevelopment strategies that attract new businesses, retain businesses, or improve the overall business climate and image of the Coliseum Redevelopment Area. These strategies would permit existing businesses to operate more efficiently and possibly expand, or would attract new firms to the area that could locate in vacant or underused sites.

Table 4.3-7 presents employment forecasts by sector in the proposed Redevelopment Area for the years 1995 and 2010. These forecasts include ABAG projected employment growth and employment growth attributable to the Enterprise Zone Targeted Industrial Area. Overall, implementation of the Redevelopment Plan would result in a 13.4 percent increase in net new jobs within the Coliseum Redevelopment Area by the year 2010. This would represent a 2.3 percent increase in total City jobs by 2010.

With the proposed Redevelopment Plan, the largest job growth would occur in the retail sector. This is especially important for the Coliseum Redevelopment Area, because these job opportunities would require minimal training and could employ area-wide residents immediately. The second growth would occur in the service sector, which are traditionally "white-collar" jobs. Without employment training and local-hiring job incentive programs, Coliseum Redevelopment Area residents would have fewer job opportunities in this sector.

Longer term job opportunities would also be provided by the Redevelopment Plan. An areawide employment program would be implemented as part of the proposed Redevelopment Plan. An important component of the program would be to train Coliseum Redevelopment Area residents for the current and future job market, thus providing long-term job growth opportunities. In addition, the Redevelopment Plan would include an area-wide marketing program aimed at retaining existing businesses and attracting new industry to the area.

Not all of the approximate 5,000 new jobs created in the proposed Redevelopment Area would go to existing Oakland residents. Currently, almost 60 percent of jobs in Oakland are

TABLE 4.3-7

DISTRIBUTION OF EMPLOYMENT BY INDUSTRY, YEAR 2010 WITHOUT REDEVELOPMENT PLAN AND 2010 WITH REDEVELOPMENT PLAN, COLISEUM REDEVELOPMENT AREA

Industry	Base 1995 ^a	Without Plan 2010 ^b	With Plan 2010 ^c	Percent Change With Plan, 2010
Agriculture/Mining	74	32	32	-----
Manufacturing/Wholesale	7,381	12,653	13,473	6.48%
Retail	2,405	3,855	5,778	49.9%
Services	6,373	7,721	9,985	29.3%
Other ^d	11,203	13,149	13,149	-----
TOTAL	27,436	37,410	42,417^e	13.4%

^a Association of Bay Area Governments (ABAG) employment projections.

^b ABAG employment projections, plus projected employment growth in the Enterprise Zone Targeted Industrial Area.

^c Proposed Redevelopment Plan added to ABAG employment projections and Enterprise Zone Targeted Industrial Area employment; plus proposed Redevelopment Plan.

^d Includes Finance, Insurance and Real Estate; Transportation and Utilities; Construction and Government.

^e The 5,007 jobs resulting from the Redevelopment Plan would represent a 2.3 percent increase in total Oakland jobs by the year 2010.

Source: Association of Bay Area Governments, Projection '94; Pittman & Hames Associates, 1994

4.3 Population, Employment and Housing

held by non-Oakland residents. While it is not possible to estimate the number of Oakland jobs that would be captured by Coliseum Redevelopment Area residents, existing job/residency patterns can help assess the potential number of jobs that would be held by Oakland and Coliseum Redevelopment Area residents. Assuming that new jobs created would have similar worker residency patterns, an estimated 2,050 new jobs would be held by Oakland residents. The number of jobs held by existing Oakland residents would be slightly less.

The proposed Redevelopment Plan would include an employment training program for Coliseum Redevelopment Area residents. Residents who become employed through this program would likely come from the pool of "discouraged workers" who would otherwise remain unemployed. In addition, the areawide marketing program and job training program could include a "hire Oakland first" employment policy that would provide employment priority to Oakland and Coliseum Redevelopment Area residents. Assuming a 35 percent local hiring goal, an additional 1,750 jobs could be targeted for Oakland residents.

Target Area Employment

The distribution of new jobs in the Coliseum Redevelopment Area by target area is shown in Table 4.3-8. Approximately 22 percent, the largest number of new jobs, would occur in the East Bay MUD / Edgewater Sites Target Area, followed by 14 percent of total jobs in the Fruitvale BART Station Target Area. Approximately 800 jobs would be created in the remainder area (not in a target area), which represents 16 percent of total jobs.

Indirect Employment

Implementation of the Redevelopment Plan would create indirect (or secondary) employment from the employment multiplier effect. These employment impacts would be expected to result from increased employment attributable to the proposed Redevelopment Plan. To determine secondary employment effects of the proposed Redevelopment Plan, economic multipliers from the Bay Area Input-Output model were applied to the direct employment generated by the Redevelopment Plan (ABAG, 1987).

TABLE 4.3-8

ESTIMATED NEW JOBS
COLISEUM AREA REDEVELOPMENT PLAN, 2010

Target Area	Net New Retail Employees	Net New Office Employees	Net New Industrial Employees	NET NEW EMPLOYEES (Retail, Office Industrial)
1. Fruitvale BART Station	345	364	0	709
2. Elmwood Avenue	11	0	0	11
3. Tidewater Avenue	46	182	176	404
4. EBMUD/Edgewater Sites (a)	522	427	129	1,078
5. Railroad Avenue	115	182	110	407
6. Pippin/Pearmain	34	218	0	252
7. 81st Avenue	0	218	147	365
8. Coliseum BART Station	46	455	0	501
9. 98th Avenue Industrial	57	0	110	167
10. Airport Gateway	57	182	74	313
Remainder Area (b)	690	36	74	800
TOTAL	1,923	2,264	820	5,007

Factors:

- Retail 1 employee/435 sq.ft.
- Big Box Retail 1 employee/670 sq.ft.
- Office 1 employee/275 sq.ft.
- Industrial 1 employee/680 sq.ft.

(a) Big box retail area

(b) Remainder includes East 14th Street Corridor and Super K-Mart Site

Source: Pittman& Hames Associates 1994

4.3 Population, Employment and Housing

Using a commercial multiplier of 1.35, the 4,190 retail and office jobs created by the proposed Redevelopment Plan would generate approximately an additional 1,590 indirect jobs. An industrial multiplier of 1.42 was applied to the 820 industrial jobs, for approximately 345 indirect jobs. Total secondary employment resulting from the proposed Redevelopment Plan would be 1,935. Total primary and secondary employment would be 6,940. (It should be noted that if only 3,610 direct jobs were attributable to the Redevelopment Plan, then there would be about 1,820 indirect jobs created for a total primary and secondary employment of about 5,430.)

Housing

This section analyzes housing impacts of the proposed Redevelopment Plan. Three aspects of housing are addressed: 1) the impact of housing provided by the Redevelopment Plan on the Oakland and Coliseum Redevelopment Area housing markets; 2) the effect of employment growth attributable to the Redevelopment Plan on the housing market, including the jobs-to-housing balance; and 3) the Redevelopment Plan's conformity to the Housing Element of the *Oakland Comprehensive Plan*.

Housing Market

The proposed Redevelopment Plan would provide 700 net new housing units. This represents less than one percent of the total existing number of housing units in the City of Oakland, and seven percent of total housing units in the Coliseum Redevelopment Area. Most housing units would be located in the Fruitvale BART Station Target Area, and within the remainder area (not in a target area) along the East 14th Street corridor.

Housing provided in the Coliseum Redevelopment Area could involve a mixture of unit and income types. Because most of the housing would be infill development, it is likely that units would be attached, or multi-family structures. Existing area residents are concerned about the potential for the Redevelopment Plan to increase property values and rents, thereby creating an economic hardship or possible displacement (gentrification). In this regard, the Community Redevelopment Law (Section 33334.3) requires that not less than 20 percent of all tax increment funds be used for the purpose of increasing, improving and preserving the supply of housing for low or moderate, and very-low income households. However, the

proposed Redevelopment Plan could, over time, transform the residential character of the Coliseum Redevelopment Area. This transformation would be likely to occur slowly, and beyond the 15-year analysis period contained in this EIR.

Employment Generated Housing Demand

Employment generated by the proposed Redevelopment Plan would also create a demand for housing in the City of Oakland. Assuming that these new employees would have an employment/residency similar to existing conditions, implementation of the Redevelopment Plan would create a demand for up to 725 housing units. This excess demand could be met by current vacant housing units in Oakland. As of 1994, there were 10,134 vacant units, which represents a 6.6 percent vacancy rate. With implementation of the proposed Redevelopment Plan and absorption of an additional 725 housing units, the vacancy rate would be reduced to 6.1 percent.

Jobs-to-Housing Balance

The jobs-to-housing balance indicates the opportunity for employed residents to work in the same community in which they reside. The jobs-to-housing balance in Oakland in 1990 was 1.91, which is the equivalent of about 1.25 jobs for each employed resident. Therefore, Oakland currently has a jobs-to-housing surplus. The approximate 5,000 jobs generated by the proposed Redevelopment Plan would increase the jobs-to-housing balance to 1.22. This would not be a significant impact

Housing Element

The Housing Element of the *Oakland Comprehensive Plan* contains a number of goals and policies that are important to the proposed Redevelopment Plan. These policies are identified in Section 4.1 Policy Compliance. At a program level of analysis, the Redevelopment Plan would be consistent with the Housing Element of the *Oakland Comprehensive Plan*. Specifically the Redevelopment Plan would be consistent with *Oakland Comprehensive Plan* policies which call for improving and rehabilitating existing housing stock; providing for urban, infill development; providing housing near the BART stations; providing low and

4.3 Population, Employment and Housing

moderate income housing opportunities; and avoiding the taking of residential property through eminent domain.

Business and Residential Relocation and Property Acquisition

In order to implement the proposed Redevelopment Plan, acquisition and relocation of businesses and residences may be necessary. However, the Plan would specifically provide that the Redevelopment Agency would not have the authority to acquire residential property through eminent domain. At a program level of analysis, it is not possible to determine the numbers, locations, and types of properties that would be acquired and/or relocated by the Redevelopment Plan.

As required by the *Community Redevelopment Law*, the City of Oakland Redevelopment Agency would provide relocation assistance and benefits and acquire property in accordance with the *California Relocation Assistance Act* of 1970. This act provides for relocation benefits for commercial and residential properties and just compensation for property acquisition.

Business and residential displacement would also have indirect effects such as displacing low-income residents who would have limited housing choices, and displacing existing long-term manufacturing jobs, the traditional employment core of the Coliseum Redevelopment Area. These effects cannot be predicted, and would be addressed through the 20 percent set aside for low and moderate-income housing, and through business retention and expansion components of the Redevelopment Plan. At a program-level of detail and analysis, relocation and property acquisition impacts would not be significant.

Impact Summary

The new population, employment and housing growth associated with implementation of the proposed Redevelopment Plan would have less-than-significant effects on the environment. Overall, this growth would have a positive effect on the City and the businesses and residents in the Coliseum Redevelopment Area.

4.3.4 Mitigation

As no significant adverse impacts have been identified, no mitigation measures are warranted under the *California Environmental Quality Act (CEQA)*.

REFERENCES - Employment, Population, and Housing

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4.4 TRAFFIC AND CIRCULATION

4.4.1 Environmental Setting

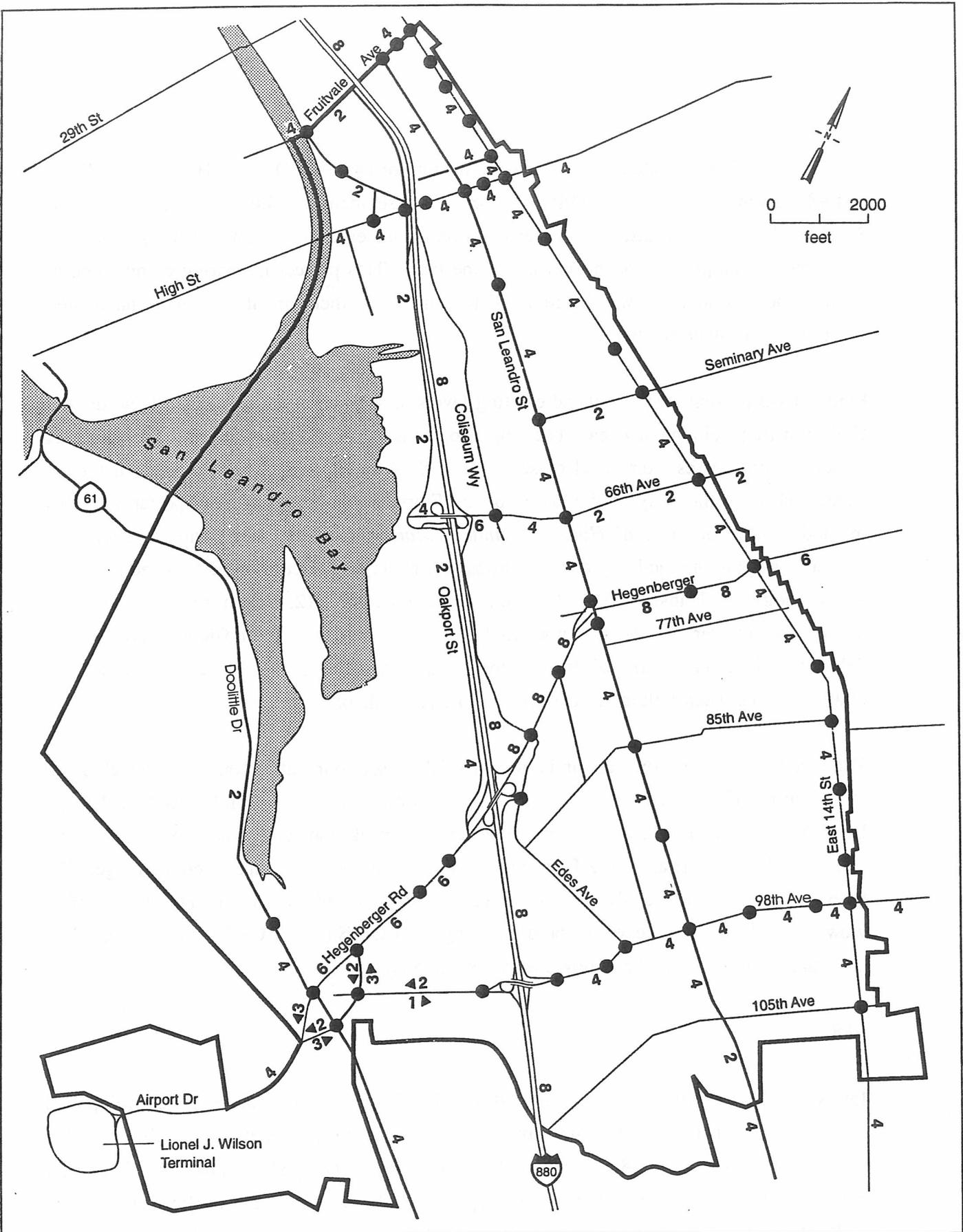
The Coliseum Redevelopment Area is served with five transportation modes available for transporting both people and goods. The area is accessible by roadways, transit services, two railroad lines, Metropolitan Oakland International Airport, and water at the Port of Oakland. Existing conditions of each of these modes and existing problem locations on the street network are described below. Also discussed is parking demand at Redevelopment Plan target areas.

Roadways

Following the City of Oakland's convention in the area to describe the downtown as west and City of San Leandro as east, the Coliseum Redevelopment Area is served by Interstate 880 (I-880), three major east-west arterials (East 14th Street [State Route 185], San Leandro Street, and Doolittle Drive [State Route 61]), and five major north-south streets (Fruitvale Avenue, High Street, 66th Avenue, Hegenberger Road, and 98th Avenue). These streets and several connector streets (Oakport Street, Seminary Avenue) are described below. Several of the major roadways are designated as truck routes through the area. These routes have been designed to handle truck traffic with the minimum possible impact on traffic and surrounding sensitive receptors (such as residences).

Figure 4.4-1 presents the existing daily traffic volume on the major streets within the Coliseum Redevelopment Area. These volumes have been derived from ten 48-hour counts and six short-duration sample counts taken for this analysis by Dowling Associates, and numerous other existing counts available from the City of Oakland and other published traffic studies. In some instances, peak-hour counts were expanded to daily volumes using percentages derived from the available 24-hour counts. The six short-duration counts were expanded to daily volumes using expansion factors derived from the 48-hour counts.

Figure 4.4-2 shows the existing number of traffic lanes on the key streets within the Coliseum Redevelopment Area. Two street segments have unbalanced lanes at this time and are shown



Project No. 93C0508A	Coliseum Area Redevelopment Plan	EXISTING TRAFFIC LANES AND TRAFFIC SIGNALS	Figure 4.4-2
Woodward-Clyde Consultants			

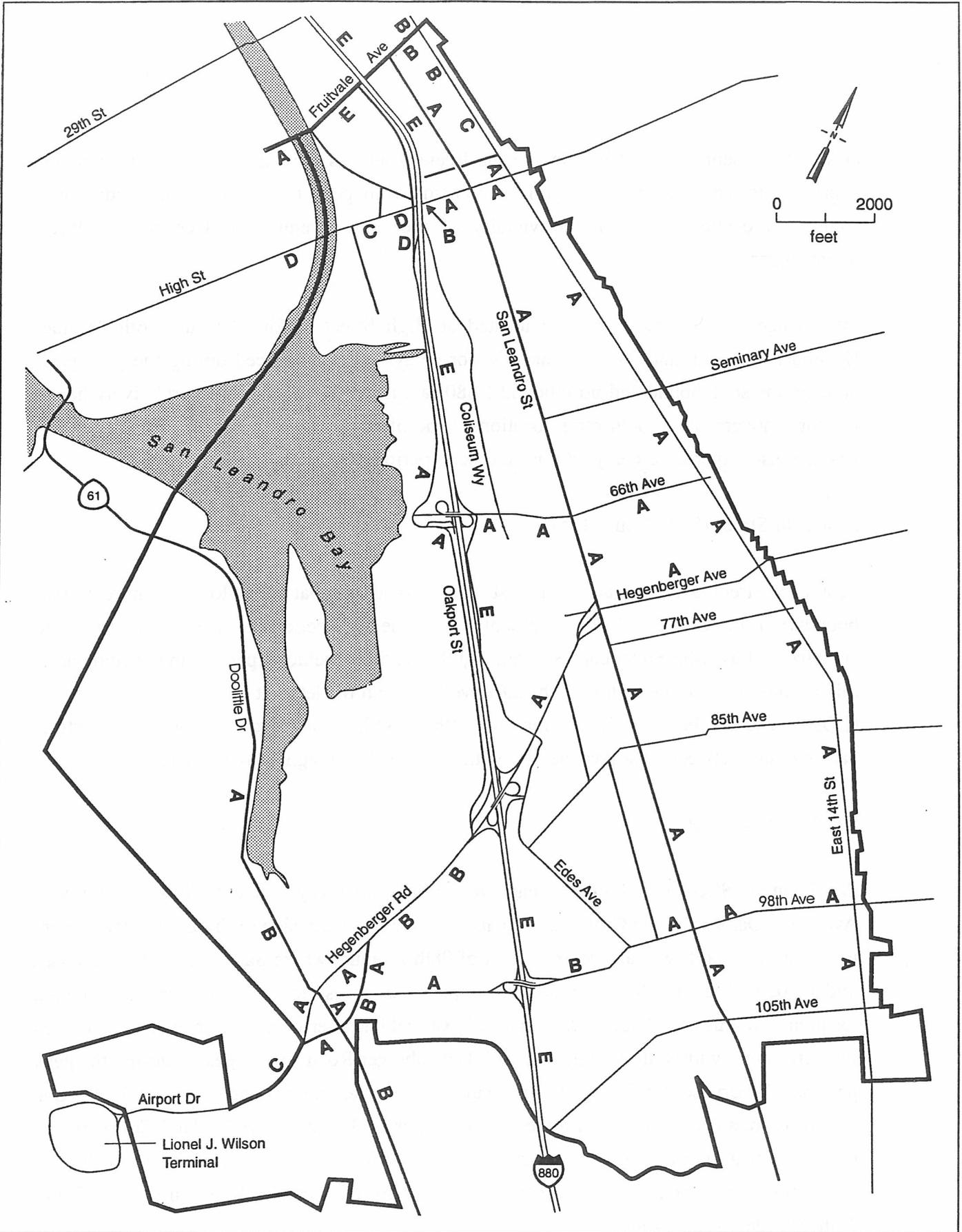
accordingly. They include Airport Drive from south of Doolittle Drive to Hegenberger Road and 98th Avenue from Airport Drive to I-880. The segment of 98th Avenue from north of San Leandro Street to East 14th Street is currently under construction and the southbound direction has temporarily been reduced to one lane. This project is nearing completion, at which time this segment will be returned to four lanes; therefore it is shown and treated herein as a four-lane roadway.

Figure 4.4-3 presents the calculated existing levels of service on the major streets within the Coliseum Redevelopment Area. The degree of congestion and delay increases as the level of service progresses from level of service (LOS) A to LOS F. Street capacity has been calculated using the daily methodology of the Florida Department of Transportation. This method is based on the 1985 *Highway Capacity Manual* and is used by various agencies for capacity analysis and facility planning purposes. Levels of service were determined using the methodology of Transportation Research Board Circular 212, which relates volume-to-capacity ratio to service levels. Appendix E, Table E-1 describes the traffic levels of service, Table E-2 is a tabulation of the roadway capacity values, and Table E-3 shows the relationship between volume to capacity ratio and levels of service.

The levels of service shown are an indication of the peak hour traffic conditions which occur at the daily traffic volume levels carried by the specific streets. Generally, LOS A through LOS D are considered to be the acceptable range of peak hour congestion for urban streets and arterials. LOS E and LOS F are usually considered to be the unacceptable range. For freeways, because traffic still moves at relatively good speeds, LOS E conditions are often viewed as tolerable; however, as the upper range of LOS E (near LOS F) is approached, the potential for traffic flow breakdown increases greatly.

I-880

Interstate 880, the Nimitz Freeway, provides regional access to the Coliseum Redevelopment Area extending from I-80 and the Bay Bridge to the north and extending southerly to San Jose. In the study area, I-880 is an eight-lane freeway carrying about 170,000 vehicles per day. This volume is near the freeway's capacity (LOS E) and, while traffic usually flows well during peak hours, slow downs can occur due to even minor incidents. Events at the



Project No. 93C0508A	Coliseum Area Redevelopment Plan	EXISTING LEVELS OF SERVICES	Figure 4.4-3
Woodward-Clyde Consultants			

Oakland Coliseum add traffic flows to the freeway and its interchanges during arrival and departure periods. When these periods coincide with peak traffic flow times, additional congestion occurs at and in the vicinity of the 66th Avenue and Hegenberger Road interchanges.

Interchanges in the study area are located at High Street / 42nd Avenue, 66th Avenue, Hegenberger Road, and 98th Avenue. Major delays are experienced during the p.m. peak hour on the southbound and northbound I-880 ramps at High Street due to relatively heavy left-turn movements at both ramp locations. The off-ramps at Hegenberger Road and 98th Avenue also experience delays during the peak period.

East 14th Street (State Route 185)

East 14th Street is a four-lane east-west arterial roadway that runs along the northeastern boundary of the Coliseum Redevelopment Area. The intersections at major cross streets are signalized. East 14th Street carries about 22,000 to 25,000 vehicles per day in the study area; this is considered a moderately high traffic volume, and the level at which minor congestion (LOS D) occurs. In the Fruitvale area East 14th Street is a commercial district with on-street parking, and between 81st Avenue and 90th Avenue it is a signed truck route.

San Leandro Street

San Leandro Street is a four-lane east-west arterial roadway that extends from Fruitvale Avenue in Oakland to the City of San Leandro along the south side of the BART line. There is a relatively short two-lane segment east of 98th Avenue, where San Leandro Street passes under 105th Avenue. San Leandro Street provides access to both local and subregional locations. It carries between 12,000 and 20,000 vehicles per day. The intersections of San Leandro Street with 98th Avenue and with Hegenberger Road are congested during the peak periods. Otherwise, traffic along San Leandro Street has minor congestion (LOS D). San Leandro Street is a signed truck route through the area. Events at the Oakland Coliseum add traffic flows during arrival and departure periods. When these periods coincide with peak traffic flow times, additional congestion occurs along San Leandro Street in the vicinity of 66th Avenue and Hegenberger Road.

Doolittle Drive (State Route 61)

Doolittle Drive is an east-west arterial roadway running between Alameda and San Leandro. It is a two-lane roadway from its crossing of the San Leandro Channel to Swan Way. From Swan Way east to San Leandro, it becomes four lanes. It carries between 21,000 and 26,000 vehicles per day. Traffic flows are heavy but relatively uninterrupted by cross streets, especially along the channel (LOS A to LOS D). It serves as a signed truck route.

Fruitvale Avenue

Fruitvale Avenue is a two- to four-lane arterial roadway that borders the northern edge of the Coliseum Redevelopment Area. Major intersections are signalized with additional turning lanes. Carrying about 20,000 vehicles per day, it experiences moderate flows and few delays at intersections in the study area. The segment from Alameda Avenue to Elmwood Avenue is currently striped for one lane in each direction (resulting in LOS E), although there is adequate pavement width for two lanes in each direction.

High Street

High Street is a relatively narrow four-lane arterial roadway running from Alameda to just east of I-580. It becomes a two-lane street at the bridge to Alameda. With an average daily traffic volume on the section in the Coliseum Redevelopment Area of about 20,000 vehicles, it is a relatively heavily travelled route with poor service levels (LOS E) at the I-880 interchange and south of I-880. High Street is a designated truck route.

Due to heavy traffic flows and conflicts with left-turning vehicles, High Street experiences poor levels of service during peak periods near the freeway interchange. The segment of High Street under I-880 experiences heavy demand and some congestion due to the short distance between the connectors to the on- and off-ramps and the heavy left-turning movements from High Street to the on-ramp connectors.

Oakport Street

East of High Street, Oakport is a two-lane street which provides access to the eastbound I-880 on-ramp. Traffic flow is heaviest in the eastbound direction due to the on-ramp traffic. The existing street adequately accommodates the westbound traffic, but is fully utilized by the eastbound traffic (LOS F). At the intersection of Oakport Street with the I-880 on-ramp, westbound Oakport Street traffic is delayed by stop sign control, while traffic oriented to either the on-ramp or eastbound Oakport have the right-of-way. Since the eastbound traffic on Oakport Street derives from the turning movements at the signalized High Street intersection, there are periodic gaps in traffic eastbound flow due to the signal phase changes. This allows westbound Oakport Street traffic at the stop sign to proceed after a short delay, and no serious backups of this movement were observed.

West of Hegenberger Road, Oakport Street is a divided four-lane street; but it does not transition smoothly to Hegenberger Road. Oakport Street transitions to a two-lane street which joins the eastbound I-880 ramps where delays during peak hours are common.

In the vicinity of 66th Avenue, Oakport is a two-lane street providing access to industrial and office land uses along its south side.

66th Avenue

Sixty-sixth Avenue is a four-lane street between Oakport Street and San Leandro Street, with a six-lane segment just north of I-880. Between San Leandro Street and East 14th Street, 66th Avenue is a two-lane street. Sixty-Sixth Avenue provides access to the Oakland Coliseum as well as serving the primarily residential areas adjacent to it between San Leandro Street and East 14th Street, and carries between 8,500 and 14,000 vehicles per day (LOS D). There are no traffic signals at the 66th Avenue interchange ramps for I-880, and ordinarily the traffic levels are relatively low at this interchange. Events at the Oakland Coliseum add traffic flows during arrival and departure periods. When these periods coincide with peak traffic flow times, additional congestion occurs along 66th Avenue from I-880 to San Leandro Street, and along Coliseum Way north of 66th Avenue.

Seminary Avenue

Seminary Avenue is a two-lane collector connecting San Leandro Street to I-580 and State Route 13 (the Warren Freeway). It is primarily a residential street.

Hegenberger Road

Hegenberger Road is six to eight lanes of divided expressway connecting the Metropolitan Oakland International Airport to points east. Between Edes Avenue and East 14th Street, Hegenberger Road has eight lanes. Average volumes on Hegenberger Road range from 25,000 to 40,000 vehicles per day (LOS A to LOS D). Most of the congestion on Hegenberger Road occurs near I-880 between Edgewater Drive and Edes Avenue. Both of these intersections experience delays during peak periods. It is a signed truck route. Events at the Oakland Coliseum add traffic flows during arrival and departure periods. When these periods coincide with peak traffic flow times, additional congestion occurs along Hegenberger Road between San Leandro Street and I-880.

98th Avenue

Ninety-eighth Avenue is a relatively narrow two- to four-lane street that connects Airport Drive near the Metropolitan Oakland International Airport to I-580, with an interchange at I-880. It provides an alternate access to the airport, in addition to Hegenberger Road. The average daily traffic volumes range from 15,000 to 25,000 vehicles, which is moderately high (LOS D to LOS F).

The segment from Airport Drive to I-880 is a three-lane roadway, with two southbound lanes and one northbound lane. The existing traffic volume is adequately handled by the southbound lanes, but the northbound lane is heavily utilized. Curb parking is provided along the northbound lane.

The 98th Avenue interchange bridge over I-880 provides only one lane in each direction. Traffic on 98th Avenue approaches the interchange in two lanes from each direction, and is merged into one lane in each direction to use the overcrossing. The other lane in each

direction connects to freeway ramps. This creates a bottleneck for north-south travel via 98th Avenue.

From Edes Avenue to East 14th Street, 98th Avenue is a four-lane street with curb parking.

The two critical intersections are at San Leandro Street and at I-880, where queues occasionally back up during the morning and evening peak periods. The City of Oakland is in the process of upgrading 98th Avenue from I-880 to I-580. The first stage from I-880 to E Street has been completed, and work is in progress on the second stage from E Street to MacArthur Boulevard. The project involves widening 98th Avenue, adding median left turn lanes where the right-of-way permits. The City of Oakland has plans to widen 98th Avenue between I-880 and the Oakland Airport as part of the Airport Roadway Project.

Existing Problem Traffic Locations Within the Coliseum Redevelopment Area

The following locations within the Coliseum Redevelopment Area street network are within the unacceptable range with existing traffic volume levels. Further descriptions of the problem locations are presented in Section 4.4.3 Impacts, below.

- Fruitvale Avenue - Alameda Avenue to Elmwood Avenue (2 Lanes) LOS E
- I-880 Freeway - North of High Street to Davis Street LOS E

Other problem locations were identified during field investigations, but were not revealed by the level of service calculations which were performed. These include the following:

- High Street / I-880 Interchange - This interchange experiences some peak hour congestion and delays. The problems are related to relatively heavy turning movements associated with ramp volumes and short stacking distance along High Street for the left-turn movements to the on-ramps.
- Oakport Street, west of Hegenberger Road - This segment experiences some peak hour backups and delays for eastbound traffic headed for Hegenberger Road.

- 98th Avenue / I-880 Interchange - This interchange experiences some peak hour congestion on the two-lane overcrossing structure.
- When peak arrival and departure periods for major Oakland Coliseum events coincide with peak traffic flow times, serious congestion occurs on those roadway facilities in the vicinity of the Coliseum, including Coliseum Way, San Leandro Street, I-880, 66th Avenue, Hegenberger Road, and their interchanges with I-880.

Rail

The Southern Pacific (SP) Transportation Company and Union Pacific (UP) Railroad both have tracks through the Coliseum Redevelopment Area. Approximately 70 percent of all cargo coming into the Port of Oakland is put on trains for transport either north (through Sacramento to points east) or south towards Los Angeles and points across the South (Wiederhorn, 1994).

Frequent service (several trains per day) operate on each of these lines, though the exact number depends upon demand. The SP, in particular, does not run trains on fixed schedules, but rather schedules trains on a daily basis depending upon demand. Figures on shipments to and from the area are considered proprietary information, and so were not available for this analysis. It is understood, however, that the rail movements to and from the Port have generally been on the increase.

Southern Pacific Transportation Company

The Southern Pacific Transportation Company railroad tracks extend east-west across the Coliseum Redevelopment Area from Fruitvale Avenue to San Leandro. The tracks parallel San Leandro Street to the south until just east of 98th Avenue at Elmhurst Junction, where they split with one heading south and the other continuing east. The Hayward line continues east toward Niles, while the Mulford line goes along the bay shore towards Newark. AMTRAK currently operates the Capitol Corridor service on the Hayward line. The two lines parallel each other, then rejoin in San Jose.

Union Pacific Railroad

The Union Pacific Railroad tracks extend across the Coliseum Redevelopment Area from Fruitvale Avenue to San Leandro along the northern side of San Leandro Street. Union Pacific purchased the rail lines formerly owned by the Western Pacific Railroad. The BART tracks run above the UP right-of-way through the Coliseum Redevelopment Area.

AMTRAK

AMTRAK operates intercity rail service between Sacramento and San Jose on the Southern Pacific Railroad tracks. The Capitol Corridor service is currently being upgraded and new stations are proposed, including one at 73rd Avenue near the Oakland Coliseum. Funds for the proposed station are available through Proposition 116, but other nearby stations (Hayward, and the new Oakland / Jack London Square stations) have been given higher priority. The preliminary design is for one or two platforms, depending upon AMTRAK operational and service needs, approximately 800 feet long and 15 feet wide. Current station site plans provide for pedestrian access to Bay Area Rapid Transit (BART) and the Coliseum complex and vehicle access from 73rd Avenue. A crossover on the west side provides access to the Coliseum over the flood control channel. Seventy-third Avenue would be upgraded with curbs and sidewalks. A relatively small parking lot with 20-25 spaces and bus turnaround is also included. Current plans do not include Alameda-Contra Costa (AC) Transit service. A more elaborate multi-modal facility is a possibility for the future, contingent upon the plans for the BART/Airport Connector.

Public Passenger Transit

Public transportation services in the Coliseum Redevelopment Area are provided by BART, AC (Alameda-Contra Costa) Transit, AMTRAK, and the Port of Oakland. BART's Fremont line runs above the Union Pacific right-of-way connecting this area directly to Richmond and San Francisco and with a transfer in downtown Oakland to Concord. The alignment generally follows the east side of San Leandro Street through the project area. AC Transit provides eastbay and transbay bus services, including routes to downtown San Francisco from Oakland as well as local service. AMTRAK's Capitol Corridor Service connects this area

to San Jose and Sacramento. The Port of Oakland provides service to the Oakland Airport from the Coliseum BART station. Figure 4.4-4 shows the existing transit services in and near the Coliseum Redevelopment Area.

BART

The Bay Area Rapid Transit (BART) runs on elevated tracks through the Coliseum Redevelopment Area. There are two stations in the project area: Fruitvale and Airport/Coliseum. The Fruitvale BART station is located between 35th Avenue and Fruitvale Avenue on East 12th Street. AC Transit bus lines 45, 46, 49, 56, and 98 serve the station. As part of an effort to improve bus and automobile access to outlying stations, BART is proposing to construct a transit center and parking garage at the Fruitvale station. The project also includes improving circulation through the designation of particular areas for buses, automobiles, taxis, handicapped drivers, and kiss/ride vehicles.

The Coliseum BART station is located on San Leandro Street between 69th and 73rd Avenues. It is a multi-modal station with connections to AC Transit buses and the AirBART shuttle service. An elevated pedestrian walkway connects the station with the Coliseum Complex. An AMTRAK station serving this site has been proposed, but has not been built.

On the Fremont-San Francisco line, trains operate approximately every 15 minutes from 5 a.m. to 7 p.m. After that, and on weekends, riders traveling to/from San Francisco must transfer to a Concord-San Francisco train at the 12th Street station in downtown Oakland. On the Fremont-Richmond line, trains operate at approximately 15 minute intervals from 4 a.m. to midnight, Monday through Friday. During night hours and on weekends, trains operate every 20 minutes. (BART, 1992.)

Airport Transit Link

The Port of Oakland currently provides shuttle service (AirBART) between the Coliseum station and the Oakland Airport. The shuttle runs approximately every 10 minutes. Future service depends upon the airport connector described below.

A transit link between the Coliseum BART station and the Oakland Airport has been the subject of several studies going back at least 15 years. Mode and alignment options and patronage were revisited in a study completed in 1993. In the past, a people-mover type technology was preferred and an alignment with two intermediate stations, one at Edgewater Drive near the Elmhurst channel and one near the Hilton Hotel on Hegenberger Road, was proposed. These station locations are being re-examined in a current study. The peplemover would provide access to the airport as well as to the industrial and commercial uses near the proposed intermediate stations.

AC Transit

The Alameda-Contra Costa (AC) Transit District has local, express, and transbay routes in the Coliseum Redevelopment Area. Ten local routes cover the area, including line 58, which serves the Oakland Airport, and lines 82 and 82L, which run along East 14th Street. Table 4.4-1 shows the AC Transit routes which serve the individual sub-areas and their frequency. Table 4.4-2 shows recent ridership and capacity levels on several of the bus routes serving the study area. These data indicate that when compared to the available capacity, Routes 12, 47, 50, and especially 58 have the least available capacity of routes on this list.

Transit Modal Shares

According to the 1990 Census (MTC, 1993), the modal shares for commute trips for those working in the City of Oakland is as follows:

Drive Alone	65%
2 Person Carpool	10%
3+ Person Carpool	3%
Transit	13%
Walk	4%
Work at Home	3%
Other	.2%

Table 4.4-1

AC TRANSIT ROUTES IN THE STUDY AREA

AC Transit Line	Weekdays				Saturdays		Sundays & Holidays	
	Hours of Operation	Frequency			Hours of Operation	Frequency	Hours of Operation	Frequency
		6-9 am, 4-7 am	9 am - 4 pm	7 pm - 12 mn				
1. Fruitvale BART Station (Transfer Center)								
12	5am-12mn	15	30	30	6am-12mn	30	7am-12mn	30
44	6am-7:30pm	15	30	-	7am-7pm	30	8am-7pm	40
47	6am-7pm	15	30	-	-	-	-	-
48/49	6am-8pm	15	30	30	7am-7pm	30	7:30am-7:30pm	60
50	6am-11pm	12-25	15-30	30	6am-11pm	15-30	7am-9pm	20-40
53	6am-11:30pm	12-24	15-30	30	6am-11:30pm	15-30	7am-9pm	20-40
54	6am-10pm	10	15	60	6am-9:30pm	30	8am-8pm	30
62	5:30am-1am	15	15	30	5:30am-1am	20	5:30am-1am	30
82	24 hrs	12	15	20-60	24 hrs	15-60	24 hrs	15-60
KH	7-9am, 4-5:30pm	20/30	-	-	-	-	-	-
2. Elmwood Avenue								
12	5am-12mn	15	30	30	6am-12mn	30	7am-12mn	30
3. Tidewater Avenue								
49	6am-8pm	15	30	30	7am-7pm	30	7:30am-7:30pm	60

Table 4.4-1
(continued)

AC TRANIST ROUTES IN THE STUDY AREA

AC Transit Line	Weekdays				Saturdays		Sundays & Holidays	
	Hours of Operation	Frequency			Hours of Operation	Frequency	Hours of Operation	Frequency
		6-9 am, 4-7 am	9 am - 4 pm	7 pm - 12 mn				
4. East Bay MUD/Edgewater								
98	6am-8pm	15	30	30	30	6am-6:30pm	30	9am-8:30pm 30
5. Railroad Avenue								
45	5:30am-11pm	15	30	30	30	6am-11pm	30	7:30am-11pm 30
98	6am-8pm	15	30	30	30	6am-6:30pm	30	9am-8:30pm 30
6. Pippin/Pearmain								
45	5:30am-11pm	15	30	30	30	6am-11pm	30	7:30am-11pm 30
98	6am-8pm	15	30	30	30	6am-6:30pm	30	9am-8:30pm 30
7. 81st Avenue								
45	5:30am-11pm	15	30	30	30	6am-11pm	30	7:30am-11pm 30
46	6am-8pm	15*/30	30	30	30	7:30am-7pm	30*	7:30am-8pm 30*
56	6am-10pm	15	30	40**	30	7am-10pm	40**	7am-8pm 40**

* Indicates frequency for different legs of route.
 ** Portion of route only. Consult pocket timetable.

Table 4.4-1
(continued)

AC TRANSIT ROUTES IN THE STUDY AREA

AC Transit Line	Weekdays				Saturdays		Sundays & Holidays	
	Hours of Operation	Frequency			Hours of Operation	Frequency	Hours of Operation	Frequency
		6-9 am, 4-7 am	9 am - 4 pm	7 pm - 12 mn				
8. Coliseum BART Station (Transfer Center)								
45	5:30am-11pm	15	30	30	6am-11pm	30	7:30am-11pm	30
46	6am-8pm	15*/30	30	30	7:30am-7pm	30*	7:30am-8pm	30*
49	6am-8pm	15	30	30	7am-7pm	30	7:30am-7:30pm	60
56	6am-10pm	15	30	40**	7am-10pm	40**	7am-8pm	40**
58	5am-1am	10-15	17	20-30	5am-1am	20	5:30am-1am	20
98	6am-8pm	15	30	30	6am-6:30pm	30	9am-8:30pm	30
* Indicates frequency for different legs of route.								
** Portion of route only. Consult pocket timetable.								
9. 98th Avenue Industrial								
98	6am-8pm	15	30	30	6am-6:30pm	30	9am-8:30pm	30
10. Airport Gateway								
49	6am-8pm	15	30	30	7am-7pm	30	7:30am-7:30pm	60
98	6am-8pm	15	30	30	6am-6:30pm	30	9am-8:30pm	30

TABLE 4.4-2

EXISTING TRANSIT ROUTE DAILY RIDERSHIP LEVELS

Route	Daily Riders ^a	Daily Bus Capacity ^b	Ridership as % of Capacity ^c
12	2,633	4,242	62
44	869	2,204	39
45	1,547	3,534	45
46	2,051	3,741	55
47	1,848	2,436	76
48	1,241	2,320	53
49	777	1,596	49
50	2,504	3,318	75
53	3,008	6,348	47
54	2,717	5,265	52
56	2,295	4,935	47
58	8,785	7,590	116
98	1,220	3,572	34

^a Daily ridership numbers from September 1993 drivers counts.

^b Calculated by multiplying the number of seats on the buses that run these routes by the number of trips that are run on the route throughout the day.

^c Calculated by dividing daily riders by bus capacity. Percents greater than 100 represent standing room only conditions, on average, throughout the day. Routes with percents less than 100 may also have standing room only conditions for part of the day during the peak periods.

Source: AC Transit, September 1993 counts.

For workers who reside in the City of Oakland, the mode shares are:

Drive Alone	57%
2 Person Carpool	9%
3+ Person Carpool	5%
Transit	18%
Walk	5%
Work at Home	4%
Other	2%

About one-third of the transit riders use BART, while the remainder use buses or other modes of public transportation.

Airport

Metropolitan Oakland International Airport provides both freight and passenger service, competing with San Francisco and San Jose Airports for its share of the regional air service market. It serves as a hub for overnight delivery services such as Federal Express and United Parcel Service (UPS). Oakland Airport has experienced, and is expected to continue to experience, increases in airport activities. This is the direct result of changes in regional market shares of both air carrier and air cargo operations and changes in the growth of general population, business activity, and overall travel patterns of residents and visitors in the San Francisco Bay metropolitan area (Port of Oakland, 1992). As a result, the Oakland Airport is proposing an expansion which includes both landside and airside improvements to the existing facilities and improvements to roadways accessing the airport. These plans for expansion would impact the existing circulation patterns and increase activity in the Coliseum Redevelopment Area.

The *2002 Airport Development Program* is intended to develop new facilities or enhance existing ones to accommodate the anticipated demand, which has been projected to be between 10 million and 12 million annual passengers by year 2007, up from 6.5 million in 1993 (Port of Oakland, 1992). The intent is to expand and enhance the terminal facilities by

year 2002. The program is divided into two components: Terminal Expansion and Landside Access.

The Terminal Expansion is aimed at improving service for the air passenger by minimizing delays and inconveniences. The intent of the Port is to expand and enhance the existing Terminal 1 by developing a new concourse to accommodate up to 12 more aircraft passenger gates and improving internal circulation by modifying airline/airport service areas. Terminal 2 would undergo a smaller expansion and reconfiguration.

Landside Access projects are intended to minimize congestion and bottlenecks by improving roadways, parking, curbside access, and transit links. Projects include the reconfiguration of the current Airport Drive access loop, which serves the main passenger terminal complex, relocating parking and car rental facilities displaced by the realignment of the access loop, and constructing a new parking garage / ground transportation center. Airport Drive from Air Cargo Road would be expanded to seven lanes (four inbound and three outbound). In front of the terminals the loop road would be expanded to up to eight lanes.

The Airport Roadway Project includes upgrading several roadways in the vicinity of the airport and constructing a cross airport roadway linking Airport Road to Harbor Bay Parkway. The project is funded through Alameda County's Measure B with local shares coming jointly from the Port, City of Oakland, and City of Alameda. The initial phase of the project is to build a four-lane roadway from I-880 / 98th Avenue to Harbor Bay Parkway with the purchase of right-of-way for an ultimate six-lane roadway. The project is divided into three segments. Ninety-eighth Avenue would be upgraded from the I-880 interchange to Airport Access Road. The second segment is Airport Access Road and Airport Drive from 98th Avenue to Airport Road, formerly Air Cargo Road. The third segment is the extension of Airport Road under Taxiway 5 to connect with Harbor Bay Parkway near Maitland Drive.

Parking at Target Areas

Parking conditions within the 10 target areas vary. The 10 target areas are described in Chapter 3.0 Project Description and are shown in Figure 3-3. The following is an overview

of the parking conditions within each target area based on field observations conducted during preparation of this EIR (Dowling, 1994).

1. Fruitvale BART Station Target Area

Off-street parking is provided in the vicinity of the BART station. On-street parking is provided throughout the target area. Along East 14th Street and on the side streets near it, the curb spaces are controlled by meters and/or time limits. Elsewhere, the curb parking is generally unrestricted. On East 12th Street adjacent to the BART station curb parking is prohibited. Heaviest parking usage occurs along East 14th Street and surrounding the BART station.

A parking survey prepared in 1991 by DKS in the vicinity of the BART station found that the parking lots within the station generally fill up by 9:00 a.m., and most of the on-street spaces are taken by 9:00 a.m. as well. Within a one-third mile radius of the station, approximately one-half of the on-street spaces are occupied throughout the day. Virtually all of BART patrons park within two blocks of the station; and it is estimated that about 35 percent of the parkers within two blocks of the station are BART patrons (Oakland, 1991).

2. Elmwood Avenue Target Area

Overall, this target area has relatively light parking demand due to the existing low intensity land uses within it. Elmwood Avenue experiences fairly heavy curb parking usage. Alameda Avenue and East 8th Street have relatively light parking usage. Fruitvale Avenue has curb parking permitted for part of the day (9 a.m. to 4 p.m.), but experiences little, if any, curb parking usage. Current parking demands are adequately accommodated by existing off-street and curb parking spaces.

3. Tidewater Avenue Target Area

Overall, this target area also has light parking demand due to the existing relatively low intensity land uses within it. Lesser Street experiences moderate to heavy curb

parking usage. Oakport Street experiences moderate curb parking usage along the south side of the street. Tidewater Avenue, Howard Street, and Jensen Street all experience relatively light curb parking usage. High Street has curb parking permitted for part of the day (9 a.m. to 4 p.m.), but experiences little, if any, curb parking usage. Current parking demands are adequately accommodated by existing off-street and curb parking spaces.

4. East Bay MUD / Edgewater Sites Target Area

Parking demand within this target area is associated with the industrial uses that currently exist, and is adequately accommodated by existing off-street parking spaces. The only on-street parking observed in this target area occurred on Oakport Street near the 66th Avenue interchange during Coliseum events.

5. Railroad Avenue Target Area

The principal streets in this target area are Edes Avenue and Railroad Avenue, both of which experience relatively light parking usage at this time.

6. Pippin/Pearmain Target Area

There are four principal streets in this target area. Edes Avenue and 105th Avenue both experience light parking usage. Pippin Street and Pearmain Street both experience light to moderate parking usage.

7. 81st Avenue Target Area

In this target area, San Leandro Street experiences relatively light parking usage; the north side of the street is fronted by railroad tracks. Seventy-fifth Avenue experiences moderate parking usage. Other streets, including 81st Avenue, 85th Avenue, and Baldwin Street, experience light parking usage.

8. Coliseum BART Station Target Area

Principal streets within this subarea include San Leandro Street, 69th Avenue, Hegenberger Road, Hawley Street, and Snell Street. Most of the parking demand in this target area results from and occurs at the BART station. Most of the area's streets experience light curb parking usage. The BART station parking lots ordinarily experience only moderate usage, with unoccupied spaces available. Heavier parking demands occur during major events at the Oakland Coliseum and typically coincide with off-peak times for BART parking demands.

9. 98th Avenue Industrial Target Area

Parking demand within this target area is associated with the existing commercial and industrial uses. For the most part, the existing demand is adequately accommodated by existing off-street parking spaces. A relatively small amount of on-street parking occurs in this target area. On 98th Avenue, curb parking is prohibited on the west side of the street and allowed, but only lightly used, on the east side of the street. Along Bigge Street, curb parking usage is moderate to heavy.

10. Airport Gateway Target Area

Parking demand within this target area is also primarily associated with existing commercial and industrial uses. On 98th Avenue, curb parking is prohibited on the west side of the street and allowed, but only lightly used, on the east side of the street. No parking is allowed on Airport Drive, Doolittle Drive, and Pardee Drive. Parking demand is necessarily served primarily by off-street parking spaces.

4.4.2 Significance Criteria

According to *CEQA Guidelines* Appendix G, a project that "would cause an increase in traffic that is substantial in relation to the existing traffic load and street system capacity," is normally considered to have a significant adverse impact on the environment.

For this EIR, plan-related traffic increases would be considered significant if these increases resulted in a decrease of the level-of-service of affected road segments below LOS D. The acceptable range of traffic conditions is represented by levels of service A through D. The unacceptable range is levels of service E or F.

Impacts on public transit would be considered significant if plan-related demand were to exceed anticipated capacity. That is, a transit impact would be significant if the addition of plan-related transit trips to the baseline scenario were to result in an increase of more than one percent when the baseline transit conditions are at the maximum peak load.

4.4.3 Impacts

The Redevelopment Plan is described in Chapter 3.0 Project Description. The development levels within the Coliseum Redevelopment Area by year 2010 have been used to estimate the project trip generation and traffic impacts. The level of service designation is determined by comparing the daily traffic volume carried by the street segment with the calculated daily capacity of the street segment given the type of roadway facility, the number of lanes, presence or absence of left-turn lanes, presence or absence of medians, and spacing of traffic signals. The methodology of the Florida Department of Transportation has been used to calculate the daily capacity of each street segment. The ratio between the volume carried and the capacity (V/C ratio) determines the level of service. Table E-3 in Appendix E shows this relationship.

Trip Generation

Traffic to be generated by the Redevelopment Plan was estimated by applying average trip generation rates to the various land use categories in each analysis target area. It should be noted that these land use changes are those changes attributable directly only to the Redevelopment Plan and thus are lower than the land use changes indicated in Table 4.2-3 in the Land Use Compatibility Section. Because the traffic analysis is based on subtracting the Plan-related impacts from cumulative impacts, this is a more conservative analysis for traffic impacts than if the total changes anticipated for the area were subtracted. Table 4.4-3 shows the trip generation rates used, and Table 4.4-4 presents the resulting trip generation

TABLE 4.4-3

TRIP GENERATION RATES

Category	Land Use	Daily	Per	A.M. Peak Hour	P.M. Peak Hour
1	Residential - Single Family	9.5500	unit	0.7400	1.0100
2	Residential - Multi-family	6.4700	unit	0.5100	0.6300
3	Retail Center <= 50,000	0.0917	sq.ft.	0.0022	0.0084
4	Retail Center <= 100,000	0.0707	sq.ft.	0.0016	0.0066
5	Retail Center <= 150,000	0.0626	sq.ft.	0.0012	0.0058
6	Retail Center <= 200,000	0.0545	sq.ft.	0.0012	0.0051
7	General Offices <=25,000	0.0197	sq.ft.	0.0026	0.0027
8	General Offices <= 50,000	0.0166	sq.ft.	0.0022	0.0022
9	General Offices <= 100,000	0.0140	sq.ft.	0.0019	0.0019
10	General Light Industrial	0.0070	sq.ft.	0.0009	0.0010

Source: Institute of Transportation Engineers (ITE), *Trip Generation*, Fifth Edition, 1991.

Note: These ITE rates for retail uses will be reduced by 25 percent to account for pass-by trips before assignment to network.

TABLE 4.4-4

2010 TRIP GENERATION ESTIMATES

Analysis Area	Land Use	Amount	Category	Daily	A.M. Peak Hour	P.M. Peak Hour
1. Fruitvale BART Station Target Area	Housing - Multi-family	120 units	2	776	61	76
	Retail Space	120,137 sq. ft.	5	5,640	110	525
	Office Space	60,066 sq. ft.	9	997	133	135
2. Elmwood Avenue Target Area	Housing - Single-family	5 units	1	48	4	5
	Housing - Multi-family	5 units	2	32	3	3
	Retail Space	5,406 sq. ft.	3	372	9	34
3. Tidewater Avenue Target Area	Retail Space	15,017 sq. ft.	3	1,032	24	95
	Office Space	32,034 sq. ft.	8	532	71	72
	Industrial Space	70,593 sq. ft.	10	492	65	69
4. East Bay MUD/ Edgewater Site Target Area	Retail Space	276,315 sq. ft.	4	11,294	253	1,057
	Office Space	80,088 sq. ft.	7	1,124	152	150
	Industrial Space	52,945 sq. ft.	10	369	49	52
5. Railroad Avenue Target Area	Housing - Single-family	4 units	1	38	3	4
	Retail Space	39,044 sq. ft.	3	2,684	63	247
	Office Space	30,034 sq. ft.	8	532	71	72
	Industrial Space	52,945 sq. ft.	10	369	49	52
6. Pippin/Pearmain Target Area	Housing - Live Work	24 units	1	229	18	24
	Retail Space	12,014 sq. ft.	3	826	19	76
	Office Space	40,044 sq. ft.	8	665	89	90
7. 81st Avenue Target Area	Office Space	40,050 sq. ft.	8	665	89	90
	Industrial Space	70,593 sq. ft.	10	492	65	69
8. Coliseum BART Station Target Area	Retail Space	15,017 sq. ft.	3	1,032	24	95
	Office Space	80,100 sq. ft.	9	1,124	152	150
9. 98th Avenue Industrial Target Area	Retail Space	19,823 sq. ft.	3	1,363	32	125
	Industrial Space	52,945 sq. ft.	10	369	49	52
10. Airport Gateway Target Area	Retail Space	19,823 sq. ft.	3	1,363	32	125
	Office Space	32,034 sq. ft.	8	532	71	72
	Industrial Space	35,297 sq. ft.	10	246	32	35
East 14th St Corridor, Remainder Area	Housing - Single-family	12 units	1	115	9	12
	Housing - Multi-family	108 units	2	699	55	68
	Retail Space	78,089 sq. ft.	3	5,368	127	494
	Office Space	4,002 sq. ft.	7	79	10	11
	Industrial Space	17,648 sq. ft.	10	123	16	17
Super K at High/ Alameda/I-880, Remainder Area	Retail Space	200,000 sq. ft.	6	8,175	183	765
Totals				49,739	2,193	5,018

Note: Trip generation rates for some land use categories use professional engineering judgment.

Source: Dowling Associates, 1994

estimates. The Redevelopment Plan has the potential to generate about 49,800 trips per day, with about 2,200 in the morning peak hour and about 5,000 in the afternoon peak hour. The majority of the trips, 72 percent, would be generated by the retail uses. Of the remaining trips, office uses would generate about 13 percent, residential uses would generate 4 percent, and industrial uses would generate 5 percent.

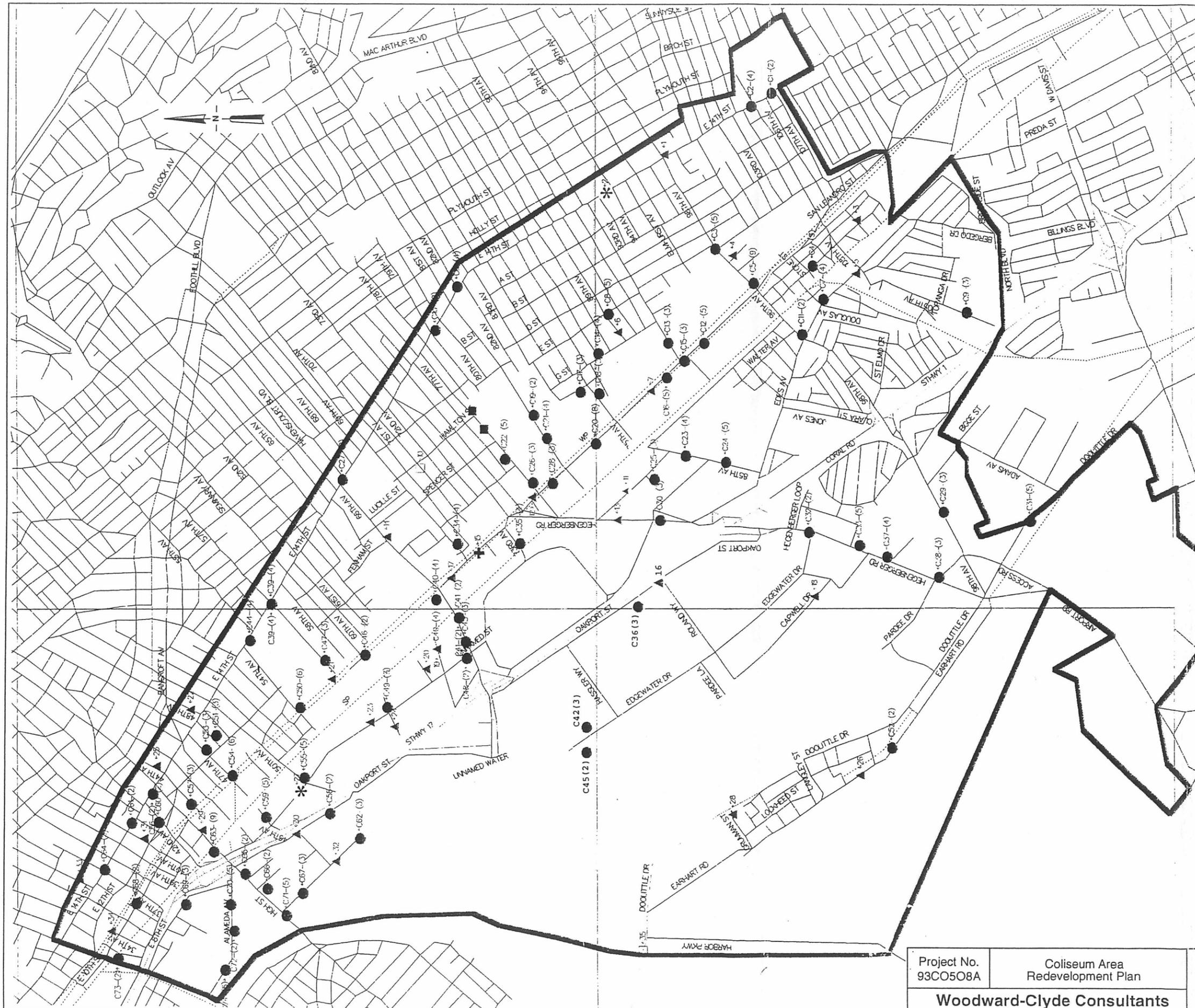
In built up urban areas, commercial uses typically derive a share of their trips from traffic which passes the site regularly anyway. Such trips are called passby trips, and while they are part of the traffic entering and leaving the Coliseum Redevelopment Area, they are not new trips on the surrounding street system. Commercial uses within the study area have been assumed to have 25 percent passby trips, which is a conservatively low assumption for this component.

Trip Distribution

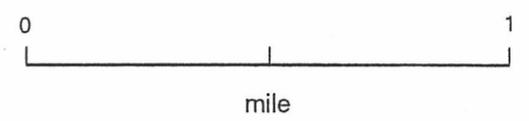
The directional distribution of the project's traffic was estimated from data derived for the study area from the Metropolitan Transportation Commission (MTC) peak hour traffic model, with adjustments based on field observations and engineering judgment. The trip distribution pattern for three major portions of the study area (western, middle, and eastern portions) were derived from the MTC model. These separate distributions were then applied to the Plan's traffic generation for each portion, and a composite, weighted estimate was developed for the Plan's traffic distribution. The distribution percentages used are presented in Figure 4.4-5. Note that 23 percent of the generated traffic is assumed to remain internal to the Coliseum Redevelopment Area.

Trip Assignment and Projected Traffic Volumes

The generated traffic was assigned to the Coliseum Redevelopment Area street system based on a shortest travel path methodology. The MINUTP computer traffic modeling program was used to perform this assignment. A street network for the study area was created, and the trips were assigned from the various analysis target areas using the trip distribution percentages presented above.



- LEGEND**
- Cluster
 - ▲ LUST
 - Sara
 - * Cortese
 - ⊕ Cerclis



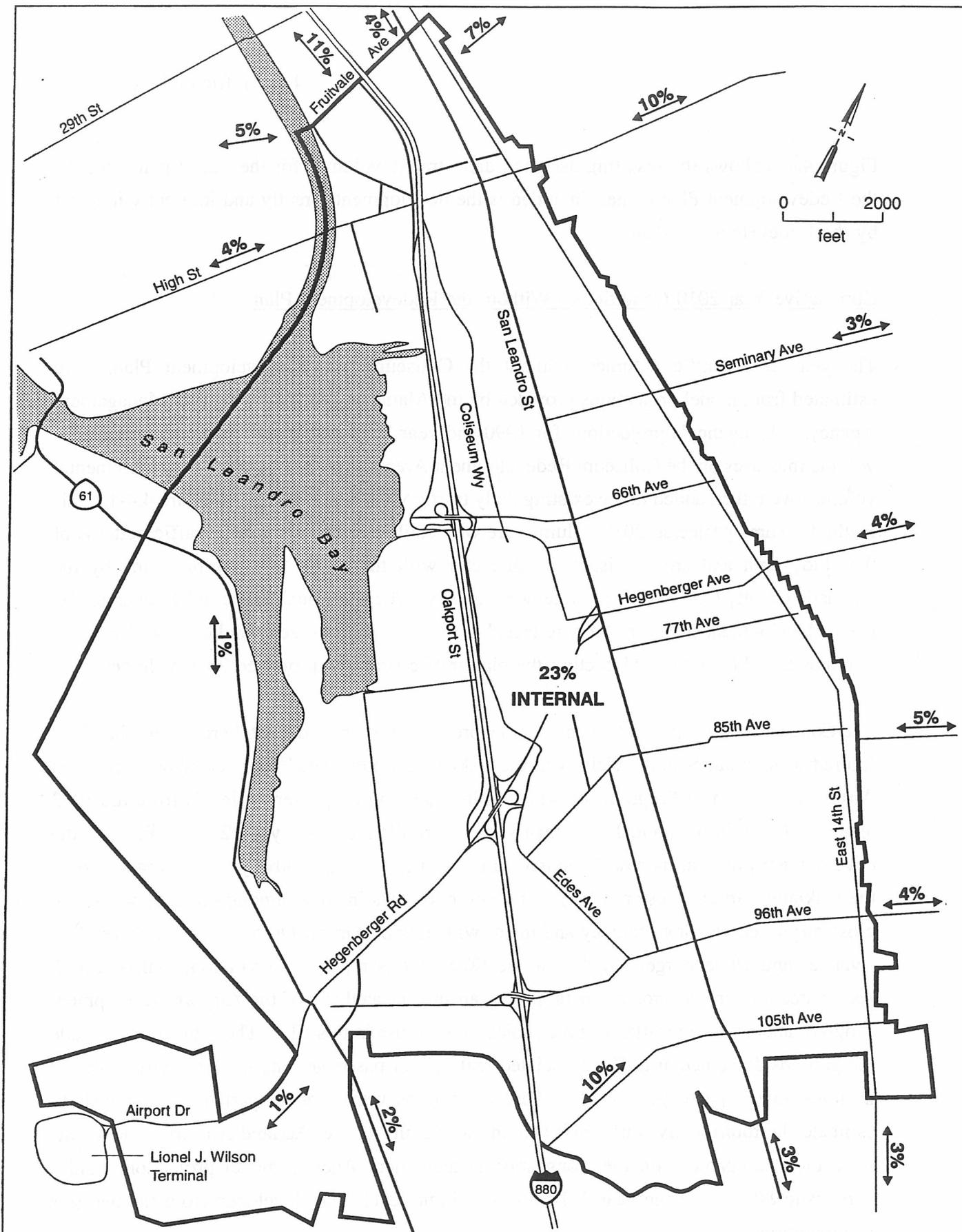
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Coliseum Area
Redevelopment Plan

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POTENTIAL LOCATIONS OF
HAZARDOUS MATERIALS

Figure
4.7-1



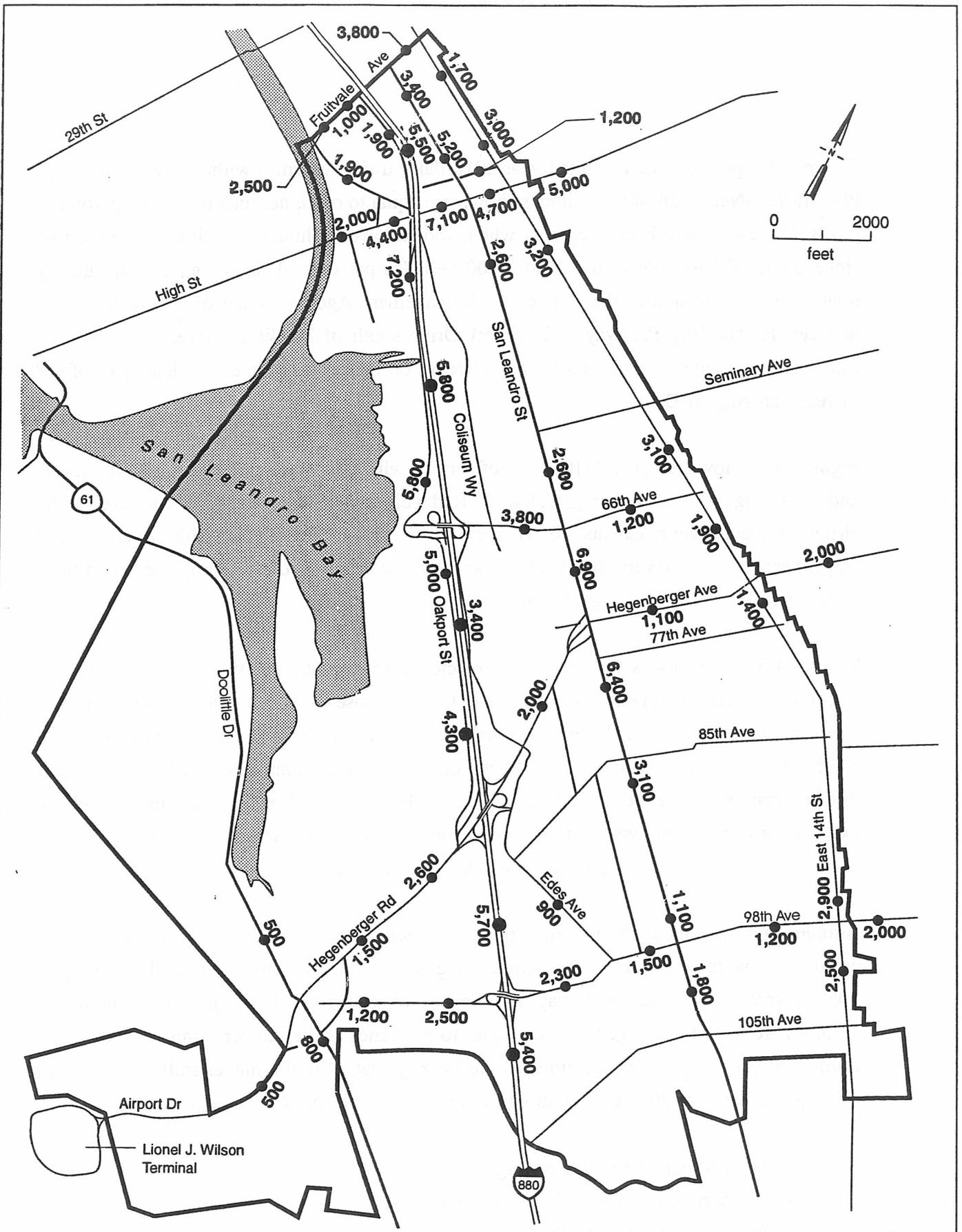
Project No. 93C0508A	Coliseum Area Redevelopment Plan	PLAN TRIP DISTRIBUTION PERCENTAGES	Figure 4.4-5
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Figure 4.4-6 shows the resulting assigned daily traffic volumes for the traffic generated by the Redevelopment Plan alone. Included is the development directly and indirectly induced by the Redevelopment Plan.

Cumulative Year 2010 Conditions - Without the Redevelopment Plan

The year 2010 traffic volumes, without the Coliseum Area Redevelopment Plan, were estimated from model projections provided by the Alameda County Congestion Management Agency. The agency's projections for 1990 and year 2010 were used to derive daily traffic volume increases on the Coliseum Redevelopment Area's street segments. These incremental volumes were then added to the existing daily traffic volumes presented in Figure 4.4-1. This method assures projected 2010 volumes are well calibrated to the existing traffic patterns of the study area and are consistent in character with the traffic changes projected by the Alameda County Congestion Management Agency. The additional traffic to be generated by the Redevelopment Plan is entirely reflected in these projections, so cumulative, without Plan volumes are obtained by subtracting the plan traffic from the projected 2010 volumes.

The Congestion Management Agency model projections do not adequately represent the likely future traffic volumes in the vicinity of the Oakland Airport. The Port of Oakland's proposed Airport Development Program would result in growth in air passenger levels from the 1992 level of 6.5 million annual passengers to 12 million by the year 2010. Part of the development program includes extensive improvements to the roadways providing access to the Oakland Airport (Foster, 1994). The improvements include, among other items, a new cross-airport connecting roadway and major widening of Airport Drive, Doolittle Drive, 98th Avenue, and Hegenberger Road. At the time of this report's preparation, Wilbur Smith Associates was in the process of preparing an impact analysis of the Airport Development Program and provided traffic volume projections for use in this EIR. The projections include the groundside vehicular traffic associated with the air passenger and truck activity of the 12 millions annual passengers level. These projections were used as part of this analysis to estimate the future daily traffic volumes in the vicinity of the Oakland Airport. The results were then compared with the Congestion Management Agency model projections, and a composite estimate of the year 2010 traffic volume levels was developed from the two sets of projections.



Project No. 93C0508A	Coliseum Area Redevelopment Plan	PLAN TRAFFIC ONLY (DAILY VOLUMES)	Figure 4.4-6
Woodward-Clyde Consultants			

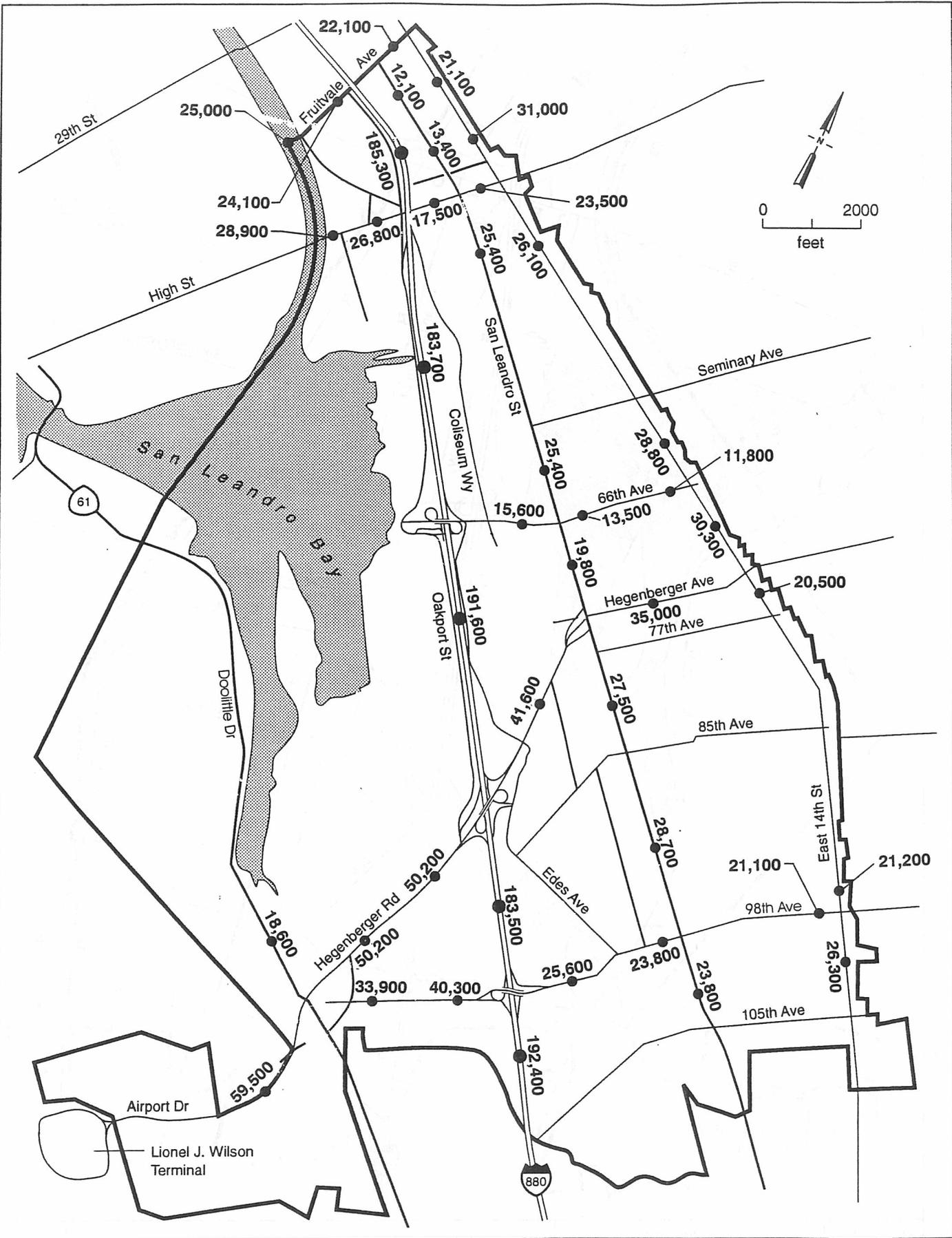
Figure 4.4-7 presents the projected year 2010 daily traffic volumes without Redevelopment Plan traffic. Nearly all of the volumes shown are equal to or higher than the existing volume levels; however, there is one segment which shows lower volume. Doolittle Drive west of Hegenberger Road is lower by about 7,700 vehicles per day. This decrease is apparently related to the inclusion in the Congestion Management Agency model of a new connector between Harbor Bay Parkway and Airport Drive south of Doolittle Drive. Diversion of traffic to this connector accounts for the decrease on Doolittle Drive and at least part of the increase on Airport Drive.

Figure 4.4-8 shows the year 2010 levels of service with these projected traffic volume levels and no changes to the existing Coliseum Redevelopment Area street system, except the airport project improvements to Airport Drive, Doolittle Drive, 98th Avenue, and Hegenberger Road. Several roadway segments would experience more congested conditions than currently exist. (See Figure 4.4-3).

Table 4.4-5 shows levels of service for selected road segments in year 2010, without the addition of Redevelopment Plan-generated trips. Those locations that are marked with asterisks on the table would have unacceptable service levels in 2010 without implementation of the Redevelopment Plan. As shown on this table, cumulative conditions without implementation of the Redevelopment Plan would cause the levels of service at the two existing problem locations to further degrade, and at two additional selected roadway segments to degrade to a significant level (LOS E or LOS F).

Another problem location not among the segments for which level of service (LOS) calculations were performed is the two-lane segment of San Leandro Street in the vicinity of 105th Avenue. This segment may experience congestion as the projected higher traffic volumes are forced to merge from four lanes to two lanes as they traverse this segment. The following existing problem locations would be aggravated by the higher traffic volumes of this cumulative year 2010 case without implementation of the Redevelopment Plan:

- High Street / I-880 Interchange
- Oakport Street, west of Hegenberger Road
- 98th Ave / I-880 Interchange



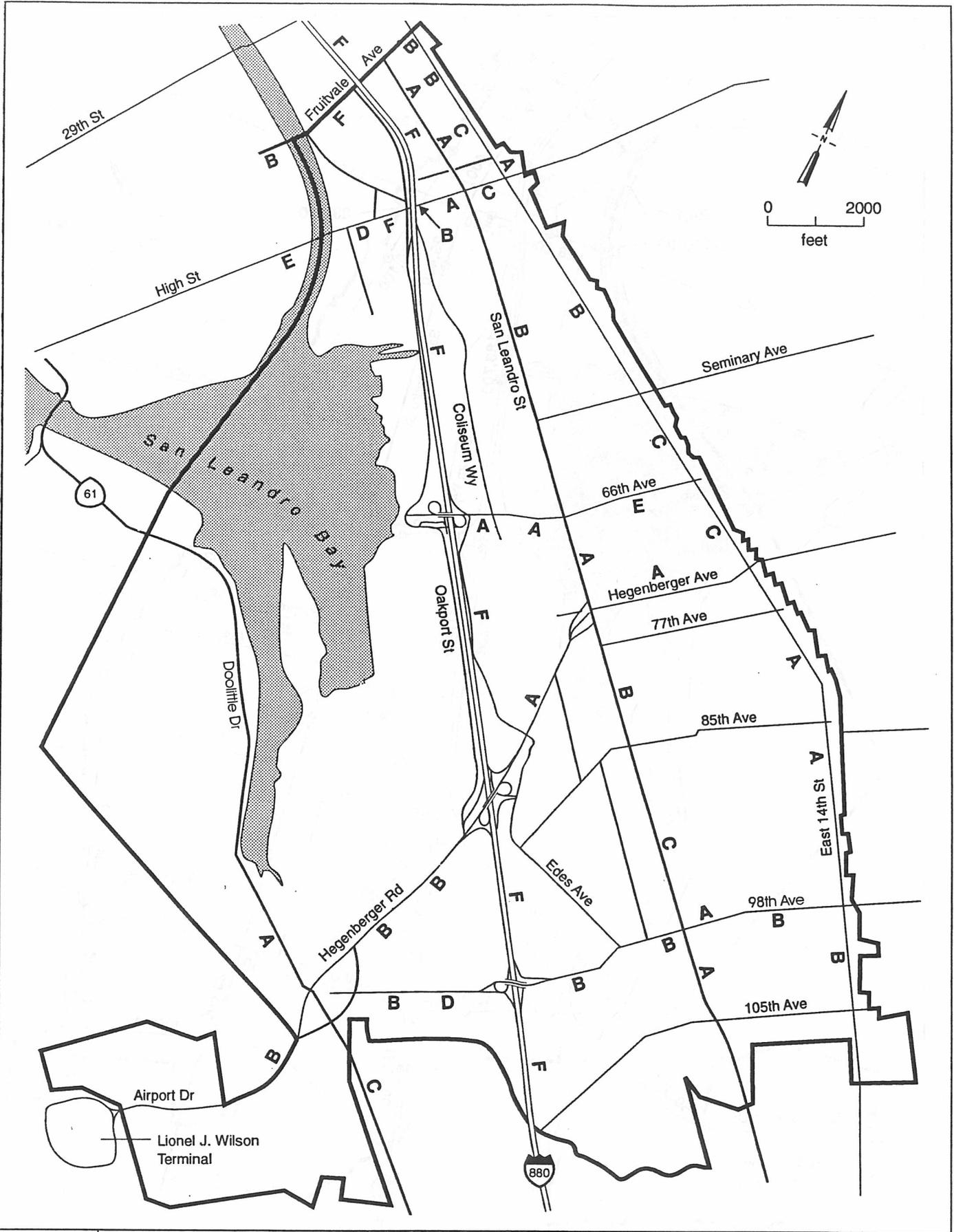
Project No.
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Coliseum Area
Redevelopment Plan

2010 DAILY TRAFFIC VOLUMES WITHOUT PLAN

Figure
4.4-7

Woodward-Clyde Consultants



Project No. 93C0508A	Coliseum Area Redevelopment Plan	2010 WITHOUT PLAN LEVELS OF SERVICE	Figure 4.4-8
Woodward-Clyde Consultants			

TABLE 4.4-5

2010 CUMULATIVE LEVELS OF SERVICE WITHOUT-PLAN:
SELECTED LOCATIONS

Location	Existing Level of Service	2010 Level of Service
Fruitvale Avenue - Alameda Ave. to Elmwood Ave.	E	F**
High Street - South of I-880	C/D	E/F*
I-880 Freeway - North of High St. to Davis St.	E	F**
66th Avenue - San Leandro St. to East 14th St.	A	E*

* Roadways that are currently operating at acceptable levels of service that would be degraded to an unacceptable level of service by cumulative traffic without the plan.

** Roadways that are currently operating at unacceptable levels of service that would further degrade due to cumulative development.

Source: Dowling and Associates, 1994

- Roadways in the vicinity of the Oakland Coliseum, including Coliseum Way, San Leandro Street, I-880, 66th Avenue, Hegenberger Road, and their interchanges with I-880 (during peak arrival and departure periods for major events).

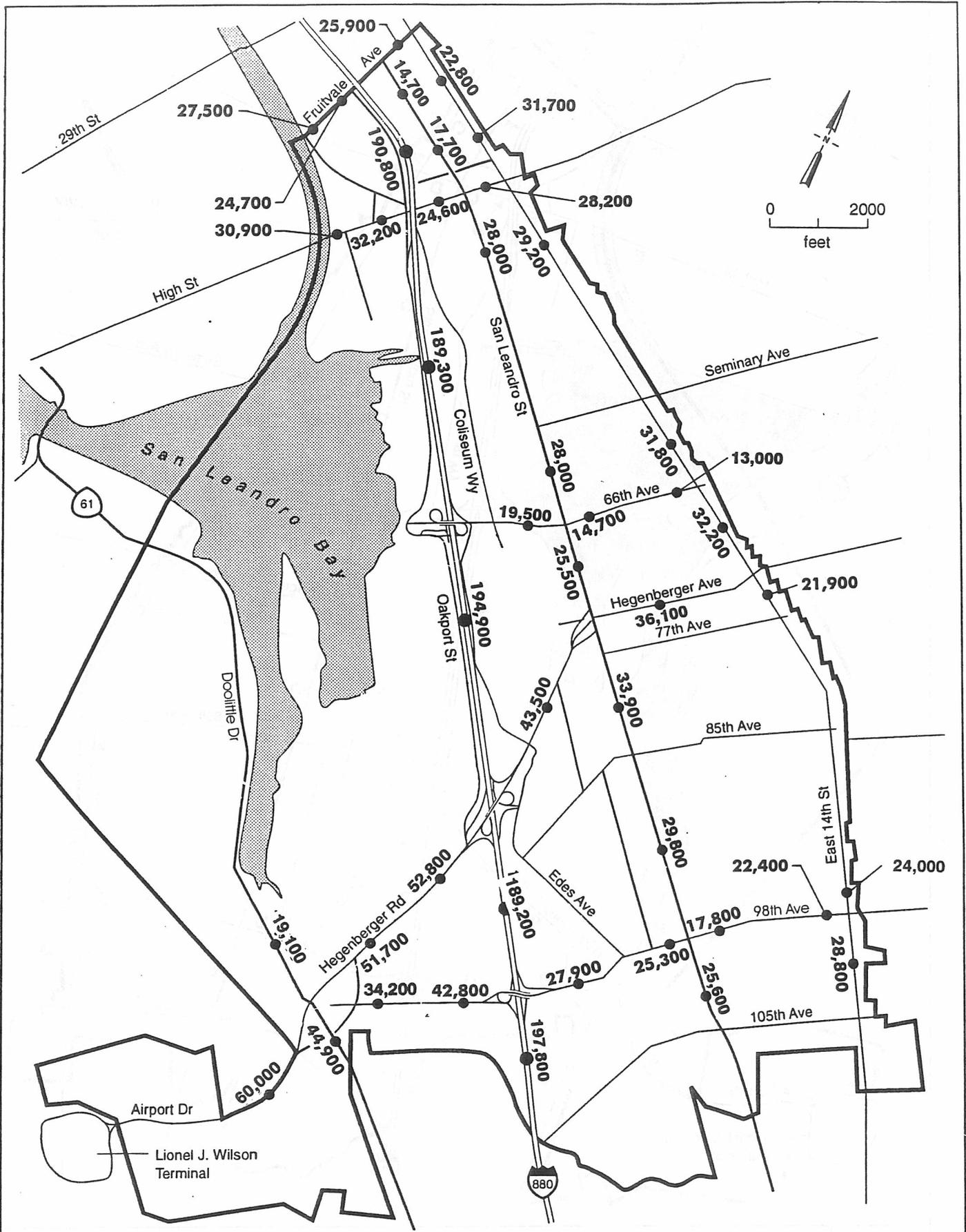
Cumulative Year 2010 Conditions - With the Redevelopment Plan

The year 2010 traffic volumes, with the Coliseum Area Redevelopment Plan, were estimated from the Congestion Management Agency 2010 projections and the Airport Development Program 2010 projections as described above. Figure 4.4-9 presents the projected 2010 daily traffic volumes with the Redevelopment Plan traffic.

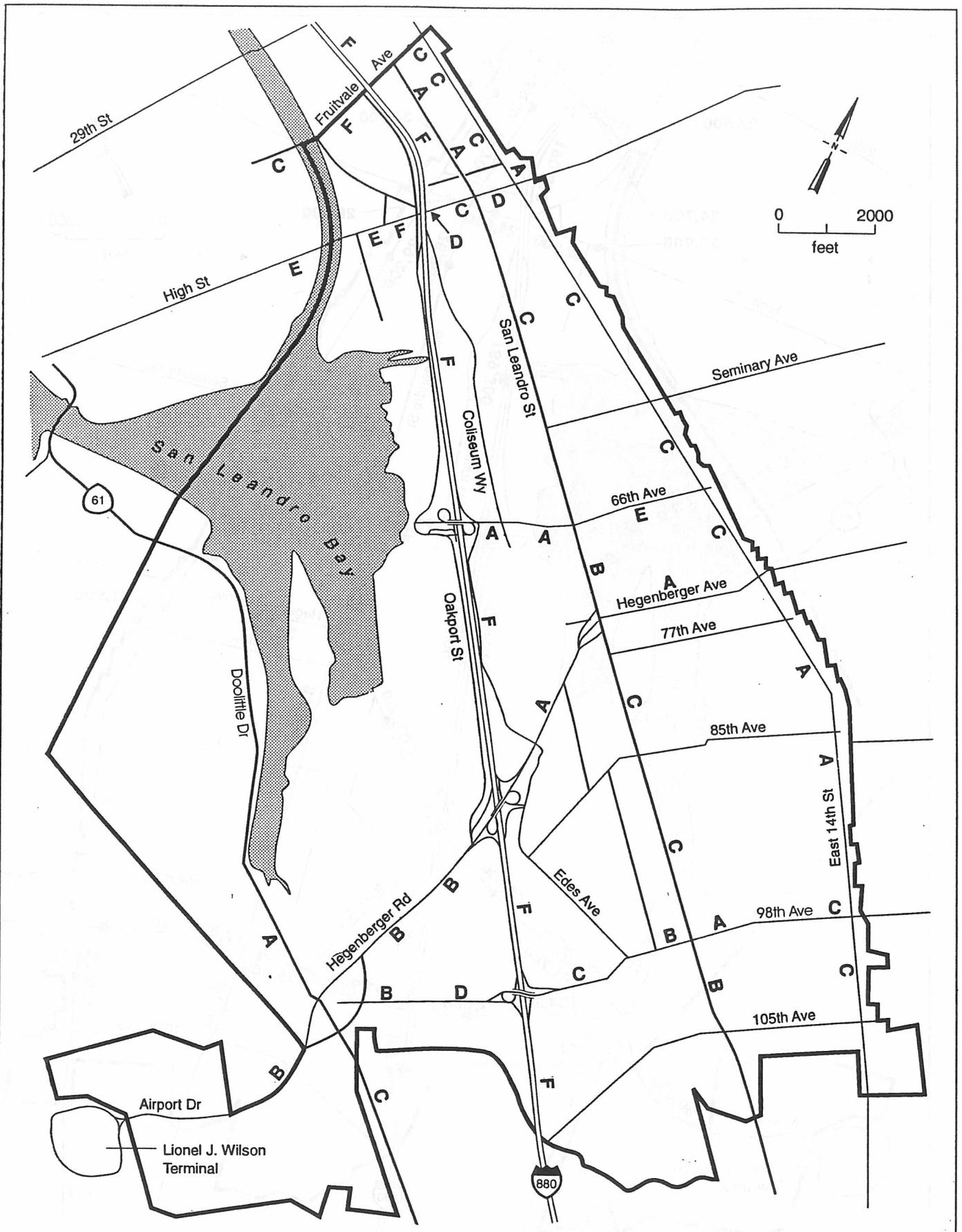
Figure 4.4-10 shows the levels of service with these projected traffic volume levels and the existing Coliseum Redevelopment Area street system (except for the airport project improvements). Table 4.4-6 shows levels of service at selected locations in year 2010 with-plan volume levels. No new locations become significant (degrade below LOS D) or shift from LOS E to LOS F as a result of the Redevelopment Plan. For the four locations shown, the levels of service do not change, but congestion would worsen incrementally due to traffic added by the Redevelopment Plan.

Figure 4.4-11 shows possible locations that are identified as candidates for future new traffic signals which could be implemented to reduce traffic conflicts and enhance safety. These locations are generally in areas of relatively light or free flowing existing peak hour traffic, and where substantial traffic volume increases are anticipated at the cumulative 2010 with-Redevelopment Plan level. Not all would be the direct result of traffic due to implementation of the Redevelopment Plan alone, but the plan would contribute in some measure to the need for all of the signals shown.

There are potential locations for constructing new street segments for the purpose of relieving projected traffic congestion and bypassing expected problem locations. These have been identified by inspection of projected traffic volumes, levels of service, and problem locations. Other new street connections are possible and may be desirable as part of certain development projects; however, their function would be primarily for property access, rather than for mitigation. The only new street segments identified for the purpose of mitigating



Project No. 93C0508A	Coliseum Area Redevelopment Plan	2010 DAILY TRAFFIC VOLUMES WITH PLAN	Figure 4.4-9
Woodward-Clyde Consultants			



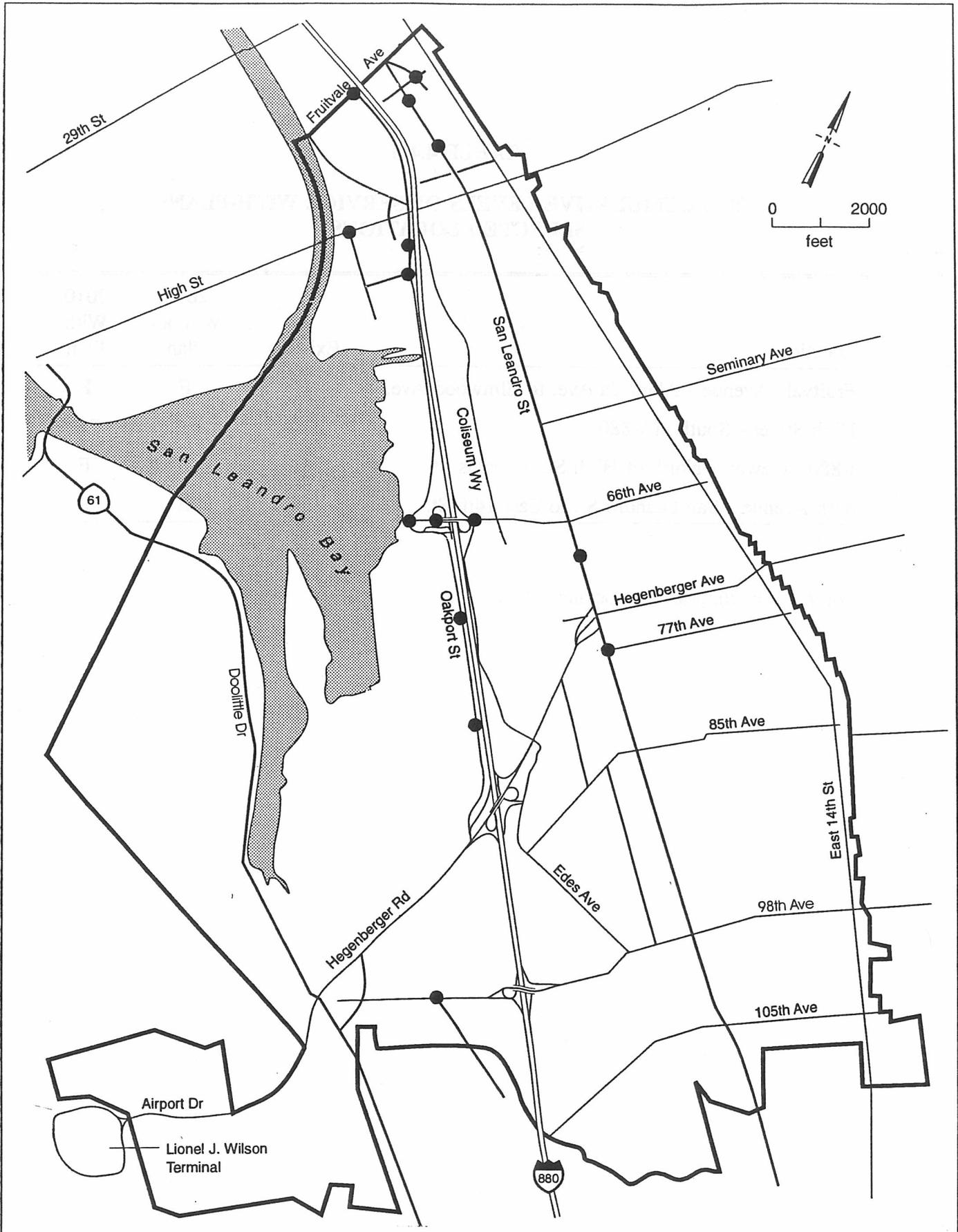
Project No. 93C0508A	Coliseum Area Redevelopment Plan	2010 WITH PLAN LEVELS OF SERVICE	Figure 4.4-10
Woodward-Clyde Consultants			

TABLE 4.4-6

**2010 CUMULATIVE LEVELS OF SERVICE WITH-PLAN:
SELECTED LOCATIONS**

Location	Existing	2010 Without Plan	2010 With Plan
Fruitvale Avenue - Alameda Ave. to Elmwood Ave.	E	F	F
High Street - South of I-880	C/D	E/F	E/F
I-880 Freeway - North of High St. to Davis St.	E	F	F
66th Avenue - San Leandro St. to East 14th St.	A	E	E

Source: Dowling and Associates, 1994



Project No. 93C0508A	Coliseum Area Redevelopment Plan	POSSIBLE LOCATIONS FOR NEW TRAFFIC SIGNALS	Figure 4.4-11
Woodward-Clyde Consultants			

potentially significant effects within the Coliseum Redevelopment Area are in the Tidewater Target Area, where a new north-south connector could be developed between Tidewater Avenue and Oakport Street on the east end of the target area. (See Roadway Mitigation Number 9, below.)

AC Transit and BART

Using the transit modal share data presented in Section 4.4.1 Environmental Setting, above, it is estimated that the project would generate about 600 commute transit trips in both the morning and the afternoon peak periods. Of these, about 200 would use BART and 400 would use the various AC Transit bus routes serving the Coliseum Redevelopment Area. When spread among the various target areas within the study area, any given transit route or line would receive a fraction of these total ridership levels.

The transit trips generated by a given target area would be related to its total trip generation potential, as shown in Table 4.4-4. The type of land use, its location relative to transit lines, and the likelihood that transit would be the chosen mode for its trips also affect the amount of transit trip generation. With these factors in mind, it appears that those transit facilities serving the Fruitvale BART Station Target Area, the Coliseum BART Station Target Area, and the East 14th Street corridor would experience the greatest share of the project's increased transit ridership. These facilities include the BART lines and AC Transit Routes 12, 44, 45, 46, 47, 48, 49, 50, 53, 54, 56, 58, 62, 82, 82L, and 98.

The most capacity constrained BART segment currently is the transbay segment from the branch in Oakland of the Concord/Richmond and Fremont lines through the transbay tube, and this is expected to continue in the future. To the extent that the Redevelopment Plan would add ridership to that line, there could be some proportionate impact. It is not likely, however, that the plan would add a substantial number of riders to that line given the directional distribution estimated for the project's generated trips.

The 200 additional peak riders represents less than a 0.2 percent increase in the existing BART peak ridership. The proposed Redevelopment Plan emphasizes development with employment opportunities, so it is unlikely that many of these riders would be traveling

through BART's critical maximum load points; those that do may be traveling in the reverse-peak direction. BART has unused capacity in the eastbound direction (out of San Francisco) in the morning, and in the westbound direction in the evening. There is also unused capacity southbound on the Richmond-Fremont line in the a.m. peak, and northbound on the Richmond-Fremont line in the p.m. peak. Therefore, the Redevelopment Plan would not be expected to have a significant impact on BART.

As with the roadways in the vicinity of the Oakland Coliseum, major events at the Coliseum affect BART. When the arrival and departure times of these events coincide with peak commute travel times, riders are added to the BART system via the Coliseum BART Station. The Redevelopment Plan's added BART ridership would tend to aggravate existing and future crowding during Coliseum events at the peak hours.

Rail Lines

Implementation of the Redevelopment Plan and other cumulative development could result in industrial development that could add some activity to the rail lines. In addition, congestion due to future development could warrant that Jensen Street be extended along an existing, unused railroad right-of-way.

Airport

The Redevelopment Plan would not be anticipated to impact operations at the Metropolitan Oakland International Airport.

Parking

Development proposed as part of the project would increase parking demands variously from target area to target area. Probably the greatest impacts would occur in the Fruitvale BART Station Target Area, where existing parking demands are relatively heavy now. For purposes of this plan-level analysis, it is assumed that additional parking spaces would be provided for specific development projects in this target area that would meet code requirements. In the other target areas existing parking demands are relatively low, and it is likely, due to the

current amount of available vacant land, that new development would be able to include adequate additional off-street parking to serve its parking demands. Thus for the Redevelopment Plan, parking impacts would be less than significant. For any future projects within the study area which would propose to not include code-required parking, impacts should be analyzed and project-specific mitigation may be warranted.

4.4.4 Mitigation

Roadways

Presented below are planned or possible improvement measures that would mitigate fully or in part the selected locations identified in Table 4.4-6 and other problem locations identified in the text.

Roadways Affected Primarily by Cumulative Traffic.

With the following three measures, these roadways would operate at acceptable conditions in the year 2010 with or without implementation of the Redevelopment Plan. These measures have been assumed to be in place in the level of service analyses presented in earlier sections.

1. Airport Drive - South of Doolittle

The Airport Roadway Project is a roadway improvement project by the Port of Oakland to improve accessibility to the Metropolitan Oakland International Airport. The project includes upgrading several roadways in the vicinity of the airport and constructing a cross airport roadway linking Airport Road to Harbor Bay Parkway. The initial phase of the project is to build a four-lane roadway from I-880 / 98th Avenue to Harbor Bay Parkway with the purchase of right-of-way for an ultimate six-lane roadway. The Airport Roadway project is divided into three segments: 1) 98th Avenue would be upgraded from the I-880 interchange to Airport Access Road; 2) Airport Access Road and Airport Drive from 98th Avenue to Airport Road, formerly Air Cargo Road; and 3) the extension of Airport Road under Taxiway 5 to connect with Harbor Bay Parkway near Maitland Drive.

Funding for the initial phase of the Airport Roadway project is primarily from Alameda County Measure B funds, with local matching funds and some state funds. According to the schedule, construction is anticipated to commence in July 1996 and be completed in January 1999. The proposed project is currently being analyzed in an environmental impact report.

Airport Drive south of Doolittle Drive would be widened from 4 lanes to 10 lanes as part of this improvement project. Implementation of this measure would fully mitigate the cumulative and plan traffic impacts for Airport Drive to a less-than-significant level. If the Airport Roadway project were not approved or implemented, the projected future traffic levels on Airport Drive would probably not occur as shown in Figure 4.4.-6. In that case, the additional traffic due to the Plan itself would not be likely to cause a significant impact on Airport Drive.

2. Doolittle Drive - East of Airport Drive

As part of the Airport Roadway Project described above, 98th Avenue is anticipated to be widened from I-880 to Airport Drive, including widening the crossing at San Leandro Creek and reconfiguring the intersection of 98th Avenue, Hegenberger Road, and Doolittle Drive. Ninety-eighth Avenue would be connected directly to Airport Drive passing under Doolittle Drive. This would create a direct, high capacity access to the Oakland Airport from I-880. It is likely that much airport traffic which would otherwise use Hegenberger Road or Doolittle Drive and Davis Street would divert to 98th Avenue. This would reduce future volume projections on Hegenberger Road and Doolittle Drive east of Airport Drive. This project would also involve widening of Doolittle Drive from just west of Hegenberger to just east of Airport Drive, which will significantly increase capacity through this section. With these improvements, the cumulative and Plan-related traffic impacts would be fully mitigated to a less-than-significant level. However, as discussed above, the Airport Roadway project is currently being analyzed in an environmental impact report and could result in potentially significant effects. If the Airport Roadway Project were not approved or implemented, the projected future traffic levels on Doolittle Drive would probably not occur as shown in Figure 4.4-6. In that case, the additional traffic due to the Plan

itself would not be likely to cause a significant impact on Doolittle Drive east of Airport Drive.

3. 98th Avenue - I-880 to Airport Drive

The City of Oakland plans to widen 98th Avenue between I-880 and the Oakland Airport as part of the Airport Roadway Project. The existing three-lane, unbalanced cross-section roadway would be widened to a six-lane arterial with a center left-turn lane. With these improvements, the cumulative and plan-related traffic impacts would be fully mitigated to a less-than-significant level. However, as discussed above, the Airport Roadway Project is currently being analyzed in an environmental impact report and could result in potentially significant effects. If the Airport Roadway Project were not approved or implemented, the projected future traffic levels on 98th Avenue would probably not occur as shown in Figure 4.4-6. In that case, the additional traffic due to the Plan itself might not cause a significant impact on 98th Avenue south of I-880.

The following roadways would operate at unacceptable conditions in the year 2010 with or without implementation of the Redevelopment Plan.

4. Fruitvale Avenue - Alameda Avenue to Elmwood Avenue

Restriping from two to four lanes would provide enough capacity to bring the level of service to the LOS B range, but would require parking prohibitions. Parking demand along this segment is not anticipated to be significant with implementation of the Redevelopment Plan, and no serious adverse parking impact would result from parking prohibitions. Thus restriping Fruitvale for four lanes, with parking prohibitions, would mitigate the traffic impacts identified for this location to a less-than-significant level.

5. High Street - South of I-880

This location is projected to operate with future conditions in the LOS E and LOS F range. The segment between I-880 and the connector to Alameda Avenue would have the more congested LOS F conditions, and the segment between the Alameda Avenue connector and Tidewater Avenue would have LOS E conditions. Parking is already prohibited during peak hours, so no improvement is possible through prohibition of parking. Widening would have socio-economic effects, because abutting properties are already fully developed and any major widening would require right-of-way acquisition and relocation of businesses. The remaining mitigation measures available include operational and system improvements, including peak hour turning movement prohibitions and traffic signal timing/coordination modifications; however, the potential for improvement is limited due to the limited number of traffic signals in this segment. Peak hour turning prohibitions would not necessarily be appropriate at every intersection. Where heavy peak hour turning movements occur, a prohibition could create problems at nearby intersections as these vehicles divert and re-route to their destinations. This would be especially undesirable if the diversion were to occur through residential neighborhoods. Before implementing such measures, the City would need to consult with the merchants and residents potentially affected by the prohibitions.

There is a pending project to connect the High / Oakport / I-880 Off-ramp intersection directly to Alameda Avenue using a one-way connector. To the extent that this project diverts traffic from the problem segment, it may produce some immediate and long-term improvement. It is likely, however, that even with such improvement measures, the traffic impacts projected for High Street south of I-880 would remain significant.

6. I-880 Freeway (North of High Street to Davis Street)

The I-880 Corridor is the subject of an on-going study initiated at the request of the Federal Highway Administration (FHWA) and local communities. The purpose of the currently under preparation *I-880 Intermodal Corridor Study* is to develop a long-term

transportation improvement program for the corridor. The program is designed to address increased congestion on I-880 and, among other things, to improve access to the Oakland Airport and Alameda. The study covers the I-880 corridor from the Bay Bridge to the Route 237 Interchange. The Coliseum Redevelopment Area falls within the first segment of the *I-880 Intermodal Corridor Study* from the Bay Bridge to Marina Boulevard.

One strategy discussed in the *I-880 Intermodal Corridor Study* to address the increasing congestion on I-880 is to extend the high occupancy vehicle (HOV) lanes from "A" Street in San Leandro through to I-80 / Bay Bridge. Another strategy is the extension of the Port of Oakland's heavy haul roadway system to provide access to the industrial areas between I-880 and the Bay and to provide an alternative route along I-880 for truck traffic. This strategy would involve the development of a four-to six-lane express roadway parallel to I-880. The heavy haul roadway system is the roadway system for the Port of Oakland which accommodates heavy vehicles over the normal weight limits. The internal system is under the jurisdiction of the Port and meets their specifications to support the containerized truckloads. The external heavy haul roadway system connects the Port's internal system to the freeway system. These routes fall under the jurisdiction of the Public Works and Police Departments. The *I-880 Intermodal Corridor Study* proposes extending the external heavy haul roadway system south parallel to I-880.

Even with these improvements, it is possible that the traffic impacts identified for I-880 in the study area would remain significant.

7. 66th Avenue - San Leandro Street to East 14th Street

The impact of cumulative future traffic would be significant with or without implementation of the Redevelopment Plan. Implementation of the Redevelopment Plan would not further degrade the level of service of this significant cumulative effect.

This is currently a 40-foot curb-to-curb, two-lane street with on-street parking. Some improvement can be produced by prohibiting parking and restriping for one lane in each direction plus a two-way center left-turn lane. The removal of parking could be an impact in itself for the abutting land uses. Widening would have socio-economic effects, because abutting properties are already fully developed and any major widening would require right-of-way acquisition and relocation of households and businesses. Even with the parking removal and restriping, the traffic impacts identified for this location may remain significant.

Other Problem Locations

8. San Leandro Street Near 105th Avenue

Congestion may occur at this location as the four-lane San Leandro Street becomes two-lanes to pass under 105th Avenue. A widened overpass could be constructed over San Leandro Street which could accommodate the widening of San Leandro Street to four lanes. This may not be a cost-effective mitigation measure for this congestion if it were to occur and may not be implemented due to its cost.

9. High Street - I-880 Interchange

The limitations of the existing geometric layout of this interchange are such that, major improvement in existing and future service levels can only be provided by major reconstruction of the interchange and its ramps. Caltrans plans to make earthquake strengthening retrofit improvements to this interchange, and is considering more improvements in addition to (or in lieu of) the retrofit measures. Caltrans has no specific improvement concepts or plans that have been publicized to date. Oakport Street, east of High Street, will need an additional eastbound lane to accommodate the future traffic volumes destined for the I-880 eastbound on-ramp. By prohibiting parking, Oakport Street can be restriped for two eastbound lanes and one westbound lane. This could provide an interim improvement, but is not likely to be adequate for the full future traffic volume levels. It may also be necessary to signalize the intersection of Oakport Street with the on-ramp as traffic volumes increase.

Widening would have socio-economic effects, because the freeway abuts the north side of the street, and adjacent properties on the south side of the street are already fully developed and any major widening would require right-of-way acquisition and relocation of businesses. If there is to be redevelopment of these properties, there may be opportunity to redesign Oakport Street and the on-ramp in this vicinity. It may also be possible to remove at least some of the traffic from this segment of Oakport Street by connecting Jensen Street to Oakport (east of the on-ramp) using the existing railroad right-of-way at the end of Jensen Street. Some right-of-way acquisition may be required for this improvement.

If a major reconstruction project is developed for the High Street interchange its design should include concepts for solving the on-ramp flow problem. Widening of High Street would probably reduce cumulative traffic impacts to a less-than-significant level. If, however, a major improvement project is not implemented at this location, the cumulative traffic impacts identified for the High Street / I-880 interchange would remain significant.

10. Oakport Street - West of Hegenberger Road

Caltrans plans to improve the interchange at Hegenberger Road with Alameda County Measure B funds. This is an approved project. Improvements to the intersection of Hegenberger Road with Edgewater Drive and the connection of Oakport Street to Edgewater Drive, instead of the I-880 off-ramp, will result in better service levels at both the interchange and the intersection. Oakport Street traffic will be segregated from the ramp traffic and will connect directly to Edgewater Drive. Construction is slated to begin in late 1994 with a completion date in early 1997. These improvements would fully mitigate the traffic impacts identified for this location to a less-than-significant level.

11. 98th Avenue / I-880 Interchange

Caltrans plans to improve the interchange at 98th Avenue with Alameda County Measure B funds. This is an approved project. The ramps at the 98th Avenue

interchange will be reconfigured to allow traffic on 98th Avenue to get onto the freeway without having to make a left turn against opposing traffic to access the on-ramp. The new configuration and widening of the overcrossing would improve traffic flow at the interchange. Improvements to the 98th Avenue interchange are anticipated to begin in early 1996 and be completed in early 1998. These improvements would fully mitigate the traffic impacts identified for this location to a less-than-significant level.

12. Roadways in the Vicinity of the Oakland Coliseum

The roadways involved include Coliseum Way, San Leandro Street, I-880, 66th Avenue, Hegenberger Road, and their interchanges with I-880. The traffic impacts identified are the worsening of problems which occur during peak arrival and departure periods for major events at the Coliseum. These problems are of relatively short duration, but can be significant when the event peak flows correspond with peak traffic flow times on the surrounding roadways. Some of the mitigation measures discussed above will address these impacts, such as the planned Caltrans improvements to the Hegenberger and 98th Avenue interchanges, and any improvements which derive from the *I-880 Intermodal Corridor Study*. The City will work with Caltrans in studying each of these locations in order to reduce impacts to less-than-significant levels. It is possible however, that even with these measures, the impacts identified for these roadways during Coliseum events that coincide with the peak period would remain significant. It should be noted: (1) that peak arrival and departure period for major Coliseum events which coincide with peak traffic flow times are anticipated to operate at jammed levels (LOS F) in the future even without implementation of the Plan and (2) these conditions would occur infrequently.

Approach for Addressing Impacts on State Highway Facilities

With or without the Plan, there are projected cumulative impacts forecasted for some of the State highway facilities in the study area. A process agreed to by all affected agencies should be formulated to provide a framework for identifying the degree to which individual

developments in the study area may add to these cumulative impacts, and the extent of any mitigation responsibility they should assume.

1. Establish a threshold development size, above which this process would need to be followed. This could be expressed in terms of dwelling units and floor space (for non-residential uses), or in terms of a peak hour or daily trip generation level.
2. Require the preparation of a traffic analysis for proposed developments within the study area. This traffic analysis should address each proposed development's impact on local streets and State highway facilities.
3. Consult with Caltrans' Advance Planning Branch prior to finalizing the scope of work for the traffic impact analysis of specific projects that are proposed within the study area. Receive their input regarding such matters as study area definition, roadway facilities to be included in the analysis, analysis time frames (e.g., daily and/or peak hour), pending and approved projects to be included, analysis scenarios (e.g., existing, existing plus project, cumulative, cumulative plus project, etc.), capacity calculation procedures, and level of service standards.
4. After the analysis has been completed, consult with Caltrans again to discuss the results and the implications of the development's traffic impacts for mitigation to State highway facilities. Receive their input regarding the kinds of mitigation measures (both highway and non-highway improvement measures) which are feasible for the impacted highway facilities, the applicability of specific candidate mitigation measures for the particular development under consideration, and the approaches that might be taken to establish the development's share of responsibility for mitigation.
5. Based upon the outcome of the above steps, the City, the developer, Caltrans, and other affected agencies will need to work together to arrive at a negotiated set of strategies for mitigating the project's impacts on the State highway facilities. Not all mitigation strategies will have equal applicability to each proposed development. Depending on the size of the development, the magnitude of its impacts, and its location relative to the impacted facilities, the practicality of individual strategies will

vary greatly. Furthermore, an individual proposed development may contribute cumulatively to the need for improvements but may not by itself create the need for the improvements. A proposed development's relationship to the regional development and travel forces needs to be considered in formulating mitigation strategies for it. Mitigation strategies could be directed to "regional" trips or "local" trips and funding sources developed accordingly.

6. In implementing the process outlined above, it may be helpful to develop a list of candidate mitigation strategies. Not all of these strategies would necessarily apply to each development proposal, but any given development could reasonably be required to adopt at least some of the strategies on the list.

Transportation System Management

The following transportation system management measures should be implemented to help reduce the magnitude of the plan's traffic impacts:

1. Require employers within the Coliseum Redevelopment Area to encourage their employees to use alternative transportation modes to the greatest extent possible. Also encourage employers to implement flex-time policies, including compressed work week schedules.
2. Encourage contractor participation in ridesharing programs, by providing off-street parking for construction personnel. Minimize deliveries of construction materials during peak traffic hours.
3. Require major employers within the Coliseum Redevelopment Area to prepare transportation demand management plans. These plans should include real incentives for employees to commute by modes other than the single-occupant automobile. Such plans should include transit subsidies, information on alternative modes, parking fees, and ridesharing programs, among other features.

4. Require developers of projects within the Coliseum Redevelopment Area to provide bus turnouts and bicycle/pedestrian facilities as appropriate. None of the key roadways in the target areas currently have bike lanes. The study area is flat and therefore is conducive to bicycle travel. As development occurs, bicycle facilities should be implemented if appropriate plans, standards, and policies are established early in the process. Most of the key roadways are fronted by sidewalks, but there are some exceptions which should be corrected as abutting development or redevelopment were to occur.
5. Provide assistance to employers in the Coliseum Redevelopment Area for training employee transportation coordinators and for developing telecommuting programs, conducting employee commute surveys, and establishing vanpool programs.
6. Require major employers, or employment centers, within the Coliseum Redevelopment Area to provide shuttles between their facilities and the nearest BART station.

Even with implementation of these measures, traffic operations at some road segments would continue to operate at unacceptable levels of service in the year 2010.

Development Phasing and Monitoring

Coordinate and phase new development within the Coliseum Redevelopment Area such that those target areas where traffic impacts are expected to be lightest receive priority for implementation. Monitor traffic conditions throughout the study area on an on-going basis, and make decisions on development and roadway improvement priorities such that already occurring problem areas are not significantly aggravated.

Transit

The following measures would reduce less-than-significant transit effects due to implementation of the Redevelopment Plan.

1. The City of Oakland should coordinate with Alameda-Contra Costa Transit to ensure that development in the Coliseum Redevelopment Area is implemented with corresponding expansions in transit service. Of particular importance would be increasing the frequency of bus service to the highest trip-generating target areas.
2. A transit link between the Coliseum BART station and the Oakland Airport has been the subject of several studies. In the past, a people-mover type technology was preferred and an alignment with two intermediate stations at Edgewater Drive near the Elmhurst channel and near the Hilton Hotel on Hegenberger Road was proposed. These transit link station locations are to be re-examined in a current study. One concept for the peplemover would provide access to the airport as well as to the industrial and commercial uses near the proposed intermediate transit link stations. Another concept would provide direct service to the Oakland Airport with no service to intervening land uses. This is a possible future mitigation which would help serve the transit ridership generated by the Redevelopment Plan and cumulative future development.
3. The East 14th Street / Mission Boulevard Corridor runs from downtown Oakland to the Hayward BART station; the segment from Fruitvale Avenue to the San Leandro city limit falls within the Coliseum Redevelopment Area. The corridor is one of the most heavily travelled in the AC Transit system, and so is considered well suited for light rail transit. A light rail line on this corridor would be more likely to increase capacity and frequency of service, rather than running times to downtown Oakland. It would improve accessibility to BART for some portions of the study area. This is a possible future mitigation which would help serve the transit ridership generated by the Redevelopment Plan and cumulative future development.

Parking Facilities

The following measures would reduce less-than-significant parking effects due to implementation of the Redevelopment Plan.

1. Development of the land uses due to implementation of the Redevelopment Plan within each target area should include off-street parking appropriate for the type of uses involved and their proximity to and likely propensity to be served by transit facilities.

Residential and employment intensive uses near transit nodes such as the Fruitvale and Coliseum BART stations can be expected to require less than the usual parking space ratios, since close proximity and ready access to BART would tend to support a lower auto-ownership level among residents and lower parking demands by employees. Similar uses not served by a concentration of transit services can be expected to need typical amounts of parking spaces for the respective land use types. Major, stand-alone commercial uses would probably need the standard parking space levels. In any case, the City's policies on parking space requirements as set forth in the zoning code, or as amended for the Coliseum Redevelopment Area, should govern the provision of parking for the proposed development.

2. Existing on-street parking should not be relied upon heavily to support the parking demands of development due to implementation of the Redevelopment Plan. Even if existing or future on-street parking spaces were to be available, future traffic conditions could necessitate the removal of curb parking to accommodate traffic lanes. Therefore, off-street parking facilities to adequately accommodate the full future parking demands should be provided for all development due to implementation of the Redevelopment Plan.

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4.5 AIR QUALITY

4.5.1 Environmental Setting

Meteorology and Climate

The Bay Area's climate, as with all of California coastal environs, is dominated by the strength and position of the semi-permanent high pressure center over the Pacific Ocean near Hawaii. It creates cool summers, mild winters, and infrequent rainfall; it drives the cool daytime sea breeze and maintains comfortable humidities and ample sunshine. Temperatures in Oakland average 58°F annually, ranging on the average from the mid-40s on winter mornings to the mid-70s in late summer afternoons. Daily and seasonal oscillations of temperature are relatively small because of the moderating effects of the nearby ocean. In contrast to the steady temperature regime, rainfall is variable and confined almost exclusively to the "rainy" period from early November to mid-April. Oakland averages 18 inches of precipitation annually, but because much of the area's rainfall is derived from the fringes of mid-latitude storms, a shift in the annual storm track of a few hundred miles can mean the difference between a wet year and near drought conditions.

Winds in the Oakland area display several characteristic regimes. During the day, especially in summer, winds are from the southwest through northwest at 8 to 10 miles per hour as air is funneled through the Golden Gate and then diverges across the entire Bay Area. At night, especially in winter, the land becomes cooler than the ocean, and an offshore wind of two to four miles per hour develops from the Oakland Hills toward the Bay. After sunrise and after sunset, there is usually a period of light and disorganized wind flow, as one wind regime dissipates and the replacing regime has not yet become fully established. The net effect of the prevailing wind pattern is that the Oakland area is ventilated in the daytime with clean marine air, resulting in relatively good air quality. The air stagnation at night during the winter creates the potential for elevated air pollution levels, but the air draining off the hills toward the Bay is relatively unpolluted. Nighttime air quality is also usually relatively unpolluted in the East Bay area.

In addition to the winds that govern the horizontal rate and trajectory of air pollutants, the Bay Area experiences two characteristic temperature inversions that control the vertical depth

through which pollutants can be mixed. The first type of inversion occurs when the daytime onshore flow of marine air is capped by a dome of warm air that acts like a giant lid over the region. As the clean ocean air moves inland, pollutants from the urbanized area are generated in the lower layer of cool air with minimal dilution from the upper layer of warm air. As the lower layer travels towards the inland valleys and movement slows down, the pollutants in the air undergo photochemical transformations due to the sunlight and create unhealthful levels of smog, mainly due to ozone. The second type of inversion occurs at night as cool air pools in low elevations while the air aloft remains relatively warm. Shallow radiation inversions are formed, especially in winter, that trap pollutants near intensive traffic sources (such as freeways, shopping centers, etc.) and form localized violations of clean air standards called "hot spots." Although inversions can occur during all seasons of the year, the summertime regional capping inversion and the localized winter radiation inversion are the most dominant. The seasonal split in inversion intensity thus contributes to the different air quality climate found in summer and winter in Oakland.

Ambient Air Quality Standards

The 1970 Amendments to the *Clean Air Act* established national ambient air quality standards with states retaining the option to adopt more stringent standards or to include other pollution species. There is diversity between the more stringent state standards and federal standards currently in effect in California as shown in Table 4.5-1.

The ambient air quality standards are the levels of air quality considered safe to protect the public health and welfare and incorporate an adequate margin of safety. They are designed to protect those segments of the public most susceptible to respiratory distress (known as sensitive receptors) such as asthmatics, the young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat above the ambient air quality standards before adverse health effects are observed. Recent research has shown, however, that chronic exposure to air quality that marginally meets National Ambient Air Quality Standards (NAAQS) may nevertheless have adverse long-term respiratory health effects.

**TABLE 4.5-1
AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	California ^a	Federal ^b
Ozone	1 Hour	0.09 ppm ^c	0.12 ppm
Carbon Monoxide	1 Hour	20 ppm	35 ppm
	8 Hour	9.0 ppm	9 ppm
Nitrogen Dioxide	1 Hour	0.25 ppm	NA
	Annual	NA	0.053 ppm
Sulfur Dioxide	1 Hour	0.25 ppm	NA
	3 Hour	NA	0.5 ppm
	24 Hour	0.05 ppm	0.14 ppm
	Annual	NA	0.03 ppm
Respirable Particulate Matter (PM-10)	24 Hour	50 ug/m ^{3c}	150 mg/m ³
	Annual	30 ug/m ³	50 ug/m ³
Sulfates	24 Hour	25 ug/m ³	NA
Lead	30 Day	1.5 ug/m ³	NA
	Calendar Quarter	NA	1.5 ug/m ³
Hydrogen Sulfide	1 Hour	0.03 ppm	NA
Vinyl Chloride	24 Hour	0.010 ppm	NA

^aCalifornia standards for ozone, carbon monoxide, sulfur dioxide (1-hour), nitrogen dioxide, respirable particulate matter are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

^bNational standards, other than ozone and those based on annual averages are not to be exceeded more than once per year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

^cppm - parts per million by volume; ug/m³ = micrograms per cubic meter.

NA: Not Applicable.

SOURCE: California Air Resources Board, *California Air Quality Data Summary*, 1990.

Ambient Air Quality

Existing and probable future levels of air quality in the Oakland area can be inferred from ambient air quality measurements conducted by the Bay Area Air Quality Management District (BAAQMD) at its downtown monitoring station at 9th and Alice Streets. This station measures both regional pollution levels (ozone), and primary vehicular levels near busy roadways (carbon monoxide). However, not every pollutant with an Ambient Air Quality Standard is measured at the Oakland monitoring station. The nearest representative data source for pollutants not measured in Oakland is the monitoring station in the City of Richmond. Richmond data were thus used to supplement the downtown Oakland data to characterize the ambient air quality conditions in the Coliseum Redevelopment Area. Table 4.5-2 summarizes the last five years of published data from these monitoring stations (California ARB, 1988-1992). The following conclusions can be drawn from these data:

- Photochemical smog (ozone) levels have violated the hourly state standard less than once per year, and the less stringent federal standard has not been violated in the last five years of published data.
- Measurements of carbon monoxide (CO) show relatively low baseline levels with the hourly maximum averaging less than 50 percent of the allowable California standard. Similarly, maximum 8-hour carbon monoxide levels are around three parts per million (ppm) below their allowable 8-hour exposure. Nitrogen dioxide standards are also within allowable maximum concentrations.
- Airborne dust levels measured at Richmond show occasional violations of the California inhalable particulate matter standard (PM₁₀) on around 10 percent of all monitoring days. Peak levels of more than twice the State Ambient Air Quality Standard for inhalable particulate matter have been observed, but year-to-year variation in maxima is considerable. The less stringent federal suspended particulate matter standard has not been violated since PM₁₀ monitoring was initiated in the Oakland/Richmond area.

**TABLE 4.5-2
OAKLAND AMBIENT AIR QUALITY MONITORING SUMMARY, 1988-1992**

Pollutant	Number of Days Standards Were Violated and Maximum Concentrations Measured				
	1988	1989	1990	1991	1992
Ozone					
1-Hour >0.09 ppm	1	0	0	0	0
1-Hour >0.12 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.10	0.08	0.06	0.06	0.08
Carbon Dioxide					
1-Hour >20. ppm	0	0	0	0	0
8-Hour > 9. ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	10	10	8	9	7
Max. 8-Hour Conc. (ppm)	5.6	7.5	6.1	6.8	4.6
Nitrogen Dioxide					
1-Hour >0.25 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.11	0.11	0.08	0.08	0.08
Respirable Particulates (PM-10)					
24-Hour > 50 ug/m ³	---	5/48	5/61	9/59	3/61
24-Hour >150 ug/m ³	---	0/48	0/61	0/59	0/61
Max. Daily Conc. (ug/m ³)	---	115	109	97	55
Particulate Sulfate					
24-Hour >25 ug/m ³	0/56	0/61	0/61	0/60	0/61
Max. 24-Hr. Conc. (ug/m ³)	7.9	15.9	8.6	8.9	15.0

Notes: Items expressed as a ratio of x/y indicate that standards were violated on x days out of a total of y days on which measurements were taken that year.

Conc.=concentration; ppm = parts per million; ug/m³ = micrograms per cubic meter

SOURCE: California Air Resources Board, Summary of Air Quality Data, 1988 - 1992, BAAQMD Monitoring Stations, Oakland (Alice at 9th Street) and Richmond (13th Street).

Air Pollution Sources

Motor vehicles are the primary source of air pollution in the basin. In the Bay Area, on-road equipment produces about one-third of all reactive organic gases, one-half of all nitrogen oxides, and two thirds of all carbon monoxide emissions (BAAQMD, 1993). Table 4.5-3 summarizes the relative contribution of mobile, stationary and diffuse areawide sources of emissions. Stationary sources of emissions include relatively large industrial facilities as well as smaller sources such as service stations, dry cleaners, wastewater treatment plants, etc. Residential uses also contribute to air emissions from paints and solvents, fireplaces, heating and landscaping equipment. Although the contribution from any single residence is minimal, the cumulative contribution from a relatively high density of residences in an urban area can make this a non-negligible emission source.

Oakland has identified 17 major sources of air emissions (sources emitting more than 100 pounds per day). They are mapped in Technical Report No. 7 for the City's Open Space Conservation and Recreation program as part of the *Oakland Comprehensive Plan* update. Major stationary sources are concentrated along the Interstate 880 corridor and along the Oakland Estuary. Because the Bay Area Air Quality Management District (BAAQMD) has regulated major stationary sources of air emissions, their contribution to the total emissions burden has decreased within the last several decades, such that smaller, non-smokestack sources generate the largest fraction of such emissions.

Sensitive Receptors

Land uses such as schools, children's day care centers, hospitals, and convalescent homes are considered to be more sensitive to poor air quality than the general public because of their increased susceptibility to respiratory distress. In addition, persons engaged in strenuous work or exercise are sensitive to poor air quality. Residential areas are also considered sensitive compared to commercial and industrial areas because people generally spend longer periods of time at their residences, with associated greater exposure to ambient air quality conditions. There are a number of residential areas, schools, convalescent homes and hospitals within the Coliseum Redevelopment Area, as listed in Appendix C, Land Use and Zoning of this report.

TABLE 4.5-3

BAY AREA AIR BASIN EMISSIONS INVENTORY (1991)

Source Category	ROG	NO _x	SO _x	CO	PM ₁₀
On-Road Mobile	37%	53%	23%	67%	5%
Other Mobile ^a	12%	18%	20%	21%	1%
Industrial Activities	36%	29%	57%	10%	22%
Miscellaneous ^b	15%	<1%	<1%	2%	73%
Daily Emissions (tons/day)	819	551	121	2428	1044

^a Construction equipment, ships, trains, planes, lawn equipment.

^b Fires, road dust, construction dust, paints & solvents, pesticides.

NOTES:

ROG = reactive organic gas

NO_x = nitrogen oxides

SO_x = sulfur oxides

CO = carbon monoxide

PM₁₀ = respirable particulate matter with 10-micron diameter or less

SOURCE: BAAQMD, 1993

Air Quality Planning and Regulations

Amendments to the federal *Clean Air Act* required the states to classify Air Basins (or portions thereof) as either "attainment" or "nonattainment" with respect to the criteria air pollutants, based on whether or not the National Ambient Air Quality Standards have been achieved, and to prepare air quality plans containing emission reduction strategies for those areas designated as "nonattainment." The project area lies within the San Francisco Bay Area Air Basin which was designated as nonattainment for the National Ambient Air Quality Standards for ozone and carbon monoxide (California ARB, 1992).

A plan, the *1982 Bay Area Air Quality Plan (1982 Plan)*, was developed with the purpose of attaining the National Ambient Air Quality Standards for ozone and carbon monoxide by 1987 (ABAG, BAAQMD, MTC; 1982). By 1987, however, the San Francisco Bay Area Air Basin was still nonattainment for ozone and carbon monoxide; a contingency plan element of the *1982 Plan* has since been in effect. Pursuant to the 1990 federal *Clean Air Act* Amendments, a new plan will be developed for the San Francisco Bay Area Air Basin to satisfy new, more demanding federal air quality requirements. This new federal air quality plan is anticipated to be completed in 1994.

In 1988, California passed the *California Clean Air Act (Assembly Bill 2595)* which, like its federal counterpart, called for designations of areas as attainment or nonattainment (but in reference to State Ambient Air Quality Standards rather than national standards). The San Francisco Bay Area Air Basin has been designated as nonattainment for State Ambient Air Quality Standards for ozone, carbon monoxide, and inhalable particulate matter (California ARB, 1992). The 1988 *California Clean Air Act* also requires nonattainment areas (for ozone and carbon monoxide) to develop air quality plans that contain strategies for achieving attainment. For this purpose, the *1991 Clean Air Plan* was developed for the San Francisco Bay Area Air Basin (ABAG, BAAQMD, MTC; 1991). PM_{10} was not included in the same legislative scheme as the other criteria pollutants.

Because the San Francisco Bay Area Air Basin has been designated as a "severe" nonattainment area under the *California Clean Air Act*, the *1991 Clean Air Plan* includes the establishment of a no net increase rule for all new permitted stationary sources and Best

Available Retrofit Control Technology on existing stationary sources as well as more pervasive Transportation Control Measures than were contained in the *1982 Bay Area Air Quality Plan*.

The *California Clean Air Act* also requires severe nonattainment areas to implement programs that will achieve certain transportation performance standards: reduce the rate of increase in vehicle travel, achieve a 1.5 average vehicle ridership from all travel during commute periods by 1999, and achieve no net increase in vehicle emissions after 1997. The transportation control measures contained in the *1991 Clean Air Plan* are designed to achieve these mandated requirements, despite predicted increases in Bay Area population and employment. By their nature, transportation control measures require cooperation and coordination among public agencies, the private sector, and individual citizens.

Because emissions from regional growth in population and employment offset emissions reduction programs developed for existing emissions sources, the *1991 Clean Air Plan* must factor in growth in developing a more realistic strategy that will improve air quality despite increases in population and employment in the Bay Area. The *1991 Clean Air Plan* uses population and employment projections developed by the Association of Bay Area Governments (ABAG) for this purpose. Despite regional growth, the *1991 Clean Air Plan* predicts regional attainment of the carbon monoxide standard by 1995 and the federal ozone standard by the end of 1997.

The California Air Resources Board (ARB) is the state agency responsible for regulating air quality. California ARB responsibilities include establishing State Ambient Air Quality Standards, emissions standards and regulations for mobile emissions sources (e.g., autos, trucks, etc.), and overseeing the efforts of county-wide and multi-county air pollution control districts, which have primary responsibility over stationary sources. The Bay Area Air Quality Management District (BAAQMD) is the regional agency responsible for air quality regulation within the San Francisco Bay Area Air Basin. The BAAQMD regulates air quality through its permit authority over most types of stationary emission sources and through its planning and review activities.

4.5.2 Significance Criteria

A project is considered to have an adverse air quality impact if it causes violation of ambient air quality standards where none currently exist, if it contributes measurably to an existing violation of standards, or if it exposes a substantial number of persons to an elevated health risk.

For some pollutants such as carbon monoxide, the amount of emissions can be calculated and dispersion factors can be estimated to determine the quantitative degree of ambient air quality deterioration associated with a specific source. For other air pollutants such as ozone, air quality deterioration does not occur until after chemical transformation and dispersion, and is often far removed from the time and location the pollutant was emitted. In this situation, air quality impacts must be estimated on a regional basis and must be considered relative to regional air quality planning guidelines.

The proposed Redevelopment Plan relates to the air quality planning in the region through the growth assumptions made by the Association of Bay Area Governments (ABAG) for the region. ABAG uses the general plans from cities such as Oakland and any specific development plans to predict future patterns of population, housing, employment and land use, which in turn can be used to predict air pollution emissions from transportation sources. To the extent that the proposed Redevelopment Plan has been anticipated in the ABAG growth assumptions and individual project proponents implement those transportation control measures to the best of their ability, the regional emissions associated with implementation of the Redevelopment Plan would not have a significant air quality impact. If the proposed Redevelopment Plan were to cause greater levels of emissions to be generated than anticipated, or if these emissions were to occur sooner than currently predicted, or if available transportation control measures were not fully implemented, then the air quality impact of Redevelopment Plan implementation from non-conformity with the *1991 Bay Area Clean Air Plan* would be considered significant on a regional scale. Significance is generally evaluated in terms of a threshold level that represents sufficient emissions as to constitute a measurable impediment to attainment or maintenance of air quality standards on a regional scale.

The BAAQMD's *Guidelines for Assessing Impacts Projects and Plans* (1985) outlines "significance tests" which determine the potential effect of the project-generated criteria air pollutants on regional air quality (BAAQMD, 1985). The BAAQMD considers a net increase in emission from direct and indirect sources of one percent over existing county-wide emissions to be significant. In addition, a modeled violation of carbon monoxide standards is considered significant. Other significance thresholds include a net increase of combined mobile and stationary source of 150 pounds per day of hydrocarbons, nitrogen oxides, sulfur oxides or respirable particulates. Because curbside carbon monoxide concentrations are usually modeled for mobile sources, there is another test of 550 pounds per day of carbon monoxide that would be considered significant only if it leads to a modeled violation of carbon monoxide standards.

4.5.3 Impacts

The proposed Redevelopment Plan would affect air quality primarily through construction-related emissions, transportation-related vehicular exhaust emissions, and stationary source activities. Construction-related emissions would be short-term and would depend on each specific development project that would occur within the Coliseum Redevelopment Area. Transportation-related vehicular exhaust emissions would be long-term impacts and would be directly related to the employment projections associated with the Redevelopment Plan. It is unknown what, if any, stationary source activities would occur as a result of implementation of the proposed Redevelopment Plan, but any impacts would be long-term.

Construction

Dust Emissions

Construction activities associated with the Redevelopment Plan could generate dust, including the respirable fraction known as PM₁₀ (particles 10 microns or less in diameter). The extent of any construction activity that would occur within the Coliseum Redevelopment Area is not known at this time and would depend upon specific development projects that would occur with implementation of the Redevelopment Plan. Target Areas that would probably

experience the greatest activity levels include the Fruitvale BART Station, East Bay MUD / Edgewater Sites, Tidewater Avenue, and the Coliseum BART Station. Development projects could entail some demolition of existing facilities and construction of new facilities, which may require grading and excavation that would expose dust. Dust emissions would vary with the level and type of construction activity, the type of soil, and the prevailing weather conditions.

Dust generation is typically estimated based on the area of the surface disturbed, with estimates ranging from 30 to 60 pounds per acre per day assuming that effective dust control procedures (such as regular watering of exposed surfaces) are employed. This dust includes all particles of 30 microns in diameter or less (total suspended particulates), and the PM_{10} particles constitute about one-third of the total dust. Therefore, PM_{10} generation is estimated to about 10 to 20 pounds per acre per day during active construction. Significant dust levels would be considered to be on the order of 100 to 200 pounds per day of PM_{10} , which implies that a construction site would need to be about 10 acres or larger to result in a significant dust impact. The 10 target areas within the Coliseum Redevelopment Area are almost completely builtout and redevelopment would most likely occur on already graded land. However, it is possible that there would be an exposed construction site large enough or the simultaneous development of several small parcels to result in temporary significant impacts within the study area. Therefore, dust impacts could potentially be significant.

Equipment Emissions

During construction activities, equipment exhaust would also be generated, contributing to air quality emissions. Similar to potential dust emissions, the equipment activity level would be related to the project size within the Coliseum Redevelopment Area. It is anticipated that there would be a relatively low likelihood of large amounts of simultaneous heavy equipment operations occurring within the Coliseum Redevelopment Area because new development would occur on already developed land and development would be anticipated over a 15-year to 40-year time frame. However, it is possible that there would be a relatively large construction project or the simultaneous development of several smaller projects. Depending on the extent and duration of construction, and on types of construction equipment, equipment exhaust could violate the BAAQMD significance thresholds for daily pounds per day of

emissions, particularly for nitrogen oxides. Such impacts would be temporary, significant effects.

Hazardous Materials Emissions

If excavation is required during construction, there is the potential to encounter hazardous materials in the subsurface soils and groundwater due to previous land uses (such as leaking underground tanks), which could result in emissions of volatile organic compounds (such as gasoline) from the excavated area. The likelihood of encountering such substances is unknown at this time, and would depend on specific development requirements, the location of the projects and the previous land uses at the site. If contaminated soils or groundwater are encountered, remediation efforts would be determined on a case-by-case basis by either the Department of Toxic Substances Control of the California Environmental Protection Agency or the Regional Water Quality Control Board, with coordination in both cases with the Alameda County Department of Environmental Health Services Agency. In addition, if soils containing hazardous materials are excavated, the BAAQMD has jurisdiction over remediation procedures that involve airborne emissions and may impose specific requirements to protect ambient air quality. The coordination of remediation efforts with the BAAQMD and implementation of any imposed requirements would probably reduce any air quality impacts to less-than-significant levels assuming successful remediation plans for specific projects within the study area. Implementation of individual projects may warrant project specific analysis and mitigation. Refer to Section 4.7, Hazardous Materials for additional analysis of hazardous materials.

Operation

Regional Vehicular Emissions

The proposed Redevelopment Plan is assumed to result in intensification of land use within the designated areas of Oakland, with associated increases in employment, traffic, and air pollutant emissions. Based on the transportation analysis conducted for this study, it is estimated that with full project implementation by the year 2010, there would be an increase of 219,230 vehicle miles travelled (VMT) due to implementation of the proposed

Redevelopment Plan (Dowling Associates, 1995). To estimate the associated air pollutant emissions that would be generated, it was assumed, under worst-case conditions, that vehicles will continue to use conventional fuels (such as gasoline and diesel) rather than newly developed "clean" fuels or powered by electricity instead of fuel. The daily regional emissions from project-related traffic of the three primary automotive exhaust pollutants were estimated based on a model developed by the California Air Resources Board using the EMFAC7F emission factors, and are shown in Table 4.5-4.

Under the conservative assumptions outlined above, Redevelopment Plan-related traffic would result in BAAQMD significance thresholds to be violated for nitrogen oxides and equaled for hydrocarbons. These pollutants are precursors to regional ozone formation. Redevelopment Plan-related traffic, assuming it is not replacement traffic for existing employment commuting, would impede the attainment of ozone standards within the air basin as specified in the *1991 Clean Air Plan*. Even with less conservative assumptions that would include transportation control measures to reduce vehicle miles travelled, it is not anticipated that traffic volumes would be reduced enough to reduce nitrogen oxide emissions to less-than-significant levels. Therefore, the regional impact of air emissions due to plan-related traffic would be considered significant.

It should be noted that these calculations are based on the assumption that new residential uses and enhanced employment opportunities would result in a net increase in 219,230 vehicle miles travelled. There is a possibility that other factors associated with the Redevelopment Plan would indicate that the plan may provide some benefits to air quality that could offset the regional impact to some degree. For example, if the Redevelopment Plan were not implemented, it is possible that due to a reduction of jobs in Oakland, there could be increased commute travel to other communities, which could result in greater air emissions than with implementation of the Plan. In addition, some redevelopment projects may employ/train local workers, which would bring workers closer to their place of employment and could then reduce the total vehicle miles travelled and associated air emissions. These effects, however, are difficult to quantify, but should be accounted for in evaluating the significance of regional air quality impacts. Redevelopment Plan-related traffic may add more cars to local and regional roadways, as well as cause existing non-plan traffic to travel at slower, less pollution-efficient travel speeds.

TABLE 4.5-4

**ESTIMATED DAILY REGIONAL EMISSIONS FROM
PLAN-RELATED TRAFFIC**

Pollutant	Plan-related Emissions ^a	Significance Threshold ^b
Carbon Monoxide	1,725 lbs/day	1% of County (8,500 lb/day) ^c
Hydrocarbon	150 lbs/day	150 lbs/day
Nitrogen Oxides	362 lbs/day	150 lbs/day

^aBased on California Air Resources Board model using EMFAC7F emission factors.

^bBay Area Air Quality Management District (1985)

^cWhen levels exceed 550 lbs/day, a microscale analysis is required.

SOURCE: Orion Environmental Associates, 1995

Localized Vehicular Emissions

In addition to the regional contribution to the total pollution burden, Redevelopment Plan-related traffic may result in localized "hot spots" or areas with relatively high concentrations of emissions around stagnation points such as major intersections or heavily-travelled and congested roadways. Plan-related traffic may add more cars as well as cause existing non-project traffic to travel at slower, less pollution-efficient travel speeds.

In order to evaluate "hot spot" potential, a microscale impact analysis was conducted adjacent to the 44 roadway segments where the level of service (used as an indicator of travel speed) was calculated as part of the transportation analysis in this report (Dowling Associates, 1995). A Caltrans screening approach, which is based on the CALINE4 model, was used to estimate carbon monoxide concentrations along these roadway links (Caltrans, 1988). Carbon monoxide concentrations were calculated at a distance of 50 feet from the edge of each roadway to determine "hot spot" potential, based on worst-case conditions (peak hour traffic and theoretical minimum atmospheric mixing). The calculations also assume that maximum non-local background carbon monoxide levels² of 6.5 parts per million (ppm) for one hour and 4.1 ppm for eight hours occur simultaneously with these conditions. Redevelopment Plan buildout carbon monoxide background concentrations were estimated to be 4.3 ppm for one hour and 2.7 ppm for eight hours.³ Table 4.5-5 presents the microscale air quality impact analysis. The impact analysis compares existing carbon monoxide levels with future conditions (year 2010) without plan levels and future conditions (year 2010) with plan levels.

The results in Table 4.5-5 indicate that there are no carbon monoxide "hot spots" (exceedances or violations of the ambient standards) within the Coliseum Redevelopment Area. However, existing eight-hour exposures could approach the 9.0 ppm standard. Despite

²As determined from the latest *BAAQMD Guidelines*, Figure V-B-4 and V-B-5 which were revised August 1991 and adjusted for 1994.

³These levels were calculated using Table V-B-2 of the *BAAQMD Guidelines* (revised July 1993).

TABLE 4.5-5

**ESTIMATED CARBON MONOXIDE LEVELS ALONG SELECTED
ROADWAY SEGMENTS (in parts per million)**

Page 1 of 2

Roadway Link	Existing		Future (2010) No Plan		Future (2010) With Plan	
	1-hr	8-hr	1-hr	8-hr	1-hr	8-hr
Fruitvale Avenue						
West of I-880	10	6.8	6	3.7	6	3.8
East of I-880	9	5.8	5	3.0	5	3.2
High Street						
West of I-880	10	6.8	6	3.9	6	4.1
I-880 to San Leandro St.	8	5.3	5	2.9	5	3.1
San Leandro St. to E. 14th St.	9	6.1	5	3.1	5	3.3
66th Avenue						
West of San Leandro St.	9	5.8	5	2.9	5	3.0
East of San Leandro St.	8	5.2	5	3.1	5	3.1
Hegenberger Road						
West of SR 61 (Doolittle Dr.)	11	7.0	6	3.6	6	3.6
East of SR 61 (Doolittle Dr.)	13	8.8	5	3.5	5	3.5
West of I-880	13	8.9	5	3.5	5	3.5
I-880 to San Leandro St.	13	8.7	5	3.3	5	3.3
San Leandro St. to East 14th St.	10	6.6	5	3.2	5	3.2
98th Avenue						
End of 98th Ave.	11	7.0	5	3.2	5	3.2
West of I-880	11	7.0	6	3.6	6	3.7
I-880 to Edes Ave.	11	6.9	5	3.1	5	3.2
Edes Ave. to San Leandro St.	10	6.7	5	3.1	5	3.1
San Leandro St. to East 14th St.	10	6.5	5	3.0	5	3.1
East 14th Street						
South of 98th Ave.	11	6.9	5	3.1	5	3.2
98th Ave. to 85th Ave.	10	6.6	5	3.0	5	3.0
85th Ave. to Hegenberger Rd.	10	6.6	5	3.0	5	3.0
Hegenberger Rd. to 66th Ave.	11	6.9	5	3.2	5	3.3
66th Ave. to Seminary Ave.	10	6.7	5	3.2	5	3.3
Seminary Ave. to High St.	10	6.3	5	3.1	5	3.2
North of High St.	12	7.8	5	3.3	5	3.3
South of Fruitvale Ave.	9	6.1	5	3.0	5	3.1

TABLE 4.5-5

**ESTIMATED CARBON MONOXIDE LEVELS ALONG SELECTED
ROADWAY SEGMENTS (in parts per million)**

Page 2 of 2

Roadway Link	Existing		Future (2010) No Plan		Future (2010) With Plan	
	1-hr	8-hr	1-hr	8-hr	1-hr	8-hr
San Leandro Street						
South of 98th Ave.	9	5.8	5	3.0	5	3.1
98th Ave. to 85th Ave.	9	6.1	5	3.2	5	3.2
85th Ave. to Hegenberger Rd.	11	6.9	5	3.1	5	3.3
Hegenberger Rd. to 66th Ave.	10	6.5	5	3.0	5	3.1
66th Ave. to Seminary Ave.	9	5.8	5	3.1	5	3.2
Seminary Ave. to High St.	9	5.5	5	3.1	5	3.2
North of High St.	8	5.4	5	2.9	5	2.9
South of Fruitvale Ave.	8	5.3	5	2.9	5	2.9
I-880						
South of 98th Ave.	11	7.0	6	4.1	7	4.2
North of 98th Ave.	11	7.1	6	4.1	7	4.2
South of 66th Ave.	11	7.0	6	4.0	6	4.1
North of 66th Ave.	11	7.0	6	4.0	6	4.1
South of Fruitvale Ave.	11	7.0	6	4.0	6	4.1
State Route 61 (Doolittle Drive)						
South of Hegenberger Rd.	10	6.6	6	3.5	6	3.5
North of Hegenberger Rd.	11	7.3	5	2.9	5	3.0

California Carbon Monoxide Standards:

One-hour Averaging Time = 20 ppm

Eight-hour Averaging Time = 9.0 ppm

SOURCE: Orion Environmental Associates, 1995 and based on Caltrans, 1988

the increased traffic volumes or congestion effects of the Redevelopment Plan, future (year 2010) projections for carbon monoxide indicate reductions in carbon monoxide for both the Plan and No-Plan scenarios due to anticipated improvements in vehicular emissions controls. Therefore, future microscale air quality is estimated to be better than 1994 conditions for both the Plan and No-Plan scenarios. The incremental increase associated with the Plan is estimated to be less than 1 ppm for the one-hour period and 0.2 ppm for the eight-hour period. These incremental increases would not create any violations of carbon monoxide standards. Therefore, microscale air quality impacts from implementation of the proposed Redevelopment Plan would be less than significant.

Stationary Source Activities

Since the Redevelopment Plan would apply to all business or industries that are located in or would be developed within the Coliseum Redevelopment Area, there is the potential that stationary source activities, such as manufacturing or fuel combustion, could be retained or added, and there would be associated air emissions. Stationary source emissions are regulated by the BAAQMD. The BAAQMD is also authorized to abate nuisance emissions of fumes, dusts, mists, and odors from any source within its jurisdiction, even if it is exempt from permit requirements. If existing businesses or industries were to expand or upgrade their operations, it is likely that the older facilities would be replaced with newer technology and cleaner emissions, which would be a beneficial impact. New industry often must utilize best available control technology (BACT) under current BAAQMD rules. Thus, due to the BAAQMD regulations and permit process for stationary sources and the likelihood for improved facilities, the air quality impact from stationary source emissions associated with the proposed Redevelopment Plan would be less than significant for the Redevelopment Plan. Implementation of individual projects in the study area may warrant project-specific analysis and mitigation.

4.5.4 Mitigation

Construction

1. There is a potential for significant, temporary air emission impacts if one large construction site or several simultaneous smaller construction activities were to exceed a threshold disturbance level. The following measures are identified as a program-level guideline to reduce construction emissions to a less-than-significant level:

- For any demolition and/or new construction, implement a dust control plan with the following elements: regular watering of disturbed soil (at least twice per day); placing tarps over dirt or debris in haul trucks or alternatively maintaining two feet of freeboard in haul trucks loaded with dirt or debris; hydroseeding of all cleared or graded areas if construction on the parcel is not expected to begin within 60 days; washing construction site access points to public streets for a distance of 250 feet in each direction at the conclusion of each workday.
- Minimize equipment and truck exhaust emissions by performing a low-NOx tune-up on all off-road equipment before it arrives at the job site, and by limiting allowable truck idling to five minutes while waiting to load or unload materials.
- Reduce regional congestion effects by encouraging contractor participation in rideshare programs, by providing off-street parking for construction personnel, and by minimizing deliveries of construction materials during peak hours.

With implementation of these measures on a project-specific level, temporary construction-related emissions due to implementation of the Redevelopment Plan would be less than significant.

Operation

2. Redevelopment Plan-related vehicular emissions would be significant on a regional basis, because the estimated emissions of nitrogen oxides would exceed (violate) significance threshold levels. This significance is based on the assumption that implementation of the Redevelopment Plan would generate new travel beyond existing trip-making patterns. In order to reduce emission levels, the City of Oakland should require implementation of transportation control measures (TCMs) as part of Redevelopment Plan implementation. The City would be responsible for developing, implementing and coordinating transportation control measures that would focus on the specific geographic, land use, and employment patterns within the Coliseum Redevelopment Area. The purpose of such a program (possibly implemented through formation of a Transportation Management Agency) would be to optimize and integrate transportation control measures from individual businesses. However, because the total estimated air emissions for nitrogen oxides would exceed (violate) the significance thresholds by a relatively wide margin, it is not realistic to expect implementation of transportation control measures to reduce the levels of emissions to below the threshold levels, and the impact would remain significant. Nevertheless, implementation of an aggressive and comprehensive transportation control measures program would allow the City to mitigate the impacts to the fullest extent feasible.
3. The city should participate in the Alameda County Congestion Management Agency corridor management plan.

REFERENCES - Air Quality

Association of Bay Area Governments (ABAG), Bay Area Air Quality Management District (BAAQMD), Metropolitan Transportation Commission (MTC), *1991 Clean Air Plan*, 1991.

Association of Bay Area Governments (ABAG), Bay Area Air Quality Management District (BAAQMD), Metropolitan Transportation Commission (MTC), *1982 Bay Area Air Quality Plan*, 1982.

Bay Area Air Quality Management District (BAAQMD), *Air Quality Handbook*, 1993.

Bay Area Air Quality Management District (BAAQMD), *Air Quality and Urban Development; Guidelines for Assessing Impacts of Projects and Plans*, 1985, revised 1991, revised 1993.

California Air Resources Board (California ARB), *Area Designations for State and National Ambient Air Quality Standards*, 1992.

California Air Resources Board, *Summary of Air Quality Data*, 1988-1992.

California Clean Air Act, (Assembly Bill 2595), 1988.

Caltrans, *Air Quality Technical Analysis*, 1988.

City of Oakland (Oakland), *Oakland General Plan*, Technical Report No. 7, Open Space Conservation and Recreation Program.

Clean Air Act, Amendments, 1970 and 1990.

Dowling Associates, *Transportation Analysis for Oakland Coliseum Redevelopment Area Plan EIR*, 1995.

4.6 NOISE

4.6.1 Environmental Setting

Environmental noise is usually measured in A-weighted decibels (dBA⁴). In general, people can just perceive a three-decibel difference in noise levels; a difference of 10 dBA is perceived as a doubling of loudness. Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Two common noise descriptors are the energy-equivalent noise level (Leq⁵) and the Community Noise Equivalent Level (CNEL⁶). Some commonly-encountered noise sources and their associated noise levels are shown in Table 4.6-1.

Existing Noise Sources

The City's Noise Element identifies the major transportation facilities as the primary noise generators within the City (City of Oakland, 1974). Major transportation facilities in the Coliseum Redevelopment Area include Interstate 880 (I-880), State Route 185 (SR 185, also East 14th Street), State Route 61 (SR 61, also Doolittle Drive), San Leandro Street, Fruitvale Avenue, High Street, 66th Avenue, Hegenberger Road / Airport Drive, and 98th Avenue.

⁴The decibel (dB) is a logarithmic unit used to quantify sound intensity. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is factored into sound descriptions in a process called "A-weighting" written as "dBA".

⁵Leq: The energy equivalent noise level, a steady-state energy level which represents the acoustical energy of a given measurement period (in this case, 10 or 15 minutes) that is equal to the actual time-varying sound level measured during the same period.

⁶CNEL: Community Noise Equivalent Level. Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that for planning purposes, an artificial dB increment be added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL). The City of Oakland's noise guidelines are based on both the CNEL and Ldn descriptors. Ldn is similar to CNEL in that they both add a 10-dBA penalty to all noise events between 10:00 p.m. and 7:00 a.m.; CNEL also adds a penalty during the evening hours between 7:00 p.m. and 10:00 p.m.. In practice, Ldn and CNEL usually do not differ by more than one to two dBA at any given location for transportation noise sources

**TABLE 4.6-1
COMMON NOISE SOURCES AND THEIR
CORRESPONDING NOISE LEVELS**

Noise Source	Noise Levels (dBA) ^a
Rustle of leaves in wind	10
Whisper	20
Average residences	30
Refrigerator @ 3 feet	40
Average office	50
Normal speech (or dishwasher @ 10 feet)	60
Vacuum cleaner @ 10 feet	70
Garbage disposal @ 3 feet	80
Food blender (or heavy truck @ 50 feet)	90
Auto horn	100

^a Noise levels indicated are at distances at which these noise sources are commonly encountered.

SOURCE: Cunniff, Patrick F., *Environmental Noise Pollution*, 1977.

In addition to traffic noise, other major sources of noise include aircraft noise associated with the operation of Metropolitan Oakland International Airport, as well as train noise associated with the operation of Bay Area Rapid Transit (BART) facilities and railroad facilities of the Union Pacific Railroad and Southern Pacific Transportation Company. Elevated BART facilities extend in a northwest-southeast direction (primarily along San Leandro Street) through the Coliseum Redevelopment Area.

There are several railroad tracks within the Coliseum Redevelopment Area. Railroad tracks of the Union Pacific Railroad are located adjacent to the BART tracks, while tracks of the Southern Pacific Transportation Company extend generally parallel to the BART tracks between San Leandro Street and I-880. A spur line operated by Southern Pacific Transportation Company is located on the west side of I-880 extending along the San Leandro Bay shoreline as far south as Elmhurst Creek (between Hassler Way and Pardee Lane).

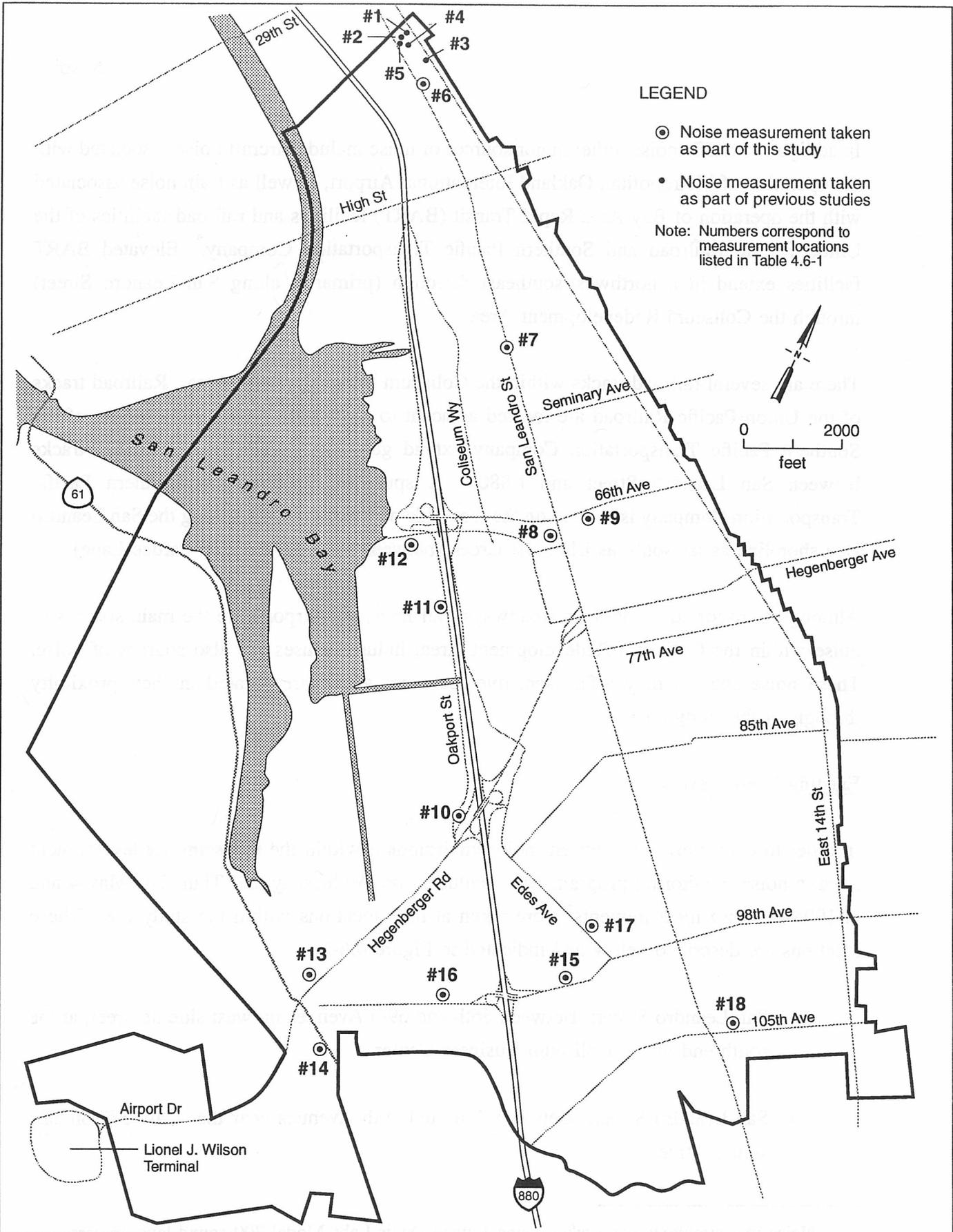
Although transportation facilities (roadways, rail lines, and airport) are the main sources of noise within the Coliseum Redevelopment Area, industrial uses are also sources of noise. These noise sources may affect sensitive receptors which are located in their proximity throughout the study area.

Existing Noise Levels

In order to characterize the current noise environment within the Coliseum Redevelopment Area, a noise monitoring program was conducted on Wednesday and Thursday, May 4 and 5, 1994. Noise measurements⁷ were taken at nine locations within the study area. These locations are described below and indicated in Figure 4.6-1.

- San Leandro Street: Between 66th and 69th Avenues on west side of street, at the south end of the Coliseum Business Center.
- San Leandro Street: Between 38th and 39th Avenues near the "Cafe 38" on east side of street.

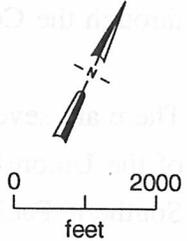
⁷ Noise measurements were taken using Larson-Davis Labs Model 700 sound level meters.



LEGEND

- ⊙ Noise measurement taken as part of this study
- Noise measurement taken as part of previous studies

Note: Numbers correspond to measurement locations listed in Table 4.6-1



Project No. 93C0508A	Coliseum Area Redevelopment Plan	NOISE MONITORING LOCATIONS	Figure 4.6-1
Woodward-Clyde Consultants			

- 66th Avenue: On a bench at the Coliseum Gardens Park on south side of street.
- Hegenberger Road: In front of the Hilton Hotel on north side of street.
- Doolittle Drive: At the Galbraith Golf Course, 400 feet south of Airport Drive on the west side of street.
- 98th Avenue: At Empire Road on a utility box on north side of street.
- 98th Avenue: At Denslowe on a utility box on north side of street.
- Edes Avenue: At Tyler Street on a planter wall in front of the Brookfield Village Branch of the Oakland Public Library on northeast side of street.
- 105th Avenue: On a fence at 1026 105th Avenue on north side of street.

These locations were selected based on areas where the noise impact potential would be greatest. These locations were determined by overlaying sensitive receptor locations with roadways where future noise increases were most likely to occur. Noise measurements taken for previous studies during the last few years were compiled, and the locations of these measurements are also indicated on Figure 4.6-1. Noise levels were measured for 24-hours at some locations and over 10- or 15-minute periods at other locations. Noise measurement results from this and other studies are summarized in Table 4.6-2.

Table 4.6-2 presents 24-hour noise levels in terms of CNEL. Short-term measurement data are presented as Leq for the measurement period. By comparing Leq and CNEL data collected as part of two 24-hour measurements, it was found that CNEL levels in the noisier areas (along industrial-oriented streets) are generally 2.5 to 3.0 dBA higher than the hourly Leq levels; in quieter areas (along residential-oriented streets), CNEL and Leq are generally the same. These adjustment factors were used to estimate CNEL levels along all major roadways in the study area.

**TABLE 4.6-2
EXISTING NOISE LEVELS AT MEASUREMENT LOCATIONS**

Measurement Locations	Distance from Roadway Centerline (C/L)	CNEL Noise Level (dBA)	Leq Noise Level (dBA)
1. Fruitvale Ave. (west of East 14th St.) ^b	50 ft. s/o Fruitvale Ave. C/L	71	68
2. Fruitvale Ave. (at Bart Station) ^c	50 ft. s/o Fruitvale Ave. C/L	70 ^g	67
3. East 12th St. (north of 37th Ave.) ^c	50 ft. e/o East 12th St. C/L	64-67 ^g	64
4. UPRR Tracks (north of 34th Ave.) ^c	20 & 27 ft. w/o center of tracks ^d	71	76 ^e
5. San Leandro St. (north of 33rd Ave.) ^c	45 ft. e/o San Leandro St. C/L	74 ^g	71
6. San Leandro St. (south of 38th Ave.) ^f	74 ft. e/o of San Leandro St. C/L	73.3 ^g	70.3 ^a
7. San Leandro St. (at 53rd Ave.) ^b	72 ft. w/o San Leandro St. C/L	71	69
8. San Leandro St. (south of 66th Ave.) ^f	50 ft. w/o of San Leandro St. C/L	78.5	76
9. 66th Ave. (east of San Leandro St.) ^f	45 feet s/o 66th Ave. C/L	68.9 ^g	65.9 ^a
10. Oakport St. (north of Hegenberger Rd.) ^b	38 feet e/o Oakport St. C/L	65	63
11. Oakport St. (north of Hassler Way) ^h	100 feet w/o Oakport Street C/L	70.6	66
12. Oakport St. (south of 66th Ave./ Damon Slough) ^h	525 feet w/o Oakport Street C/L	60.2	61 [*]
13. Hegenberger Rd. (east of Doolittle Dr.) ^f	55 ft. n/o Hegenberger Rd. C/L	73.9 ^g	70.9 ^a
14. Doolittle Dr. (south of Airport Dr.) ^f	116 ft. w/o Doolittle Dr. C/L	70.7	68
15. 98th Ave. (east of I-880) ^f	50 ft. n/o of 98th Ave. C/L	76.3 ^g	73.3 ^a
16. 98th Ave. (west of I-880) ^f	30 ft. n/o of 98th Ave. C/L	78.1 ^g	75.1 ^a
17. Edes Ave. (north of 98th Ave.) ^f	40 ft. n/o Edes Ave. C/L	65.0 ^g	65.0 ^a
18. 105th Ave. (east of San Leandro St.) ^f	38 ft. n/o 105th Ave. C/L	70.2 ^g	70.2 ^a

NOTES: CNEL: Community Noise Level Equivalents
 Leq: Energy Equivalent Noise Level for 15-minute measurement period.
 s/o, w/o, e/o, n/o: south of, west of, east of, north of

^aLeq levels are based on measurements taken over 10 to 15 minutes between 2:30 p.m. and 5:10 p.m.

^bSource: Orion Environmental Associates, 1992.

^cSource: Orion Environmental Associates, 1991.

^dCNEL noise level was measured at 20 feet west of the track center, while the Leq was a 10-minute measurement taken 27 feet west of the track center.

^e A train went by during measurement period for Leq.

^fSource: Orion Environmental Associates, 1994.

^gCNEL is estimated based on Leq-CNEL relationships measured between 3:00 p.m. and 5:00 p.m. as part of the 24-hour measurements collected at Locations #8 and 14#. A "master/slave" methodology was used to augment 24-hour measurements at auxiliary locations in the vicinity of the 24-hour monitors (Harris, 1979). The Leq-CNEL relationship was established by comparing the Leqs collected at the two 24-hour measurement locations between 3:00 p.m. and 5:00 p.m. and comparing them to the 24-hour CNELs collected at these same locations. Noise measurement data indicated that the hourly Leq between 3:00 p.m.-4:00 p.m. and the Leq between 4:00 p.m.-5:00 p.m. were identical at Location #8 and varied by 0.5 decibel at Location #14. Noise data indicated that CNEL was 2.5 to 3.0 dBA higher than the Leq. This 3-dBA difference was applied to the Leq measured on this street segment in order to estimate the CNEL for this segment. It was established that the temporal pattern is the same throughout the study area.

^hSource: Orion Environmental Associates, 1994a.

The measurements in Table 4.6-2 indicate that noise levels in the Coliseum Redevelopment Area are generally high with the highest noise levels (72 dBA at 200 feet from the freeway centerline south of 66th Avenue) occurring in areas adjacent to I-880. Areas adjacent to some sections of the following local roadways in the study area are subject to noise levels between (70 to 80 dBA (CNEL) within 50 feet of roadway centerlines:

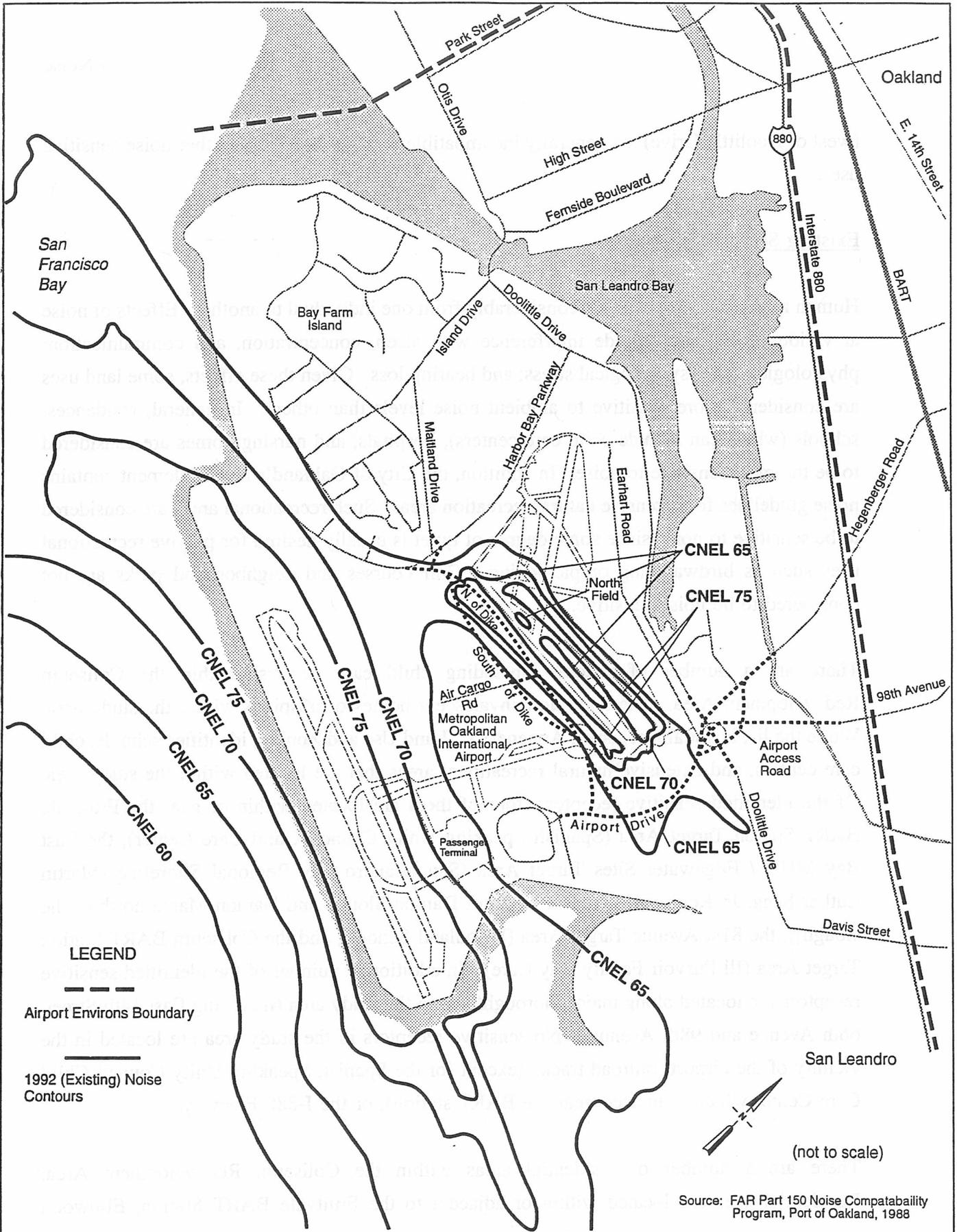
- Fruitvale Avenue 71 dBA (CNEL) at 50 feet from roadway centerline
- East 14th Street 72 dBA (CNEL) at 50 feet from roadway centerline
- San Leandro Street 73-79 dBA (CNEL) at 50 feet from roadway centerline
- Oakport Street 76 dBA (CNEL) at 50 feet from roadway centerline
- Hegenberger Road 74 dBA (CNEL) at 50 feet from roadway centerline
- Doolittle Drive 76 dBA (CNEL) at 50 feet from roadway centerline
- 98th Avenue 76 dBA (CNEL) at 50 feet from roadway centerline

Relatively lower noise levels (60 to 70 dBA [CNEL] within 50 feet of roadway centerlines) occur in areas adjacent to sections of the following major roadways in the Coliseum Redevelopment Area:

- East 12th Street 64-67 dBA (CNEL) at 50 feet from roadway centerline
- 66th Avenue 68 dBA (CNEL) at 50 feet from roadway centerline
- Edes Avenue 64 dBA (CNEL) at 50 feet from roadway centerline
- 105th Avenue 69 dBA (CNEL) at 50 feet from roadway centerline

Noise levels associated with the Metropolitan Oakland International Airport are monitored on a quarterly basis and the CNEL noise contours are updated on an annual basis. The 1992 CNEL noise contours for the airport are presented in Figure 4.6-2. Within the study area, the noise contours indicate that noise levels above 65 dBA CNEL associated with airport operations are confined to areas southwest of Doolittle Drive.

Measured noise levels were compared to City noise and land use compatibility guidelines. The existing noise environments in the vicinity of the I-880 freeway and adjacent to major thoroughfares (particularly those listed above), along railroad lines, and in the airport vicinity



LEGEND

Airport Environs Boundary

—
1992 (Existing) Noise Contours

Source: FAR Part 150 Noise Compatibility Program, Port of Oakland, 1988



(not to scale)

Project No. 91C0508A	Coliseum Area Redevelopment Plan	CNEL CONTOURS OAKLAND AIRPORT AND VICINITY	Figure 4.6-2
Woodward-Clyde Consultants			

(west of Doolittle Drive) are generally incompatible with residential and other noise-sensitive uses.

Existing Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication; physiological and psychological stress; and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools (which can include child care centers), hospitals, and nursing homes are considered to be the most sensitive to noise. In addition, the City of Oakland's Noise Element contains noise guidelines for extensive natural recreation areas. Such recreational areas are considered to be sensitive to noise since some degree of quiet is usually desired for passive recreational uses such as birdwatching or picnicking. Golf courses and neighborhood parks are not considered to be noise-sensitive.

There are a number of schools (including child care centers) within the Coliseum Redevelopment Area. There are no convalescent homes or hospitals within the study area. While the list is not all-inclusive, Appendix C, Land Use and Zoning, identifies schools, child care centers, and extensive natural recreational areas that are located within the study area. Of the identified sensitive receptors, four of them are located within or near the Fruitvale BART Station Target Area (Spanish Speaking Unity Council Child Care Center), the East Bay MUD / Edgewater Sites Target Area (San Leandro Bay Regional Shoreline [Martin Luther King, Jr. Regional Shoreline south of Damon Slough and Damon Marsh north of the slough]), the 81st Avenue Target Area (Woodland School), and the Coliseum BART Station Target Area (Ill Purvoir Family Day Care). In addition, a number of the identified sensitive receptors are located along major thoroughfares in the study area (including East 14th Street, 66th Avenue and 98th Avenue). No sensitive receptors in the study area are located in the vicinity of the airport, railroad tracks (except for the Spanish Speaking Unity Council Child Care Center which is located near the BART station), or the I-880 Freeway.

There are a number of residential areas within the Coliseum Redevelopment Area. Residential uses are located within or adjacent to the Fruitvale BART Station, Elmwood

Avenue, Railroad Avenue, Pippin/Pearmain, 81st Avenue, Coliseum BART Station and 98th Avenue Industrial Target Areas. In addition, a number of the residential uses are located along identified major thoroughfares (including Fruitvale Avenue, East 12th Street, San Leandro Street, 66th Avenue, Hegenberger Road, 98th Avenue, 105th Avenue, and Edes Avenue), near the I-880 freeway (in the southern portion of the study area between 105th Avenue and Hegenberger Road), and along the two major railroad lines.

With respect to sensitive residential receptors, the Noise Element of the *Oakland Comprehensive Plan* identifies nine areas, Areas A through I, which were considered to be "critical noise impact areas" in 1974 (Oakland, 1974). Three of these areas are located within the Coliseum Redevelopment Area with portions of these areas located within five target areas. The Noise Element identifies these areas as areas that are "noisier than is desirable," when compared to noise compatibility criteria developed by U.S. Department of Housing and Urban Development and U.S. Environmental Protection Agency. Such areas primarily involve residential uses abutting freeways or heavily travelled streets. It is noted in the Noise Element that these identified areas were areas that were having the "most serious" noise problems in 1974, and identification of these areas is not intended to imply a lack of current problems elsewhere. The five most critical problem areas in the Coliseum Redevelopment Area in 1974 are identified as follows:

Area G: This is the area along I-880 and East 14th Street approximately between Adeline Street on the north and High Street on the south. In this area, residential uses are subject to noise generated by local industrial uses, traffic on I-880, BART operations, and operations along the Southern Pacific and Union Pacific railroad lines. The Fruitvale BART Station and Elmwood Avenue Target Areas are located within this noise impact area. In these target areas, residential uses are subject to noise generated by local industrial uses, traffic on San Leandro Street, Fruitvale Avenue, and East 12th Street, as well as railroad operations along the BART, Union Pacific and Southern Pacific tracks.

Area H: This is a narrow band which extends generally east of San Leandro Street from about High Street to the San Leandro-Oakland city limit. This area comprises the boundary between the East Oakland industrial belt and adjacent residential areas.

Residential uses are subject to noise generated by local industrial uses, truck traffic on local truck routes, BART operations, and railroad operations. The 81st Avenue and Coliseum BART Station Target Areas are located within this noise impact area. In these target areas, residential uses are subject to noise generated by local industrial uses, truck traffic on San Leandro Street, and railroad operations along the BART and Union Pacific tracks.

Area I: The area along I-880 which extends from just north of Hegenberger Road to the San Leandro-Oakland city limit. Freeway noise extends into several residential neighborhoods as well as some noise-sensitive uses (e.g., motels) along Hegenberger Road. Residential uses in this area appear to be located just outside of the 98th Avenue Industrial Target Area and therefore, there are no sensitive receptors in the area that is affected by these high noise levels. However, residential uses east of the area are subject to high noise levels in the vicinity of the I-880 freeway and 98th Avenue.

(In addition to these three areas, the City's Noise Element also identifies two areas within the Coliseum Redevelopment Area as areas which could be subject to noise-relevant circulation issues in the future. These issues are described as follows:)

Circulation Issue 1:

While this area is not specifically located, it represents a traffic corridor across the neighborhoods of East Oakland. This corridor would be created if a Route 13 freeway is built in the future somewhere across East Oakland, although neither the need for this freeway nor its alignment have been established. If it were built, its noise impacts would depend largely on its design and on whether trucks were allowed to use it.

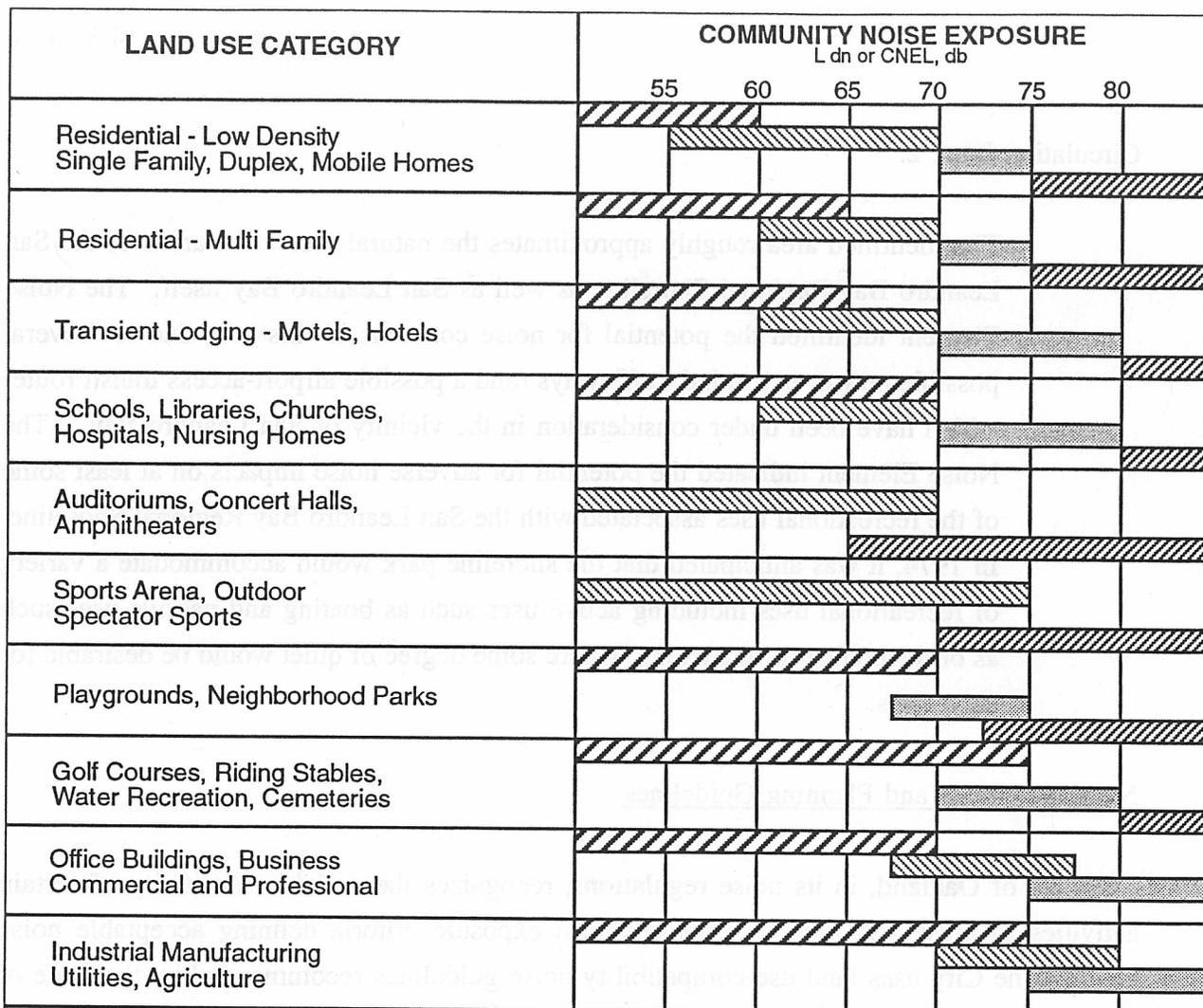
Circulation Issue 2:

The identified area roughly approximates the natural recreation areas of the San Leandro Bay Regional Shoreline as well as San Leandro Bay itself. The Noise Element identified the potential for noise concerns in this area due to "several possible new or expanded trafficways (and a possible airport-access transit route) which have been under consideration in the vicinity of San Leandro Bay." The Noise Element indicated the potential for adverse noise impacts on at least some of the recreational uses associated with the San Leandro Bay Regional Shoreline. In 1974, it was anticipated that the shoreline park would accommodate a variety of recreational uses including active uses such as boating and passive uses such as birdwatching or picnicking, where some degree of quiet would be desirable for most uses.

Noise Standards and Planning Guidelines

The City of Oakland, in its noise regulations, recognizes the variable sensitivity of certain activities to noise and thus, established noise exposure criteria defining acceptable noise levels. The City uses land use compatibility noise guidelines recommended by the State of California, presented in Figure 4.6-3. For residential and transient lodging uses, state guidelines indicate that noise levels up to 60 to 65 dBA (Ldn or CNEL) are normally acceptable depending on the type of residential use. For office/commercial uses as well as schools, libraries, churches, hospitals and nursing homes, state guidelines indicate that noise levels up to 70 dBA (Ldn or CNEL) are considered normally acceptable. For golf courses, water recreation, and industrial uses, noise levels up to 75 dBA are considered normally acceptable.

"Normally acceptable" is defined as satisfactory for the specified land use, assuming that normal conventional construction is used in buildings. Under most of these land use categories, overlapping ranges of acceptability and unacceptability are presented, leaving some ambiguity in areas where noise levels fall within the overlapping range. For purposes of this analysis, the most conservative interpretation is followed where noise levels fall within



INTERPRETATION

-  **NORMALLY ACCEPTABLE**
Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
-  **CONDITIONALLY ACCEPTABLE**
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
-  **NORMALLY UNACCEPTABLE**
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
-  **CLEARLY UNACCEPTABLE**
New construction or development should be generally not be undertaken.

SOURCE: State of California, Governor's Office of Planning and Research, *General Plan Guidelines*, 1990.

this range (i.e., if a noise level falls within the overlapping range for normally and conditionally acceptable, it is identified as conditionally acceptable).

Although there are no state guidelines for extensive natural recreation areas, noise guidelines included in the City's Noise Element includes land use compatibility noise guidelines by the U.S. Department of Housing and Urban Development that define the maximum acceptable noise levels for extensive natural recreation areas. Noise levels up to 60 dBA (CNEL) are considered clearly acceptable for extensive natural recreation areas. Noise levels between 60 and 75 dBA (CNEL) are defined as normally acceptable for natural recreation areas. "Normally acceptable" is defined by City guidelines as levels where noise exposure is of some concern, but common building construction would be considered adequate to provide an acceptable indoor environment. Since there is no indoor environment with such recreational uses, the City's definition of normally acceptable for this use indicates some concern with compatibility where noise levels are above 60 dBA.

Title 24, Part 2 of the *California Code of Regulations* contains requirements for construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings intended to limit the extent of noise transmitted into habitable spaces. These requirements are collectively known as California Noise Insulation Standards. For limiting noise transmitted between adjacent dwelling units, the standards specify the extent to which walls, doors, and floor-ceiling assemblies must block or absorb sound. For limiting noise from exterior sources, the Standards set forth an interior standard of 45 dBA (CNEL or Ldn) in any habitable room with all doors and windows closed and require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to exterior noise levels greater than a CNEL or Ldn of 60 dBA.

4.6.2 Significance Criteria

The potential significance of impacts identified below are defined by comparing existing and projected noise levels with the following criteria: (1) the City-adopted state land use compatibility noise guidelines for all specified uses and City guidelines for extensive natural recreation areas; (2) compliance with California Noise Insulation Standards (Title 24) for new

hotels, motels, apartment houses, and dwellings other than detached single-family dwellings; and (3) a determination of whether the incremental noise increase would be noticeable to most people. Land use compatibility guidelines are presented in Figure 4.6-3. A 10-dBA incremental noise increase is perceived by most people to be a doubling in the loudness of a sound. A 5-dBA increase is readily noticed by most people, while a 3-dBA increase is barely noticeable to most people.

For this EIR the Redevelopment Plan will result in significant effects:

- 1) if the noise resulting from the Plan were to increase ambient noise levels (CNEL) by more than 4 dBA, and those noise levels increase from below acceptable levels to above acceptable levels for affected land uses; 2) if the noise resulting from operation of the Plan increases ambient noise levels by more than 4 dBA where existing levels are already above acceptable levels; 3) if operation of the Plan results in a 5 dBA or greater increase in noise levels even though the acceptability threshold has not been reached; and 4) exterior construction noise levels at the nearest residential receptors exceed 70 dBA during daytime hours or 60 dBA during nighttime hours.

4.6.3 Impacts

Any future development or land uses that would result from implementation of the Redevelopment Plan would generate short-term construction-related noise increases and possibly introduce long-term operational noise increases in areas currently not occupied by these uses. In addition, traffic increases resulting from future development could exacerbate existing noise compatibility problems along major thoroughfares. There also could be noise compatibility concerns with existing or designated residential uses being located near major thoroughfares or existing or new industrial development.

Construction Noise

Construction-related impacts would vary with each specific development or expansion project that may occur within the Coliseum Redevelopment Area. Construction-related noise generation would range from about 78-81 dBA for compressors and generators to about 101

dBA for noise peaks from a pile driver (measured at 50 feet from the source). The rate of attenuation of noise level is about six decibels (dBA) for every doubling of distance away from a point source. The near-field noise level (at 50 feet from the noise source) for several types of typical construction equipment and potentially reduced noise levels are shown in Table 4.6-3.

Such noise levels could result in temporary disturbance (e.g., speech interference) of any adjacent uses if the interior noise level is raised so that it exceeds 45 dBA. The highest noise level that permits relaxed conversation with 100 percent intelligibility throughout the room is 45 dBA. People tend to raise their voices when the background noise exceeds 45-50 dBA (FHWA 1991). A typical building can reduce noise levels by 20 dBA with the windows closed. Therefore, to maintain an interior level of 45 dBA, an exterior noise level of 65 dBA or less would need to be maintained at residences. This could only be on a temporary basis in some cases since windows must remain closed. While construction impacts could occur at any location where development projects are proposed within the Coliseum Redevelopment Area, it is anticipated that the potential for construction-related noise impacts would be greatest where residential uses or sensitive receptors are located adjacent to areas proposed for development. The potential for development would be greatest in the 10 target areas and along the East 14th Street corridor. Residential uses located within or adjacent to the Fruitvale BART Station, Elmwood Avenue, Railroad Avenue, Pippin/Pearmain, 81st Avenue, Coliseum BART Station, and 98th Avenue Industrial Target Areas and along the East 14th Street corridor, and identified sensitive receptors located within or near the Fruitvale BART Station, 81st Avenue, and Coliseum BART Station Target Areas would have the greatest potential for being subject to construction noise impacts. Any sensitive receptors (which could include existing residential uses as well as those listed in Table 4.6-3) that are located adjacent to or near a proposed development site (within 50 feet) could be subject to temporary noise increases similar to those listed in Table 4.6-3. Also, existing office or commercial uses could be temporarily affected if noise peaks from construction activities (such as pile driving) are sufficiently high to interfere with speech or business activities. As future development is proposed, these noise impact criteria would need to be applied on a project-specific basis in order to evaluate the significance of any future project-related construction noise increases.

**TABLE 4.6-3
TYPICAL CONSTRUCTION NOISE LEVELS**

Equipment	Noise Level (dBA) @ 50 Feet	With Feasible Noise Control^a
<i>Earthmoving</i>		
Front Loader	79	75
Backhoe	85	75
Dozer	80	75
Tractor	80	75
Scraper	88	80
Grader	85	75
Paver	89	80
<i>Materials Handling</i>		
Concrete Mixer	85	75
Concrete Pump	82	75
Crane	83	75
<i>Stationary</i>		
Pump	76	75
Generator	78	75
Compressor	81	75
<i>Impact</i>		
Pile Driver	101	95
Jack Hammer	88	75
Rock Drill	98	80
Pneumatic Tools	86	80
<i>Other</i>		
Saw	78	75
Vibrator	76	75

^a Estimated levels obtainable by selecting quieter procedures or machines and implementing noise-control features requiring no major redesign or extreme cost.

SOURCE: U.S. Environmental Protection Agency, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, 1971

If more than one construction project were to occur at the same time in proximity to another project within the study area, these would be cumulative noise effects.

Operational Noise

Long-term operational noise increases could also result from future development projects within the Coliseum Redevelopment Area. While operational noise increases could result, it is anticipated that project-related noise would be similar to existing types and levels of noise. Project-related noise would primarily be associated with employee traffic, patron traffic, service/delivery vehicles, maintenance equipment (e.g., blowers or sweeping machines), or equipment operation related to specific industries. Commercial or industrial activities would generate noise from loading/unloading, parking cars, garbage trucks, refuse bins. Sources of noise associated with commercial or industrial development could include loading and unloading activities, parking cars, garbage trucks and refuse bins; other sources of noise could include refrigeration, air conditioning and heating units as well as compressors, transformers, and trash compactors. However, whether or not there would be such sources of noise would depend on the types of commercial or industrial uses ultimately developed. Similar to construction-related impacts, operational noise increases would likely occur within the target areas. The City would need to evaluate the potential significance of future operational noise impacts as specific development proposals are made. The potential for operational noise impacts would be greatest where existing residential uses or sensitive receptors are located adjacent to a proposed industrial development or where proposed residential uses or sensitive receptors would be located adjacent to an existing industrial development.

Traffic Noise

Implementation of the Redevelopment Plan would result in traffic increases and associated noise level increases along major roadways within the Coliseum Redevelopment Area. Existing and future (with and without the Redevelopment Plan) traffic noise levels along major roadways within the study area are presented in Table 4.6-4.

**TABLE 4.6-4
EXISTING AND FUTURE NOISE LEVELS
(Page 1 of 2)**

Roadway Segment	Noise Level (CNEL) at 50 Feet				
	Existing	Future (2010)- No Plan	Net Change	Future (2010)- With Plan	Net Change Due to Plan
Fruitvale Avenue					
-I-880 to San Leandro St. ^a	68.2	68.6	+0.4	69.3	+0.7
-West of I-880 ^a	67.6	69.0	+1.4	69.1	+0.1
San Leandro Street					
-South of Fruitvale Ave. ^a	66.0	66.0	+0.0	66.9	+0.9
-North of High St. ^a	66.5	67.0	+0.5	67.8	+0.8
-High St. to Seminary Ave. ^b	68.7	69.2	+0.5	69.7	+0.5
-Seminary Ave. to 66th Ave. ^a	67.5	69.2	+1.7	69.7	+0.5
-66th Ave. to Hegenberger Rd. ^a	68.2	68.2	+0.0	69.3	+1.1
-Hegenberger Rd. to 85th Ave. ^a	68.9	69.6	+0.7	69.3	-0.3
-85th Ave. to 98th Ave. ^a	67.6	69.8	+2.2	69.9	+0.1
-98th Ave. to 105th Ave. ^a	67.6	69.0	+1.4	69.3	+0.3
East 14th Street					
-South of Fruitvale Ave. ^a	68.2	68.4	+0.2	68.8	+0.4
-North of High St. ^b	72.1	70.1	-2.0	70.2	+0.1
-High St. to Seminary Ave. ^b	70.8	69.4	-1.4	69.9	+0.5
-Seminary Ave. to 66th Ave. ^a	68.6	69.8	+1.2	70.2	+0.0
-66th Ave. to Hegenberger Rd. ^a	69.3	70.0	+0.7	70.3	+0.3
-Hegenberger Rd. to 85th Ave. ^a	68.3	68.3	+0.0	68.6	+0.3
-85th Ave. to 98th Ave. ^a	68.3	68.4	+0.1	69.0	+0.6
-98th Ave. to 105th Ave. ^a	68.8	69.4	+0.6	69.8	+0.4
High Street					
-West of I-880 ^b	70.7	69.5	-1.2	70.3	+0.8
-I-880 to San Leandro St. ^b	68.8	67.6	-1.2	69.1	+1.5

**TABLE 4.6-4
EXISTING AND FUTURE NOISE LEVELS
(Page 2 of 2)**

Roadway Segment	Noise Level (CNEL) at 50 Feet				Net Change Due to Plan
	Existing	Future (2010)- No Plan	Net Change	Future (2010)- With Plan	
Hegenberger Road					
-Doolittle Dr. (SR 61) to Edgewater Dr. ^a	71.1	72.2	+1.1	72.3	+0.1
-Edgewater Dr. to I-880 ^b	73.3	72.2	-1.1	72.4	+0.2
-I-880 to San Leandro St. ^b	73.0	71.4	-1.6	71.6	+0.2
-San Leandro St. to E. 14th St. ^a	69.2	70.6	+1.4	70.8	+0.2
98th Avenue					
-West of I-880 ^a	67.9	71.3	+3.4	71.5	+0.2
-East of I-880 ^a	68.9	69.3	+0.4	69.7	+0.4
-Edes Ave. to San Leandro St. ^a	68.5	69.0	+0.5	69.2	+0.2
-San Leandro St. to E. 14th St. ^a	67.0	68.5	+1.5	68.7	+0.2
Doolittle Drive (SR 61)					
-South of Hegenberger Rd. ^b	71.2	71.9	+0.7	71.7	-0.2
-North of Hegenberger Rd. ^b	71.4	67.9	-3.5	68.0	+0.1

NOTE: Background noise levels due to freeway traffic, train operations, BART operations, non-traffic related activities (e.g., pedestrian activities, parking cars, etc.) are not reflected in these noise levels. Noise levels in this table are intended to indicate incremental noise changes due to future growth and implementation of the proposed plan. Since they do not include background noise levels, they do not necessarily reflect actual noise levels along these roadway segments. Noise modeling was conducted using the FHWA RD-77-108 model with California vehicle emission (CALVENO) factors.

^aAssumptions: 96% Autos, 2% Medium Trucks, 2% Heavy Trucks; hard site, 35 mph

^bAssumptions: 92% Autos, 3%¹ Medium Trucks, 5% Heavy Trucks; hard site, 35 mph

SOURCE: Orion Environmental Associates, 1995.

Based on noise modeling results presented in this table, future traffic increases (without the Redevelopment Plan) would result in noise increases of 3 dBA or less along the analyzed roadway segments within the study area. Based on the significance criteria outlined above, such increases would not be considered significant because they would not be noticeable. Implementation of the Redevelopment Plan would result in additional future noise increases along local roadways. Future noise levels would increase by less than 2 dBA due to Plan-related traffic, which would not be noticeable. When future background noise increases are considered with Redevelopment Plan-related noise increases, cumulative noise increases of approximately 2 dBA or less would occur on all analyzed roadway segments except 98th Avenue (west of I-880), which would be subject to a 3.6 dBA cumulative noise increase. Cumulative noise increases on all analyzed road segments would not exceed the 4-dBA significance criteria.

Noise Compatibility of Existing and Future Land Uses

While compatibility is determined based on the level of noise exposure, and actual exposure would depend on the proximity of the receptor to the source, noise measurements indicate that noise levels adjacent to some sections of the following roadways are considered generally unacceptable (exceeding 70 dBA CNEL) for residential uses or sensitive receptors:

- Fruitvale Avenue
- East 14th Street
- San Leandro Street
- Oakport Street
- Hegenberger Road
- Doolittle Drive (SR 61)
- 98th Avenue

Noise measurements also indicate that noise levels adjacent to some sections of the following roadways are considered conditionally acceptable (exceeding 60 dBA CNEL) for residential uses or sensitive receptors:

- East 12th Street
- 66th Avenue
- Edes Avenue
- 105th Avenue

Implementation of the Redevelopment Plan would result in additional retail commercial, industrial, and residential uses. Most new development would occur in the target areas while some would occur within the remainder area of the Coliseum Redevelopment Area. It is anticipated that more than half of the new residential uses would occur within the Fruitvale BART Station, Elmwood Avenue, Railroad Avenue and Pippin/Pearmain Target Areas, with the remaining residential uses anticipated to occur along the East 14th Street corridor. Within these areas, noise would be a concern for any new residential uses located adjacent to existing/future industrial uses, BART facilities, railroad tracks, I-880, and any of the major thoroughfares listed above (specifically Fruitvale Avenue, San Leandro Street, East 14th Street, East 12th Street, 98th Avenue, 105th Avenue, and Edes Avenue within the identified target areas). These noise sources would also be a concern for any new residential uses located along the East 14th Street corridor within the Coliseum Redevelopment Area.

There are existing noise compatibility concerns with residential uses that are currently subject to unacceptable noise levels due to traffic noise, and future noise increases (with and without the Redevelopment Plan) would exacerbate this condition. While future and project-related noise increases are not incrementally significant, they exacerbate noise compatibility problems in these areas. Therefore, the incremental project-related noise increases would be considered cumulatively significant in the existing residential areas that are currently subject to unacceptable noise levels.

In addition, recreationists using the eastern portion of the Martin Luther King, Jr. Regional Shoreline, (which extends along the western boundary of the Tidewater and East Bay MUD / Edgewater Sites Target Areas) could also be subject to noise impacts associated with future construction and operation due to implementation of the Redevelopment Plan. As noted in the discussion of the environmental setting above, the City's Noise Element identifies the Martin Luther King, Jr. Regional Shoreline's recreational uses as potentially susceptible to adverse noise impacts. The Noise Element notes that "some degree of quiet

will be desirable" for most activities in the Regional Shoreline. Future development within the East Bay MUD / Edgewater Sites Target Area would need to consider the potential for noise impacts on this recreational area.

4.6.4 Mitigation

Although the significance of most of the identified noise impacts cannot be defined until specific development proposals are made, implementation of the following measures as part of Redevelopment Plan implementation and/or specific development proposals should lessen impacts.

Construction-Related Noise

1. As future development proposals are made within the Coliseum Redevelopment Area, the potential for construction-related noise impacts on adjacent or nearby sensitive receptors should be evaluated. Mitigation measures would be required at that time as deemed necessary. Measures should include:
 - Utilizing the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of silencers, ducts, and engine enclosures) on construction equipment and trucks.
 - Limiting the operation of heavy equipment to the daytime working hours (7 a.m. to 7 p.m., Monday through Friday) to minimize potential disturbance of any nearby or adjacent residents.
 - Locating stationary noise sources as far from adjacent residences as possible, and use of hospital grade mufflers on all stationary noise sources, if necessary, or enclosure within temporary sheds.
 - Use hydraulically or electrically powered impact tools (e.g., jack hammers, pavement breakers, and rock drills) wherever possible to avoid noise associated with compressed air exhaust from pneumatically-powered tools.

It is anticipated construction noise impacts could be mitigated to a less-than-significant level.

Operational Noise

2. On a Plan basis, operational noise is considered to be less-than-significant. As future development proposals are made within the Coliseum Redevelopment Area, the potential for long-term operational noise impacts on adjacent or nearby sensitive receptors should be evaluated. Mitigation measures should be required at that time as deemed necessary. Measures to further reduce this less-than-significant effect could include providing adequate building setbacks or noise barriers to minimize potential noise impacts on adjacent uses.

On a plan-basis operational noise effects would remain less than significant.

Traffic Noise

3. To minimize the project's contribution to the cumulatively significant future traffic noise increases in residential areas subject to unacceptable traffic noise, policies of the proposed Redevelopment Plan should address this noise compatibility issue. If there are any planned road development projects in residential areas where noise levels are unacceptable, the road projects should include measures to reduce noise levels at residences. Alternatively, future traffic increases should be minimized on roadways passing through these residential areas by orienting future development access away from these neighborhoods.

Implementation of these measures would lessen cumulatively significant noise effects due to traffic to a less-than-significant level.

Noise Compatibility of Future Land Uses

4. As future residential development proposals (or proposals involving sensitive noise receptors) are made within the Coliseum Redevelopment Area, noise compatibility of

residential uses with identified freeway, roadway, railroad, and BART sources should be evaluated. Proposed uses should be reviewed for consistency with applicable City land use compatibility noise guidelines. Future development must comply with California Noise Insulation Standards (Title 24), if applicable.

5. Policies of the proposed Redevelopment Plan should address the need to minimize potential noise conflicts between existing/future residential and existing/future industrial uses. This could be accomplished by providing transitional land use designations between residential and industrial areas, or requiring noise attenuation measures (e.g., noise walls, buffer areas, etc.) as part of industrial development proposals.
6. The potential for construction and operational noise impacts on the Martin Luther King, Jr. Regional Shoreline's recreational uses should be evaluated as development proposals are made in the Tidewater and East Bay MUD / Edgewater Sites Target Areas. Development noise which would not be compatible with recreational uses should not be allowed.

Implementation of these measures would be anticipated to reduce noise compatibility effects to a less-than-significant level.

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4.7 HAZARDOUS MATERIALS

4.7.1 Environmental Setting

This section provides an overview of the potential presence of hazardous substances within the Coliseum Redevelopment Area. Hazardous substances are generally considered to be materials with certain chemical and physical properties that pose a substantial present or future hazard to human health or the environment when improperly handled, stored, disposed or otherwise managed; they are commonly used in commercial, agricultural, and industrial applications as well as to a limited extent in residential areas. If improperly handled, they can result in public health hazards through contamination of soils or groundwater or through airborne releases in vapors, fumes or dust. There is also the potential for accidental or unauthorized releases of hazardous materials that can pose a public health concern. In general, discarded or inherently waste-like hazardous substances are referred to as hazardous wastes.

If present within a redevelopment area, hazardous substances could characterize a site as a blighted area as defined by *Assembly Bill (AB) 1290*. The presence of hazardous substances could pose restrictions on the types of land use that would be appropriate for development. If soil or groundwater contamination has occurred at a site, hazardous substances in the soil or groundwater could pose health concerns to construction workers and the public during construction. They could also pose health concerns to future occupants of the property if left in place.

To provide an assessment of the potential presence of hazardous substances within the Coliseum Redevelopment Area, this section includes a general review of the hazardous materials regulatory framework and worker health and safety requirements; identification of known or suspected sites where contamination of soils or groundwater by hazardous substances may exist; a discussion of the types of existing businesses that generate hazardous wastes; and a discussion of the potential presence of hazardous building materials within the Coliseum Redevelopment Area. The information is not intended to provide detailed site specific information regarding contaminated sites or remediation efforts. Instead, the information serves as a basis for determining potential, program-level impacts associated

with implementing the proposed Redevelopment Plan within the Coliseum Redevelopment Area.

Hazardous Materials Regulation

Hazardous materials and hazardous wastes, collectively referred to as hazardous substances, are defined in Title 22 of the *California Code of Regulations*, Sections 66260 through 66261.10. As defined in Title 22 of the *California Code of Regulations*, hazardous substances are grouped into four general categories based on their properties. They can be classified as one or more of the following: toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damages materials), or reactive (causes explosions or generates toxic gases). Federal regulations regarding the classification of hazardous wastes are contained in Title 40 of the *Code of Federal Regulations*, Part 264. They are similar to the California regulations. However, the California regulations are generally more stringent.

Hazardous substances are extensively regulated by federal, state, regional, and local regulations, with the objective of protecting public health and the environment. In general, these regulations provide definitions of hazardous substances; establish reporting requirements; set guidelines for handling, storage, transport, remediation and disposal of hazardous wastes; and require health and safety provisions for both workers and the public. Regulatory agencies also maintain lists, or databases, of sites that are classified as hazardous waste generators or that store hazardous substances in underground storage tanks as well as sites where soil or groundwater quality may have been affected by hazardous substances.

The major agencies enforcing these regulations include: the U.S. Environmental Protection Agency (federal); the Department of Toxic Substances Control and the California Regional Water Quality Control Boards of the California Environmental Protection Agency (state); the Bay Area Air Quality Management District (regional); the Alameda County Environmental Health Services Agency, Department of Environmental Health (local); and the Oakland Fire Department (local). Appendix G presents a description of the major hazardous materials regulations and the agencies implementing them. Workplace safety regulations are enforced by the Federal Occupational Health and Safety Administration (federal) and the California

Occupational Health and Safety Administration (state); these regulations are also summarized in Appendix G.

Potential Sources of Hazardous Materials

Identified Hazardous Waste Sites

A computerized search of regulatory agency lists was conducted to identify sites within the Coliseum Redevelopment Area that are potentially contaminated with hazardous substances (NATEC, 1994). These lists include sites where contamination is either suspected or confirmed by the regulatory agencies. The agency lists reviewed to identify these sites are described in Appendix G and a summary of the number of sites identified within each database is identified in Table G-1 of that appendix.

In conducting the record search, all sites within the Coliseum Redevelopment Area were identified. The site locations are shown on Figure 4.7-1 (NATEC, 1994); the site name, address and database(s) it was identified in are summarized in Table G-2 in Appendix G. Identification of a site on a regulatory agency list does not necessarily indicate that contamination has occurred, only that the regulatory agencies have had reason to suspect that contamination has occurred. Because of this, regulatory agency files for sites within the 10 target areas of the Coliseum Redevelopment Area, where development is most likely to occur within the next 15 years, were reviewed to evaluate whether soil or groundwater contamination has occurred. Regulatory agency files were not reviewed for sites outside of the 10 target areas because development of these areas is not immediately planned, and any data obtained from the reviews would likely be outdated by the time that development were to occur. For any development outside of a target area, it would be necessary to perform an environmental Phase I assessment and possibly further investigations to evaluate the potential for hazardous substances within the area planned for development.

Sites identified on the regulatory lists represent only those sites which are suspected of being contaminated or have had cause for hazardous materials investigations, generally due to property transactions or site disturbance activities such as removal of an underground storage tank, a spill of hazardous substances or excavation for construction. Due to the history of

urbanization and use of hazardous substances in the Coliseum Redevelopment Area, it is likely that additional sites could exist within the target areas that have not yet been identified or reported to regulatory agencies. These sites may be identified through future property sales, construction activities or other site disturbances during redevelopment.

Agency files for the sites identified within the 10 target areas were reviewed to identify the types of hazardous substances present and to briefly identify the extent of any hazardous substances. The status of each site reviewed is summarized in Table G-3 in Appendix G and the results of the file reviews are summarized by target area below.

- 1) Fruitvale BART Station. There were seven sites identified within this target area. At six of the sites, soil and/or groundwater quality has been affected by releases from underground storage tanks; no agency files were identified for one site. The primary chemicals of concern in this target area are petroleum products although solvents, metals and cyanide were also identified in the groundwater at one site. Groundwater contamination may extend off-site at some of these locations, but this has not been evaluated through sampling.
- 2) Elmwood Avenue. There is one site identified within this target area. Much of this site has been remediated but two areas of the site still require remediation. An off-site source of chemicals to one area of the site is indicated. The primary chemicals of concern in this target area include petroleum products, solvents and polychlorinated biphenyls.
- 3) Tidewater Avenue. There are six sites identified within this target area. Five of the sites are undergoing site investigation because soil and/or groundwater quality has been affected by releases from underground storage tanks; files for one site were not available for review. The primary chemicals of concern in this target area are petroleum products. At one site, free product⁸ was previously identified on the groundwater. Off-site groundwater contamination has also been associated with one site.

⁸Petroleum products such as gasoline and diesel are immiscible (incapable of mixing) with water. Because they are generally lighter than water, they will float on top of the water surface as a separate layer when present in sufficient concentration.

4.7 Hazardous Materials

- 4) East Bay MUD / Edgewater Sites. There are six sites identified within this target area. Four of the sites are undergoing site investigation because soil and/or groundwater quality has been affected by releases from underground storage tanks; lead is present in the fill materials used at one site; and the files for one site were not available for review. The primary chemicals of concern in this target area are petroleum products although semivolatile organic compounds, polychlorinated biphenyls, metals and chlorobenzene have also been identified in the soil or groundwater. Off-site groundwater contamination is possible at one site, but it is not likely at the remaining underground storage tank sites. Lead was identified at high levels in soil at the Oakport Development site; a site remediation is planned to remove the soil containing elevated lead. Based on previous sampling, groundwater at this site is apparently not impacted by lead.
- 5) Railroad Avenue. This target area contains one site identified on the regulatory agency lists. Soil and groundwater quality at this site has been affected by releases from underground storage tanks. The primary chemicals of concern in this target area are petroleum products although solvents have also been identified in the groundwater. Off-site contamination has been identified, including free product identified on the groundwater in an off-site monitoring well.
- 6) Pippin/Pearmain. This target area contains 11 sites identified on the regulatory agency lists. Seven of the sites are undergoing site investigation because soil and/or groundwater quality has been affected by releases from underground storage tanks; two sites were plating facilities; files for one site were not available for review; and no agency files were identified for one site. The primary chemicals of concern in this target area are petroleum products although solvents have been identified in the groundwater at two sites. Dense product was also identified at one site, recovery of the product was intermittently conducted between 1991 and 1993. The potential for off-site contamination has not been evaluated at all of the sites undergoing investigation.

At Action Plating, the owner abandoned the site and the U.S. EPA conducted a removal action to remove plating wastes left on-site. Soil and groundwater contamination were not suspected at the site by U.S. EPA. At K&L Plating, the U.S. EPA has not conducted a preliminary assessment and soil and groundwater quality has not been assessed.

7) 81st Avenue. There are 23 sites within this target area that were identified on the agency lists. Sixteen of the sites are undergoing site investigation because soil and/or groundwater quality has been affected by releases from underground storage tanks; an underground storage tank is suspected at one site; two sites report air emissions of chemicals over the reporting requirement of Title III of the *Superfund Amendments and Reauthorization Act of 1986 (SARA)*; no agency files were identified for four sites; and files for one site were not available for review. The primary chemicals of concern in this target area are petroleum products although semivolatile organic compounds, chlorobenzene, solvents and lead have also been identified in the soil and/or groundwater. There is the potential for off-site groundwater contamination at several of the sites.

Two of the sites report air emissions of chemicals over the reporting requirement of Title III of the *Superfund Amendments and Reauthorization Act of 1986 (SARA)*. In 1992 Caspers Industries reported emissions of 329 pounds per year of copper and American Brass and Foundry reported emissions of 617,380 pounds per year of 1,1,1-trichloroethane.

8) Coliseum BART Station. This target area contains four sites that were identified on the regulatory agency lists. One of the sites is undergoing site investigation because soil and/or groundwater quality has been affected by releases from underground storage tanks; one site has soil contamination resulting from improper storage of waste oil; one site has soil and groundwater contamination resulting from site usage as a plating facility; and agency files were not available for one site. Soil contamination by petroleum products, solvents, metals and cyanide is indicated within this target area and ground water contamination by solvents and metals has been identified. There is the potential for off-site contamination of the groundwater at some of the sites.

9) 98th Avenue Industrial. There were two sites identified within this target area that are undergoing a site investigation. At both of these sites, soil and/or groundwater quality has been affected by releases from underground storage tanks. The primary chemicals of concern in this target area are petroleum products. Groundwater contamination may extend off-site at either of these locations, but this has not been evaluated through sampling.

10) Airport Gateway. There were five sites identified within this target area on the agency lists. At four of the sites, soil and/or groundwater quality has been affected by releases from underground storage tanks; agency files for one site were not available for review. The primary chemicals of concern in this target area are petroleum products and free product was observed on the groundwater at one site. Groundwater contamination may extend off-site at one location, but this has not been evaluated through sampling.

Other Potential Hazardous Waste Sites

In addition to the identified known or suspected sites, there is the potential for hazardous substances to be present within the Coliseum Redevelopment Area due to existing or historical land uses. Within the study area, land uses of concern are generally associated with industrial and some commercial land uses, with chemical handling/storage practices being a common source of contamination. Current chemical handling/storage practices are well regulated and pose less environmental risk than historical practices. Historical uses of hazardous substances were not subject to the current level of regulation, and previous handling, storage and management practices may have resulted in the contamination of soils or groundwater that has been previously unidentified. Use of imported, potentially contaminated fill for grading and construction is also a likely source of hazardous wastes/substances. The discussion below focuses on the most common types of hazardous substances that likely occur within the Coliseum Redevelopment Area; agricultural hazards, such as the presence of pesticides, would generally not be expected except for the one area where agriculture, which is located close to the Oakland Airport, has historically occurred and continues to occur.

Leaking underground storage tanks are a common source of soil and groundwater contamination. Underground storage tanks have been used in a variety of industries for storage of gasoline, diesel, waste oils and other chemicals. Prior to regulation in the 1980s, underground tanks were typically not subject to monitoring or provided with secondary containment. If a tank leaked, the contents could migrate to the soil, and if undetected, could then also contaminate the groundwater. Contaminated groundwater plumes can migrate large distances and affect adjacent land uses.

Sites with currently permitted underground storage tanks were identified during the computerized database search; all of the sites identified within the Coliseum Redevelopment Area are identified in Table G-4 in Appendix G. Current requirements for underground storage tanks include tightness testing on a regular basis to monitor for leakage which reduces the potential for undetected leakage. However, these sites are potential sources of hazardous substances to the soil and/or groundwater because of incidental leakage or spillage that may have gone undetected. Any soil or groundwater contamination at a site with a permitted underground storage tank would typically be identified when agency-required samples are collected during tank repairs or replacement.

Unpermitted underground storage tanks may be present at sites where the use of the tank was discontinued before monitoring requirements were implemented in the 1980s. Soil and/or groundwater contamination could also occur at these sites, however there is no agency tracking of these sites. It would be necessary to perform a detailed review of the site history to identify whether there is an unpermitted underground storage tank at a specific site.

Other types of hazardous substances commonly used in industrial and commercial areas include chemicals such as solvents, degreasers, and industrial process chemicals. These can be toxic to human health and the environment even at low concentrations due to their persistence and bioaccumulative properties. Storage and handling of chemicals over extended periods increases the likelihood of spillage or accidents, which can build up over time without proper clean-up and management procedures. Prior to regulation, industrial discharges (whether intentional, inadvertent or accidental) were common sources of water and soil pollutants.

Sites within the Coliseum Redevelopment Area that are permitted to generate hazardous wastes under the *Resource Conservation and Recovery Act* implemented by the U.S. EPA are identified in Table G-4 in Appendix G. Identification of a site as a hazardous waste generator does not indicate that contamination has occurred, only that there is the potential for hazardous substances to be present. The potential for contamination would depend upon numerous factors, such as the type of business, type(s) and quantities of hazardous substances, handling and management practices, control and spill containment systems, adequacy of accident prevention and safety programs, training programs and emergency response plans,

adjacent land uses, etc. When handled properly and when used in compliance with permitting and other regulatory requirements, hazardous materials do not necessarily pose a human health concern or a threat to the environment. Nevertheless, the nature of hazardous materials by definition imply that there is an inherent risk to human health or the environment. The potential for accidents, earthquakes, unauthorized releases or other mishaps beyond the control of normal operating procedures exists, albeit within acceptable standards, with associated potential for public health and environmental effects.

Due to the range of industries within the Coliseum Redevelopment Area, it is difficult to discuss hazards that would occur by industry type. Toxic hazards from any industry typically include mechanical accidents and hazards relating to chemical use to the employees during the manufacturing processes, or inadvertent or accidental spillage during transport and handling, which could also potentially release toxic chemicals to the soil, groundwater, or nearby surface waters. Other types of toxic hazards could include inadvertent releases of airborne substances, including toxic gases, fumes or dust, which could expose workers or the community to health hazards. In addition to toxic hazards, public health and safety concerns relate to potentials for fire and explosive hazards and transportation-related accidents (Harte, *et al*, 1991; and EOH&S, 1983).

Hazardous Building Materials

Some building materials commonly used in older buildings could present a public health risk if disturbed during an accident or during demolition or renovation of an existing building. These materials include asbestos, electrical equipment such as transformers and fluorescent light ballasts that contain polychlorinated biphenyls (PCBs), fluorescent lights containing mercury vapors and lead based paints. Asbestos and lead-based paint may also present a health risk to existing building occupants if they are in a deteriorated condition. If removed during demolition or renovation of a building, these materials would also require special disposal procedures.

During the past 50 years, asbestos has been used as a common building material, including use as insulation material, shingles and siding, roofing felt, floor tiles, brake linings, and acoustical ceiling material (Allegrì, 1986). Asbestos is a known carcinogen, and the primary

pathway of exposure is through inhalation; if asbestos is present in "friable" (crumbly) form, then asbestos fibers can be inhaled. Depending on the conditions of the building materials, there is a potential for airborne asbestos fibers to be present in many of the existing structures in the Coliseum Redevelopment Area.

PCBs were commonly manufactured and used in the United States between 1929 and 1977 for uses such as electrical transformers and capacitors and fluorescent light ballasts (Allegri, 1986). PCBs are a highly toxic group of substances that remain persistent in the environment, accumulate in biological systems, interfere with reproduction and act as an immuno-suppressant. Under the *Toxic Substances Control Act*, Congress specifically regulated the use of PCBs. The manufacture, processing, and commercial distribution or use of any PCB was prohibited in January 1978, except when contained in a totally enclosed manner. As of January 1979, the manufacture of PCBs was banned, while the distribution of PCBs in commerce was banned in July 1979. However, utilities and other owners of PCB-filled electric transformers and capacitors were allowed to maintain the equipment for its working life, if it did not leak. The EPA Spill Cleanup Policy dictates that spills of materials containing PCBs at concentrations of 50 parts per million (ppm) or greater be cleaned up within 48 hours after the spill.

In response to these regulations, PG&E has replaced all capacitors throughout the City of Oakland. In the downtown area, all network transformers were replaced in 1985. Other transformers are replaced if they fail or leak. If the transformer has leaked, then the oil is tested to determine the level of PCB and the subsequent cleanup requirements. Transformers installed after 1983 contain a name plate that specifies the PCB content level, which is less than one ppm. If the public wants to have a transformer tested, there is a charge for the test, which varies on the size of the shutdown and the size of the transformer. If the transformer exceeds a PCB concentration of 50 ppm, the fee is refunded (Allegri, 1986).

Most fluorescent light ballasts manufactured prior to 1978 contain approximately 0.5 ounces of PCBs in a small capacitor (U.S. EPA, 1992). The quantity can be up to two ounces. In 1978, the U.S. EPA estimated that there were approximately 850 million of these capacitors in use in the United States (California EPA, 1992). Disposal of more than one pound of PCBs, or approximately 16 capacitors, to a landfill would require notification of the U.S.

EPA under the *Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)*. Ballasts manufactured after January 1, 1978 do not contain PCBs and should be labelled as such on the ballast.

Spent fluorescent light tubes commonly contain mercury vapors at levels high enough to be considered a hazardous waste under California law; depending on the levels of mercury present, the light tubes may also be classified as hazardous under federal law (California EPA, 1992). When disposed of at a municipal landfill, the mercury can leach into the soil and groundwater. Existing regulations allow a generator to dispose of up to 25 fluorescent light tubes per day at a municipal landfill if the light tubes are not considered hazardous under federal law. Disposal as a hazardous waste would be required if a larger quantity of lights is generated during replacement of existing lights or during a building demolition.

Lead-based paint was commonly used prior to 1960 and these paints are present within the City of Oakland. Lead is toxic to humans, particularly young children, and can cause a range of human health effects depending on the level of exposure. When adhered to the surface of the material they are painted to, lead-based paints pose little health risk. Where the paint is delaminated or chipping, the paint can cause a potential threat to the health of young children or other building occupants who may ingest the paint. Lead dusts could also present public health risks during demolition or renovation of a structure with lead-based paint. Lead-based paint that has separated from a structure may also contaminate nearby soil.

4.7.2 Significance Criteria

The public health impacts would be considered significant, based on the *CEQA Guidelines*, if they "create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the affected area." Impacts would also be considered significant if it "would interfere with emergency response plans or emergency evacuation plans."

Definition, identification, and determination of threshold levels of hazardous materials are provided in the *Code of Federal Regulations* (40 CFR) and in the *California Code of Regulations*, Titles 22 and 26 (22 CCR and 26 CCR). Hazardous material means a substance

or combination of substances which because of its quantity, concentration or physical, chemical or infectious characteristics may pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed (Harte, 1991). Determination of "substantial" hazard or "significant" levels of hazardous materials is performed on a case-by-case basis, although generally there are regulatory guidelines for determining acceptable levels and/or public health risks associated with exposure to hazardous materials.

4.7.3 Impacts

The proposed Coliseum Redevelopment Area Redevelopment Plan would stimulate economic activity and encourage commercial, industrial and residential development in the target areas. By the year 2010, the proposed Redevelopment Plan is expected to result in a net gain of 700 housing units, 960,000 s. ft. of retail, 622,500 s. ft. of office and 557,500 s. ft. of industrial space. With proper planning, the redevelopment actions of the Redevelopment Plan would not result in any change in the public health impacts associated with hazardous substances, although future development or expansion of existing businesses could increase the potential for the use of hazardous substances, depending on the specific location and nature of the development or expansion. Greater use of hazardous substances is generally associated with increased threats to public health or to the environment because there may be an increased potential for an accidental spill or unauthorized release of hazardous substances. However, potential rezoning and improved separation of residential and industrial land uses as proposed as part of the Redevelopment Plan would reduce the potential for community exposure to hazardous substances and would be a long term beneficial impact of the redevelopment plan.

During construction in the Coliseum Redevelopment Area, impacts could result from demolition or renovation activities, which could expose workers or the community to hazardous building materials, or from excavating activities, which may result in short-term exposure of workers or the community to hazardous materials in contaminated soils or groundwater. However, development may result in long-term reduction of hazardous waste due to remediation and abatement activities, performed as part of implementation of the Redevelopment Plan during the construction phase of project development.

Methodology

Potential impacts due to the operation of businesses handling hazardous substances are evaluated as well as impacts related to the potential for encountering hazardous substances during activities related to construction. Because the specific types and locations of future economic activity associated with the proposed project have not been identified, the analysis of operational impacts is based on a general approach or typical scenario for the types of businesses and industries located within the Coliseum Redevelopment Area. Impacts related to encountering hazardous substances in the target areas during construction activities were identified based on the types of hazardous waste sites identified within the target areas. The potential for the presence of hazardous substances at a specific location is also related to the past and present land uses at a site and the management practices for handling hazardous substances, if any, at that site. Because of this, hazardous substances may also be encountered at previously unidentified sites. Public health and environmental impacts are based on the type and quantity of hazardous substances present and the potential for exposure to people or the environment.

Operational Impacts

There are numerous businesses and industries throughout the Coliseum Redevelopment Area that currently process, use or generate hazardous substances. The proposed development of the Coliseum Redevelopment Area would encourage growth and expansion of existing businesses, and if these businesses manufacture or generate hazardous substances, there is the possibility of increased production of hazardous materials or hazardous wastes. Any increase in quantities of hazardous substances could increase the potential for exposure to workers, the public and the environment.

When handled properly and when used in compliance with permitting and other regulatory requirements, hazardous substances do not necessarily pose a human health concern or a threat to the environment. It can be assumed that existing and future generators of hazardous wastes or materials would be subject to the same regulations as are currently in force, at a minimum. In addition, hazardous waste generators are being required to consider source reduction as an option to off-site treatment or disposal of hazardous wastes in accordance

with the *Hazardous Waste Source Reduction and Management Review Act of 1989*. This would reduce the quantity of hazardous materials or wastes generated at a specific site. Although the risk of upset can never be completely eliminated, any future production or generation of hazardous materials would not be expected to create a public health or environmental hazard if adequate safety precautions are employed. Thus, this impact would be considered less than significant.

With the increased numbers of businesses that handle, store or transport hazardous substances, there would be an increased potential for accidents or spills of hazardous materials. An accident or spill of hazardous materials could expose workers, the public, and the environment to health and safety risks. However, it is difficult to predict the extent of growth, if any, of individual businesses, and whether or not the growth or expansion would affect the status of hazardous substance handling. At a minimum, the status quo would be expected to occur (i.e., no loss in existing businesses), and the risk of accidents or spillage would be unchanged from the existing conditions. If an industry were to increase handling or storage of hazardous substances, it would be expected that newer machinery or equipment (which may qualify for tax credits) could be acquired to accommodate the increased volumes of materials. Newer types of equipment or newer facilities generally have more and improved safety features due to recent regulations and growing awareness of worker health and safety requirements. Any improvements in safety features would likely offset any increases in accident or spill potential due to development of the Coliseum Redevelopment Area. In addition, the increasingly stringent regulatory environment with regard to hazardous substances and public health and safety provides a margin of safety in minimizing the potential for accidents and spills. Thus, on a plan-level evaluation, this impact would be considered less than significant, although individual expansion projects should be evaluated for site-specific impacts which could warrant specific mitigation measures.

Construction Impacts

Demolition and Renovation

Demolition or renovation of existing structures or building materials associated with development in the Coliseum Redevelopment Area could result in exposure to hazardous

building materials, such as asbestos, lead, mercury or PCBs, with associated public health concerns. The extent of any demolition or renovation activity within the Coliseum Redevelopment Area is unknown at this time and would depend upon specific development or expansion projects that may occur. It is also unknown how extensively hazardous building materials occur within the Coliseum Redevelopment Area. However, it is assumed that the proposed development would increase the potential for demolition and renovation activities within the Coliseum Redevelopment Area. If demolition or renovation activities were to occur, it is likely that many of the structures to be demolished or renovated were constructed during the period when asbestos, lead and PCBs were used extensively in building materials. Fluorescent lights containing mercury vapors are still commonly used in many buildings.

If a building contains friable (crumbly) or non-friable asbestos, there is a potential for release of airborne asbestos fibers when the structures are demolished, moved, or altered, unless proper asbestos abatement precautions are taken. Such a release could expose the public and construction workers to airborne asbestos fibers. Similarly, if lead-based paint is present and has delaminated or chipped from the surfaces of the building materials, there is the potential for the release of airborne lead particles unless proper lead abatement procedures are followed. If PCBs are present in the building to be demolished, any leakage could potentially expose workers to unacceptable levels of PCBs (greater than 5 parts per million, based on 22 CCR). Removal of fluorescent light tubes could result in exposure to mercury vapors if the lights are broken.

Structures with asbestos-containing materials or lead-containing materials require abatement to prevent public exposure to asbestos fibers or lead particles. All structures designated for renovation or demolition are required to be inspected by a qualified inspector. If any friable asbestos-containing materials or lead-containing substances are identified, adequate abatement practices such as containment and/or removal must be implemented prior to renovation or demolition. In addition, proper removal and disposal procedures is required be followed for any PCB containing equipment and fluorescent light tubes.

Because the extent of demolition or renovation that would occur due to implementation of the Redevelopment Plan is unknown, and the location and quantity of hazardous building materials within the Coliseum Redevelopment Area is also unknown, the specific potential

for worker and public exposure to hazardous building materials as a result of redevelopment cannot be evaluated at this time. Potential exposure to hazardous materials must be evaluated on a case-by-case basis as individual development projects arise. Site specific public health effects due to exposure to hazardous building materials during demolition and renovation activities in the study area, could potentially result in significant impacts if proper clean up and disposal procedures are not followed.

Soil and Groundwater Contamination

Construction activities associated with development of the Coliseum Redevelopment Area could increase the likelihood of encountering contaminated soil or groundwater, which could potentially expose workers and the community to hazardous substances. The specific location of any construction activity due to implementation of the Redevelopment Plan within the Coliseum Redevelopment Area is currently unknown and would depend upon specific development or expansion projects that may occur. The proposed Plan would increase the potential for construction activity within the Coliseum Redevelopment Area. As discussed above, the long-term reduction of hazardous waste due to legally-required remediation activities performed as part of redevelopment during the construction phase of a specific project would be expected.

Based on the nature and extent of identified hazardous waste sites as well as historical and current land uses within the Coliseum Redevelopment Area, there is the potential to encounter hazardous substances in subsurface materials during any excavation and grading activities. Construction activities at or near an identified hazardous waste site that has not yet been completely remediated would have a likelihood of encountering hazardous substances. At sites that have been remediated, regulatory agencies may have allowed residual contamination to be left in place or may have approved health-based clean-up levels that are based on current land use. Residual contamination after clean up would typically be higher for an existing industrial site than for a residential site. If hazardous substances have been left in place at a site, this may restrict the type of development that could occur; residential uses may not be permitted at all of these sites. Also, the hazardous substances may not pose a threat to human health or the environment if left in place but could pose a threat if contaminated materials become airborne or otherwise released during construction activities.

The contaminated material may also require special handling and disposal requirements if removed from the site.

At sites where hazardous substances were previously stored or used, there would be a potential for encountering previously undetected releases. At locations where existing businesses handle or store hazardous substances, there may be potential for encountering hazardous materials, depending on current and past management practices. However it would be unlikely that extensive excavation would be required for renovation at existing businesses. At some sites, additional efforts such as removal of underground storage tanks may be required to remove potential sources of hazardous substances prior to development with the net effect of reducing potential impacts from hazardous substances.

If hazardous substances are encountered during redevelopment, the need for site investigations would be determined on a case-by-case basis by the appropriate regulatory agency. The site investigations would then identify the nature and extent of contamination and whether or not the contaminants occur at levels considered hazardous or "significant." If threshold levels are exceeded, remediation would be required. During the site investigation, there would be potential for exposure of workers and the community to hazardous substances, typically through inhalation of vapors, fumes or contaminated dust; possibly through dermal contact with contaminated materials; and possibly through direct or indirect ingestion.

At sites where there has been a release of materials from an underground storage tank or associated piping, a site investigation would be required in accordance with the *Leaking Underground Fuel Tank Field Manual* (Leaking Underground Fuel Tank Task Force, October 1989) and the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Storage Tank Sites* (San Francisco Bay Region of the Regional Water Quality Control Board, August 10, 1990). In accordance with these guidelines a soil and/or groundwater investigation would be required at sites where there has been a confirmed release from an underground storage tank or associated piping. The Regional Water Quality Control Board has assigned oversight authority for these cases to the Alameda County Health Care Services Agency, Department of Environmental Health.

If abandoned or no longer used underground storage tanks are identified at a site proposed for development, tank closure would be conducted in accordance with the Regional Water Quality Control Board and local City and County regulations. Reports of tank closure shall be submitted to the Alameda County Health Care Services Agency, Department of Environmental Health; the Regional Water Quality Control Board; and the Oakland Fire Department.

At other sites, the Department of Toxic Substances Control would require a Preliminary Endangerment Assessment as part of the site mitigation process, "to determine whether current or past waste management practices have resulted in the release or threatened release of hazardous substances which pose a threat to public health or the environment" (California EPA 1994). The Preliminary Endangerment Assessment was designed as a standard approach for evaluating sites contaminated or potentially contaminated with hazardous substances to determine if a removal or remedial action is required to protect public health and the environment. It is the initial step in the overall site mitigation process to abate health or environmental threats posed by a site where hazardous substances have been released or have a significant potential to have been released.

The Department of Toxic Substances Control provides oversight for the Preliminary Endangerment Assessment process, including scheduling and fee requirements. The Preliminary Endangerment Assessment process consists of an initial site evaluation and preparation of a report, followed by an evaluation and approval of the report by the Department of Toxic Substances Control. Depending on the results of the Preliminary Endangerment Assessment, a Remedial Investigation / Feasibility Study (RI/FS) and a Remedial Action Plan (RAP) may eventually be needed for the site clean up.

The Preliminary Endangerment Assessment report should include the following information: a site description and site history, including a description of past and current site activities and a description of handling procedures for hazardous substances associated with the site business activities; a description of the apparent problem such as documentation of spills or releases, and the results of any sampling and analysis that has been completed to characterize these; a description of potential pathways for exposure to chemicals (such as soil, water and air); a description of any sampling and analysis performed to evaluate the extent of chemicals

identified in the soil and/or groundwater; an assessment of the threat to the public health and the environment; an identification of possible remediation strategies; and conclusions and recommendations. Specific details to be included in the report are described in the *Preliminary Endangerment Assessment Guidance Manual* (Department of Toxic Substances Control, January 1994).

As part of site investigation efforts, regulatory agencies would require a site safety plan to ensure safety of workers and the community. The plan would include identification of contaminants, potential hazards, personal protection clothing and devices, and emergency response procedures. If soils containing hazardous substances are remediated, the Bay Area Air Quality Management District may impose specific requirements to protect ambient air quality from dust, lead, hydrocarbon vapors or other airborne contaminants.

Construction activities in utility alignments or public right-of ways may also encounter hazardous substances near a site where contamination extends off-site. The contamination could be encountered in soil that is excavated or in groundwater during dewatering activities. Dewatering could also draw in contaminated groundwater from nearby sites. The presence of hazardous substances would not necessarily require a site investigation, but health and safety measures to protect the workers and the public and special handling procedures for the materials produced during construction would be required.

Development within the Coliseum Redevelopment Area would provide incentive for increased construction activities, of which some construction would be expected to be associated with upgrading or expanding existing businesses. Reconstruction would most likely occur on already graded land, and excavation activities would likely be limited in extent. Nevertheless, public health impacts associated with exposure to site-specific contaminated soil and groundwater during development within the Coliseum Redevelopment Area may occur and could result in a significant effect, if proper remediation procedures were not implemented.

Remediation

If hazardous substances are encountered during construction activities, either in subsurface soils or groundwater, the contamination must be characterized before appropriate remediation

measures can be designed to mitigate potential impacts to construction workers, project employees or residents, the community or the environment. Agencies may require remediation efforts to clean-up, dispose, treat, or remove from public exposure the identified contaminant. Remediation efforts could expose workers and the public to hazardous substances, primarily through inhalation of vapors, fumes or contaminated dusts which could be on-site or blown off-site to the public or the environment; through dermal contact with materials that are being excavated or as they become airborne and are deposited on surrounding soil and structures; or through direct or indirect ingestion. Agencies would require a site safety plan to ensure the safety of the workers and the community.

In addition, if site remediation is required due to redevelopment of the Coliseum Redevelopment Area, the City would require compliance with *Assembly Bill 3193 (Polanco Bill)*, effective January 1, 1991. This bill modified the *Health and Safety Code* to add requirements applicable to site clean up actions carried out by redevelopment agencies. In accordance with the *Polanco Bill*, redevelopment agencies may conduct site clean-up actions with written approval from the Regional Water Quality Control Board, and if determined necessary, complete a Preliminary Endangerment Assessment as described above. If the clean-up plan for a site is submitted to the Department of Toxic Substances Control or the Regional Water Quality Control Board, and the clean up is performed to the satisfaction of the responsible agency, redevelopment agencies can receive a liability waiver under this legislation (California EPA, 1991).

Soil remediation methods could include encapsulation in place, excavation and on-site treatment, excavation and off-site treatment and/or disposal, or treatment without excavation. Landfill space for hazardous waste is limited. The *Resource Conservation and Recovery Act, Hazardous and Solid Waste Amendments of 1984* prohibit the land disposal of untreated wastes as of May 1990. The *California Hazardous Waste Management Act of 1986* requires that hazardous wastes must be treated to adopted standards for disposal within the state.

Remediation alternatives for contaminated groundwater could include extraction and on-site treatment or extraction and off-site treatment and disposal. Discharge of treated groundwater directly to the San Francisco Bay would require a permit from the Regional Water Quality Control Board. If extracted groundwater were to be discharged to public sewers, approval

must be obtained from the East Bay Municipal Utilities District and the Oakland Department of Public Works.

Excavation and dewatering of contaminated areas could directly or indirectly expose workers, the public, or the environment to potential health hazards. Routes (pathways) of exposure would be primarily through inhalation of vapors, fumes or contaminated dusts which could be on-site or blown off-site to the public or the environment; through dermal contact with materials that are being excavated or as they become airborne and are deposited on surrounding soil and structures; or through direct or indirect ingestion. In previously developed sites, such impacts occur primarily when the site is disturbed and soils, soil gases or groundwater contaminated with hazardous substances are exposed.

Although remediation efforts are currently underway at many identified known or suspected hazardous waste sites in the Coliseum Redevelopment Area, the extent of additional remediation that would be required due to development in the study area cannot be determined at this time. These efforts would depend upon specific development and expansion projects that may occur, whether construction activities are required, and whether hazardous materials encountered during that process require remediation. Thus, it is premature to determine the significance of potential impacts of individual development projects associated with development within the Coliseum Redevelopment Area. Due to the regulatory framework for site remediation, on a plan-level of evaluation, the impacts associated with remediation would be considered less than significant, and site-specific impacts would need to be determined for individual development projects when, and if, they were to occur.

4.7.4 Mitigation

The following measures are identified as program-level guidelines to reduce potentially significant hazardous materials impacts and to further reduce less-than-significant plan-level impacts.

1. The *Alameda County Hazardous Waste Management Plan* contains goals, objectives and implementation guidelines for hazardous waste reduction, hazardous waste facility siting,

public education and involvement, and program coordination with regulatory requirements. Prior to introduction of new business to the Coliseum Redevelopment Area, the City should review design plans for each proposed new business to ensure that the approved goals, objectives, and guidelines in the *Hazardous Waste Management Plan* are satisfied by the project. Documentation of that review should be added to the administrative record.

2. All storm water runoff (and runoff from fire suppression activities) that would come from hazardous substance handling areas or enters hazardous substance handling areas should be collected and tested prior to discharge. Sumps should be built to contain any runoff collected; these would also contain any spills and mixtures of runoff and spills. Sumps could be used to hold runoff until it could be treated and either discharged to the sewer or disposed of as hazardous waste.
3. All new hazardous material storage and handling areas should be situated on sealed, reinforced concrete surfaces (inside and outside) to minimize the possibility of environmental contamination in the event of an accidental spill. Areas where hazardous liquids are handled should be enclosed by walls or berms. A roof should also cover all loading, unloading, and handling areas to minimize any rain or moisture coming into contact with hazardous substances. This reduces the risk of rain associated accidents (slips) and reduces the amount of storm water that needs to be collected and tested prior to discharge. Prior to approval of individual new projects, the Oakland Fire Department should examine design plans for hazardous substance storage areas during its Fire Code / Building Plan review to ensure compliance with this provision. Documentation of this review shall be added to the administrative record.
4. The City of Oakland should encourage proper handling of hazardous materials by new businesses in the Coliseum Redevelopment Area. In compliance with State law (SB 14), new businesses that handle enough hazardous materials to generate wastes in reportable quantities (12,000 kilograms per year of hazardous waste or 12 kilograms per year of extremely hazardous waste) shall be required to have approved Source Reduction Evaluation and Review Plans on file. Qualifying new industries should prepare such plans and file them with the Alameda County Department of Environmental Health by

September 1 following start up of business operations. Each September, the City should contact the Department of Environmental Health to confirm that new businesses have filed their source reduction plans, if applicable. (While designed to reduce generation of hazardous wastes, this requirement would also promote recycling, reduce the amounts of hazardous substances handled and minimize the cumulative waste disposal problem.) Documentation of the annual review should be added to the administrative record.

5. The Oakland Fire Department Fire Prevention Bureau issues permits to businesses for handling hazardous materials, and requires businesses to prepare Hazardous Materials Management Plans (HMMPS or Business Plans) that detail hazardous substance inventories, site layouts, training and monitoring procedures, and emergency response plans, all in compliance with State law. Each September, the City should contact the Fire Department to confirm that permitted new businesses in the Coliseum Redevelopment Area have prepared and filed Hazardous Materials Management Plans as directed. Documentation to that effect should be added to the administrative record.

6. The Alameda County Department of Environmental Health implements its Risk Management and Prevention Program by requiring businesses that handle acutely hazardous materials to prepare a written Risk Management and Prevention Plan (RMMP) and file it with the County. Each September the City should contact the Alameda County Department of Environmental Health to confirm that new businesses in the program area that have been directed to prepare a Risk Management and Prevention Plan have done so. Documentation to that effect should be added to the administrative record.

7. The Alameda County Department of Environmental Health enforces proper handling and disposal of hazardous wastes according to Federal, State and local laws and regulations. Once per year, the City should contact the County to check that new hazardous waste generators in the Coliseum Redevelopment Area have been permitted and that monitoring records for hazardous waste storage areas are in order. Documentation to that effect should be added to the administrative record.

8. All structures designated to have building materials removed during renovation or demolition should be inspected by a qualified inspector. If any friable (crumbly)

4.7 Hazardous Materials

asbestos-containing materials or lead-containing materials are identified, adequate asbestos or lead abatement practices such as containment and/or removal shall be implemented prior to demolition or renovation. Any PCB containing equipment or fluorescent lights containing mercury vapors should also be removed and properly disposed of.

9. Prior to development of a potentially contaminated site, a complete Phase I environmental assessment should be performed to evaluate the potential existence of sources of contamination such as underground storage tanks as well as the potential for contamination of the site or sites in the vicinity by hazardous substances.
10. Detailed site investigations to investigate the potential presence of hazardous substances should be performed on any proposed development site where hazardous substances are suspected. The site investigation should include the collection of soil and groundwater samples for appropriate laboratory analyses, depending on the historical uses at the site. Sampling would extend to depths expected for excavation at a minimum. Reports of all sampling and analyses should be provided to the Alameda County Health Care Services Agency, Department of Environmental Health, the Regional Water Quality Control Board, or the Department of Toxic Substances Control, as appropriate. If further investigation or remediation were necessary, it should be conducted in accordance with agency guidance.
11. If levels of hazardous substances are found to pose a threat to human health or the environment, a Site Mitigation Plan should be prepared to address the site remediation and submitted to the Regional Water Quality Control Board and the Alameda County of Department of Environmental Health for or the Department of Toxic Substances Control approval. If groundwater contamination is involved, permits will be required from the Regional Water Quality Control Board for discharge of the treated waters to the Bay, or from the East Bay Municipal Utilities District and the Oakland Department of Public Works for extracted waters to be discharged to the public sewers. If soils containing hazardous materials are excavated, the Bay Area Air Quality Management District may impose specific requirements to protect ambient air quality from dust or other airborne

contaminants. The Site Mitigation Plan and reports should be added to the administrative record.

12. Hazards to construction workers and the general public during demolition and construction can be mitigated by the preparation and implementation of site-specific health and safety plans, as recommended by the Occupational Safety and Health Administration. The health and safety plans would need to be prepared by a Certified Industrial Hygienist and meet the requirements of federal, state and local environmental and worker safety laws. Specific information to be provided in the plans includes identification of contaminants, potential hazards, material handling procedures, dust suppression methods, personal protection clothing and devices, controlled access to the site, health and safety training requirements, monitoring equipment to be used during construction to verify health and safety of the workers and the public, measures to protect public health and safety, and emergency response procedures.

These measures are identified as plan-level guidelines to reduce public health impacts associated with exposure to hazardous materials. Implementation of these measures on a project-specific basis would generally mitigate public health impacts to a less-than-significant level. However, construction and remediation activities in the study area could contribute to cumulative impacts on a regional basis due to off-site disposal of hazardous waste, and these regional cumulative effects would remain significant after mitigation.

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4.8 GEOLOGY AND SEISMICITY

4.8.1 Environmental Setting

Topography

The area of the proposed Coliseum Redevelopment plan is within the San Francisco Bay Plain, at elevations ranging from about 59 feet above mean sea level at San Leandro City Hall, just south of the southeastern boundary of the Coliseum Redevelopment Area, to sea level at the shoreline of San Leandro Bay. The topography is nearly flat. The area contains eight intermittent streams that flow along the surface and through concrete-lined channels to San Leandro Bay. These streams include Sausal, Peralta, Courtland, Seminary, Lion, Arroyo Viejo, Elmhurst and San Leandro Creeks.

Surface and Near-Surface Geologic Units

In the Coliseum Redevelopment Area near San Leandro Bay and around the Oakland Airport are deposits of artificial fill. Natural geologic deposits predominate in the rest of the study area. The materials exposed at the surface are unconsolidated, and are underlain at relatively shallow depth by older unconsolidated deposits. Descriptions of these various materials, excerpted from published information, are presented below.

Artificial Fill

Artificial fill has been placed along the former margin of the bay and on former tidal marshes in the Coliseum Redevelopment Area. As described by Radbruch (1957), it consists of miscellaneous refuse, bay mud, or sand dredged from the bay. This fill overlies bay mud in most places, and may be difficult to distinguish visually from bay mud.

Bay Mud

Bay mud is a sandy, clayey silt with small lenses of sand containing organic material that in some places is abundant enough to form thin layers of peat (Radbruch, 1957).

Younger Alluvial Fan Deposits

Helley and others (1972) describe the younger alluvial fan deposits as consisting of unconsolidated, moderately sorted, permeable fine sand and silt. The thickness is about 20 feet where it interfingers with younger fluvial deposits and interfluvial basin deposits.

Younger Fluvial Deposits

Younger fluvial deposits are unconsolidated, and are made up principally of fine sand, silt, and silty clay. These materials are intermediate in character between interfluvial basin deposits and younger alluvial fan deposits (Helley and others, 1972). They generally are less than 15 feet thick. Based upon available subsurface data from borings drilled to the west of Interstate 880 (Woodward-Clyde-Sherard and Associates, 1964, 1966, 1967; Woodward-Lundgren & Associates, 1972) it is anticipated that younger fluvial deposits in the Coliseum Redevelopment Area will be found to consist of soft to medium stiff, moderately to highly plastic silty clay that has moderate strength and is moderately compressible.

Interfluvial Basin Deposits

This geologic unit consists of plastic, poorly-sorted, organic-rich clay and silty clay. It is found in poorly-drained areas marginal to the bay, and generally is less than 10 feet thick. It interfingers with recent bay mud, younger alluvial fan deposits, and younger fluvial deposits. It is known locally as Bay Mud, and is expected to be soft to medium stiff, to have low to moderate strength, and to have moderate to high compressibility (Helley and others, 1972).

Older Mud

Older mud is a dark, plastic, semi-consolidated, organic-rich clay. It underlies recent bay mud beneath the bay, and locally underlies younger alluvial deposits along the bay margin, where it reaches thicknesses in excess of 50 feet (Helley and others, 1972).

Subsurface Geologic Units

The surface and near-surface geologic units described above are underlain by other unconsolidated to weakly consolidated sediments and, at great depth, by bedrock of the Franciscan Assemblage. Based upon data from borings drilled near the Hegenberger Road / I-880 interchange, the materials present to a depth of 100 feet include stiff to very stiff silty and sandy clay interbedded locally with discontinuous layers of medium dense to very dense sand and gravel (Woodward-Clyde Consultants, 1990).

Geologic descriptions excerpted from U.S.G.S. maps by Radbruch (1969) and Radbruch and Case (1967) are presented below.

Merritt Sand

The Merritt Sand is a fine-grained silty or clayey sand with a maximum known thickness of 65 feet. Because the Merritt Sand has been widely used as fill, it may be indistinguishable from fill.

Temescal Formation

The Temescal Formation includes clayey gravel; sandy, silty clay; and sand-silt-clay mixtures. These materials are generally coherent, but may be crumbled with finger pressure. The maximum known thickness is 60 feet.

Alameda Formation

The Alameda Formation is made up of clay, silt, sand and gravel with a maximum known thickness of 1,050 feet. The consolidation increases with depth.

Franciscan Assemblage

The Franciscan Assemblage is made up principally of sandstone and shale, but includes various metamorphic rocks. It commonly contains intrusions of serpentine. Based upon a

structure contour map presented by Rogers and Figuers (1992), the depth to bedrock in the Coliseum Redevelopment Area probably is in the range of 500 feet to more than 1,000 feet.

Earthquake Scales

Earthquake magnitude scales, including the Richter Scale and moment magnitude scales, are described in Appendix H. All magnitude scales attempt to quantify the size of an earthquake through the use of a single parameter, usually by measuring the largest peak amplitude of a seismic wave. In addition, there are two other types of earthquake scales, the Modified Mercalli Scale and Rossi-Forel Scale, described below on Table 4.8-1, that are commonly used.

Regional Seismic Sources Important To The Coliseum Redevelopment Area

San Andreas Fault

The San Andreas fault was the source of the Richter magnitude 8.3 San Francisco earthquake of 1906, which caused extensive damage in San Francisco and elsewhere in the Bay area, and may have been the source of the magnitude 7.1 Loma Prieta earthquake of October, 1989. Other relatively strong earthquakes occurred on the San Andreas fault in the San Francisco Bay Region in June, 1808 (magnitude 6); June, 1838 (magnitude 7); and February, 1856 (magnitude 5-3/4) (Ellsworth, 1990). The estimated maximum credible Richter magnitude for the San Andreas fault is 8.5 (Wesson *et al.*, 1975), and the maximum estimated moment magnitude is a numerically smaller 8 (Working Group, 1988). Based on the results of recent studies by the U.S. Geological Survey and others (Working Group, 1990), the "expected" earthquake on the San Francisco Peninsula segment of the San Andreas fault would have a magnitude in the range of 6.5 to 7, and the "expected" earthquake on the North Coast segment of that fault would have a magnitude of 8. The estimated probabilities for occurrence of those events during the period 1990 to 2020 are 37 percent and 2 percent, respectively.

TABLE 4.8-1

MODIFIED MERCALLI INTENSITY SCALE
(Abridged)

<p>I. Not felt except by a very few under especially favorable circumstances. <u>(I Rossi-Forel scale)</u></p>	<p>VII. Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; some chimneys broken. Noticed by persons driving automobiles. <u>(VIII Rossi-Forel scale)</u></p>
<p>II. Felt only by a very few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing. <u>(I to II Rossi-Forel scale)</u></p>	<p>VIII. Damage slight in specially designed structures; considerably in ordinary buildings, with partial collapse; great in poorly built structures. Fall of chimneys, factory stacks, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water levels. Persons driving automobiles disturbed. <u>(VIII to IX Rossi-Forel scale)</u></p>
<p>III. Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing automobiles may rock slightly. <u>(III Rossi-Forel scale)</u></p>	<p>IX. Damage considerable in specially designed structures; well-designed structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations; ground cracked conspicuously. Underground pipes broken. <u>(IX+ Rossi-Forel scale)</u></p>
<p>IV. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows and doors disturbed; walls make creaking sound. Sensation like heavy truck striking building. Standing automobiles rocked noticeably. <u>IV to V Rossi-Forel scale)</u></p>	<p>X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks. <u>(X Rossi-Forel scale)</u></p>
<p>V. Felt by nearly everyone, many awakened. Some windows, dishes, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbance of trees, poles and other tall objects sometimes noticed. Pendulum clocks may stop. <u>(V to VI Rossi-Forel scale)</u></p>	<p>XI. Few, if any masonry structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and landslips in soft ground. Rails bent greatly.</p>
<p>VI. Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight. <u>(VI to VII Rossi-Forel scale)</u></p>	<p>XII. Damage total. Waves seen on ground surface. Line of sight and level distorted. Objects thrown upward into air.</p>

Hayward Fault

The Hayward fault was the source of major earthquakes that caused extensive destruction in the San Francisco Bay Region in 1836 and 1868. The magnitudes of those earthquakes have been estimated to be in the range of 6.8 to 7. The Hayward fault has been predicted to be capable of producing a similar earthquake in the relatively near future (Working Group, 1988). The results of recent studies indicate that the Hayward fault is segmented; the 1836 earthquake is believed to have occurred on the northern segment, and the 1868 earthquake is believed to have occurred on the southern segment. It has been estimated that there is a 28 percent chance that a magnitude 7 earthquake will occur on the northern segment of the Hayward fault, nearest to the site, within the next 30 years (Working Group, 1990). Various estimates place the maximum credible earthquake on the Hayward fault in the range of Richter magnitude 7 to 7-1/2 (Slemmons and Chung, 1982; Steinbrugge *et al.*, 1987; Wesson *et al.*, 1975) or a moment magnitude 7 (Working Group, 1988). The hypothesized magnitude 7-1/2 earthquake was used for disaster planning purposes and, due to segmentation of the fault, probably is higher than should be expected.

Historic Earthquakes Pertinent To Coliseum Redevelopment Area

1906 San Francisco Earthquake

Many cracks and crevices formed on Bay Farm Island during the San Francisco earthquake of April 18, 1906. The estimated Richter magnitude of this earthquake was 8-1/4. The reported Modified Mercalli intensities in the study area were in the range of VIII to IX (Topozada and Parke, 1982a). A report cited by Lawson (1908) states that half the windows in the stores were broken, and nearly every chimney was knocked down.

1868 Hayward Earthquake

An earthquake of estimated Richter magnitude 6.8 occurred on the Hayward fault, near Hayward, on October 21, 1868. The resultant seismic intensities in the East Bay reportedly were as great as those which were caused by the San Francisco earthquake of 1906 (Topozada and Parke, 1982b). The reported Modified Mercalli intensities in the Coliseum

Redevelopment Area were in the range of VIII to IX+. A photograph presented by Lawson (1908) shows the brick court house in San Leandro that was destroyed.

1989 Loma Prieta Earthquake

The Loma Prieta seismic event, a moderate earthquake with an estimated magnitude of 7.1 on the Richter Scale, occurred in the Bay Area in October 1989. The earthquake lasted about 15 seconds and caused damage in the epicentral region in Santa Cruz, Watsonville, Hollister and Los Gatos. Oakland and other areas, as far as 50 miles from the epicenter, were also damaged, as evidenced by vacancies and demolitions of many downtown masonry buildings.

Most of the casualties and damage were a result of ground shaking which caused the Cypress structure of I-880 to collapse, as well as collapse of a section of the Bay Bridge which rendered it closed to traffic for one month. The Cypress structure has since been demolished. In addition, several masonry structures (including brick chimneys) failed. Wood-frame buildings were jolted off their foundations in areas near the epicenter as well as in other Bay Area cities.

Ground failure also occurred, most notably in the Santa Cruz area near the epicenter. Landslides resulted in road closures and damage to structures. Liquefaction and ground settlement occurred in places further from the epicenter. Fires resulted from ruptured utility lines. The type of damage caused by the earthquake is typical of moderate-sized earthquakes. Damage that occurred at distances up to 50 miles from the epicenter is evidence that the plan area may be adversely affected by earthquakes on any of the nearby faults.

4.8.2 Significance Criteria

CEQA Guidelines Appendix G states that an impact that is normally considered significant will "expose people or structures to major geologic hazards." Given this, implementation of the Coliseum Redevelopment Plan would be considered significant if it were to result in collapse of or serious damage to a new building due to seismic events, or were to expose people to major geologic hazards.

4.8.3 Impacts

Potential Impacts Of Geologic Conditions

Artificial fill is suitable for relatively light structures, but the underlying mud consolidates under load (Radbruch, 1957). Assuming variation in the thickness of the mud, differential settlement could occur and could cause structural distress in buildings within the study area, a potentially significant effect if not mitigated.

Potential Impacts Of Seismic Conditions

Ground Failure

The earthquake stability of artificial fill is poor, because it is mostly underlain by "unstable bay mud" (Radbruch, 1957). Mud dredged from the bay has been used in some places for artificial fill, but is unsuitable for that use. A map contained in the California Division of Mines and Geology's earthquake planning scenario for a magnitude 7.5 earthquake on the Hayward fault indicates that the part of the Coliseum Redevelopment Area which is underlain by fill over bay mud has a high potential for ground failure due to liquefaction, settlement, and similar effects (Steinbrugge and others, 1987). The corresponding map contained in the earthquake planning scenario for a magnitude 8.3 earthquake on the San Andreas fault also indicates that there is a relatively high potential for ground failure in the fill areas of the Coliseum Redevelopment Area. The remainder of the area is classified as having a moderate or unknown potential for ground failure (Davis and others, 1982).

It is expected that ground failure due to seismically induced liquefaction and differential settlement accompanying a maximum credible earthquake on the Hayward or San Andreas faults would damage major structures, highways, railroads, airport runways, port facilities, and some utility pipelines (Steinbrugge and others, 1987). Although conservatively designed buildings on fill over bay mud may survive with relatively minimal damage, adjacent landscaped areas, parking lots and roadways may settle and crack. Ground failure effects within the study area would be potentially significant, if not mitigated.

Other Effects of Strong Ground Shaking

It has been inferred that a magnitude 7.5 earthquake on the Hayward fault would produce accelerations of about 0.6 gravity (Maulchin and Jones, 1992) and would cause effects equivalent to Intensity IX on the Modified Mercalli (MM) scale throughout the Coliseum Redevelopment Area (Steinbrugge and others, 1987). Similarly, it has been inferred that a magnitude 8.3 earthquake on the San Andreas fault would cause effects equivalent to Intensity IX on the Rossi-Forel (R-F) scale throughout the study area (Davis and others, 1982). A magnitude 7 earthquake on the Hayward fault is a more probable event than either of the aforementioned earthquakes (Working Group, 1990). Based on the available data on the effects of the 1868 Hayward earthquake, the effects in the study area would be equivalent to MM Intensity VIII. (Descriptions of the Modified Mercalli Scale and Rossi-Forel Scale are presented on Table 4.8-1.) During a major earthquake casualties and damage can be caused by falling objects, collapsed structures, fire and miscellaneous injuries (such as heart attacks). Ground shaking impacts within the study area would be potentially significant if not mitigated.

4.8.4 Mitigation

Construction at any location within the proposed Coliseum Redevelopment Area should be preceded by detailed and extensive site-specific geotechnical engineering investigations including exploratory borings, to help assess the characteristics and the lateral and vertical distribution of the underlying fill and soil materials. The information presented in this Environmental Impact Report is general in nature, and should not be used for design purposes.

1. The following mitigation measure for weak soils at building sites should be implemented, as appropriate, due to potentially significant ground settlement and ground failure.
 - a. Preloading is one of the more common mitigation options for weak soils. This entails temporarily placing a large, relatively heavy mound of soil on the construction site with the objective of causing the soil to undergo most of its

ultimate settlement before a building is erected. Dynamic deep compaction, which entails systematically tamping the soil in a grid pattern within the planned building area, is a less common but effective mitigation method for weak soils above the water table. The tamping is accomplished with a heavy weight dropped repeatedly from a height of 100 feet or so by a crane. Densification of saturated soils sometimes is accomplished by means of construction of stone columns. These columns reduce the potential for development of high pore pressures, and - depending upon the construction method - may densify the soil. In some cases, especially where fill materials have been loosely dumped into place, the loose materials may be removed preparatory to being returned to the site for placement in relatively thin compacted "lifts."

- b. Foundation design options for mitigation of weak soil conditions typically entail distributing the building load by means of spread footings, mat foundations or other means. Where the thickness of weak soils is considerable and there is a potential for differential settlement or liquefaction, piles are used. Numerous types of piles and methods of installation are available, but driven piles are the most common because they can provide support by developing skin friction in the soil as well as by providing end bearing on a firm soil layer.
- c. Mitigation for weak soils beneath existing buildings that are undergoing excessive settlement commonly is accomplished by one of two means: compaction grouting or installation of minipiles. Compaction grouting entails pumping a thick mortar grout into the ground beneath the building foundations, theoretically creating bulbs of grout that compact the surrounding soil as they expand under an injection pressure of 200 pounds per square inch (psi) or greater. Minipiles are pipe piles that are installed in holes drilled through the building footings and are grouted into place. Ideally they extend to a firm soil layer, but they can be made to function adequately by skin friction in weak soils.

4.8 Geology and Seismicity

With implementation of this measure, potentially significant ground settlement and ground failure would be mitigated to a less-than-significant level.

2. Mitigation for seismically induced strong ground shaking is accomplished by means of special structural design and/or a base isolation method that would accommodate the shaking. Depending upon the type and proposed use of the building, it may be appropriate to incorporate a dynamic analysis of the anticipated maximum probable or maximum credible ground motion in the structural design. Subsequent to construction of the building, fixtures such as book cases and water heaters should be secured so that they cannot topple.

With implementation of this measure, potentially significant ground shaking would be mitigated to a less than significant level.

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4.9 SURFACE WATER HYDROLOGY, STORM DRAINAGE, AND WATER QUALITY

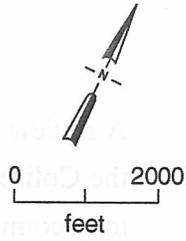
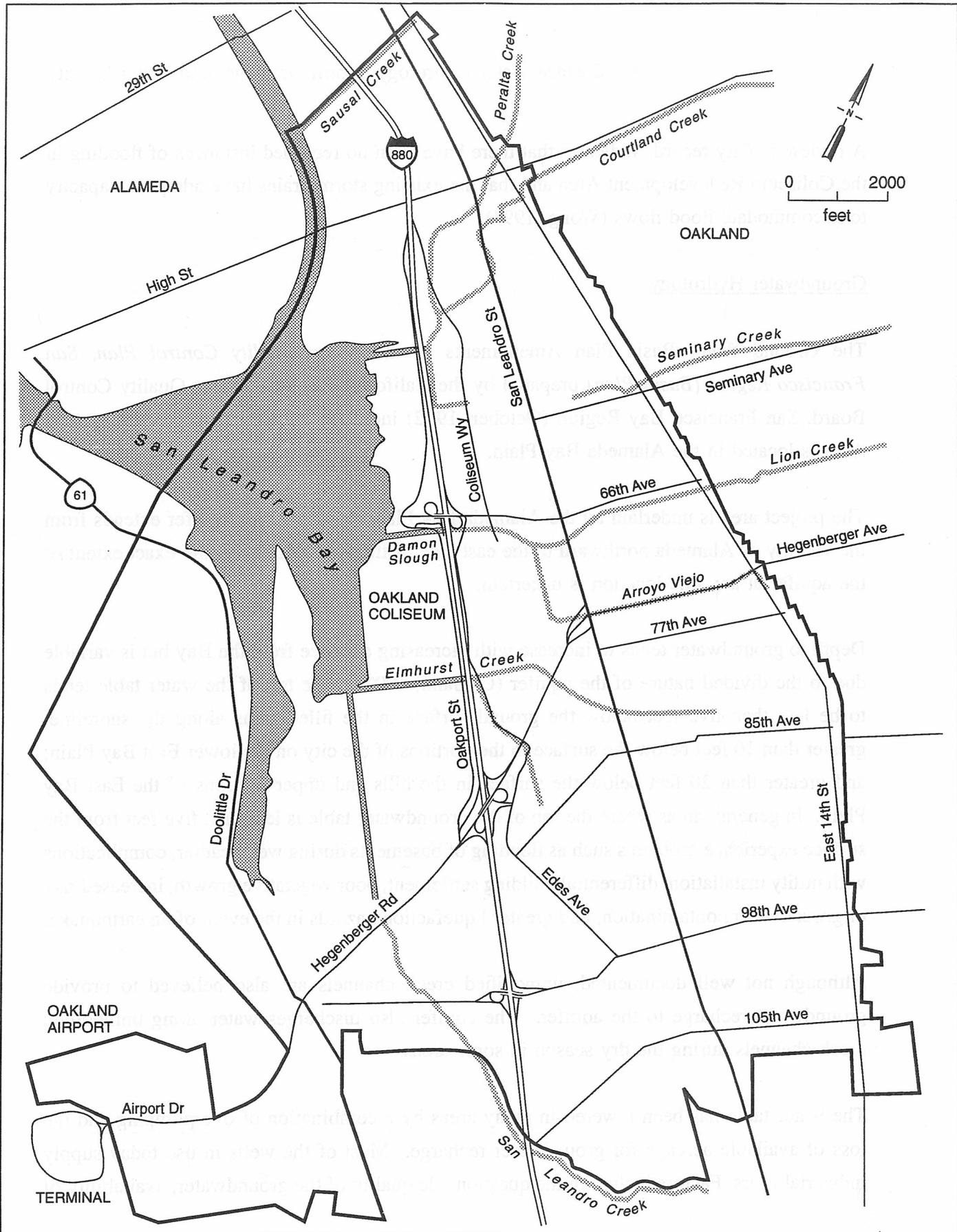
4.9.1 Environmental Setting

Surface Water Hydrology

The major hydrological features within the Coliseum Redevelopment Area are San Leandro Bay and eight creeks which discharge to the Bay: Sausal, Peralta, Courtland, Seminary, Lion, Arroyo Viejo, Elmhurst, and San Leandro Creeks. The watersheds of these creeks extend from the Oakland hills south of Joaquin Miller Park and east of Interstate 580 westward through the urbanized portions of Oakland. These watercourses are shown in Figure 4.9-1.

Stream flows in the Oakland hills east of I-580 are principally open creek channels with occasional culverts and storm drains. Between I-580 and East 14th Street, flows in the creeks are primarily conveyed (carried) by municipal storm drains with some sections of remaining as open channels. Storm drains and engineered channels convey flows between East 14th Street and San Leandro Street. Engineered channels generally carry these flows from San Leandro Street through the Coliseum Redevelopment Area to sloughs which drain to San Leandro Bay. Detailed descriptions of the streams and their watersheds are presented in Technical Report 5 (Open Space, Conservation, Recreation Element) for the update to the *Oakland Comprehensive Plan* (March, 1993); the Report's information is referenced herein.

Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency (FEMA) for the City of Oakland (1982) indicate that the stream systems within the Coliseum Redevelopment Area can contain the 100-year flood flows without causing any flooding. Therefore, properties and surface structures in the Coliseum Redevelopment Area are not subject to flooding hazards during the 100-year storm event. The FEMA flood insurance rate maps indicate that portions of the Coliseum Redevelopment Area are within the mapped boundaries of the 500-year flood event.



Project No.
93C0508A

Coliseum Area
Redevelopment Plan

Woodward-Clyde Consultants

CREEKS AND SURFACE WATER

**Figure
4.9-1**

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

A review of City records indicates that there have been no recorded instances of flooding in the Coliseum Redevelopment Area and that the existing storm drains have adequate capacity to accommodate flood flows (Wong, 1994).

Groundwater Hydrology

The Ground Water Basin Plan Amendments of the *Water Quality Control Plan, San Francisco Region (Basin Plan)* prepared by the California Regional Water Quality Control Board, San Francisco Bay Region (October, 1992) indicates the Coliseum Redevelopment Area is located in the Alameda Bay Plain.

The project area is underlain by the Alameda Bay Plain Aquifer. This aquifer extends from the vicinity of Alameda northward to the east side of the Bay. However, the exact extent of the aquifer at any one location is uncertain.

Depth to groundwater tends to increase with increasing distance from the Bay but is variable due to the divided nature of the aquifer (Oakland, 1992). The top of the water table tends to be less than five feet below the ground surface in the filled areas along the shoreline; greater than 10 feet below the surface in the portions of the city on the lower East Bay Plain; and greater than 20 feet below the surface in the hills and upper portions of the East Bay Plain. In general, areas where the top of the groundwater table is less than five feet from the surface experience problems such as flooding of basements during wet weather, complications with utility installation, differential building settlement, poor vegetative growth, increased risk of groundwater contamination, and greater liquefaction hazards in the event of an earthquake.

Although not well documented, unmodified creek channels are also believed to provide groundwater recharge to the aquifer. The aquifer also discharges water along unmodified creek channels during the dry season in some areas.

The water table has been lowered in many areas by a combination of overpumping and the loss of available acreage for groundwater recharge. Most of the wells in use today supply industrial users. Factors including the questionable quality of the groundwater, availability of

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

inexpensive high quality water from the East Bay Municipal Utility District, contamination control costs, and the threat of subsidence has limited the use of wells.

The *Basin Plan* indicates that existing beneficial uses of this basin includes water supplies for domestic or municipal uses, industrial process and service, and agricultural uses. The *Basin Plan* provides specific water quality objectives in the maintenance of groundwater conditions, with the maintenance of existing high quality of groundwater as the primary ground water objective.

Surface Water Quality

Discharges from the eight streams that run through the project area all eventually discharge to San Francisco Bay. These discharges may contain pollutants from urban storm runoff and illegal dumping into creeks. These pollutants include suspended sediments, nutrients, trace metals, pesticides, oil and grease, and organic debris. Pollutant levels in storm runoff are generally highest in the early part of the wet weather season and decrease with successive storm flows. However, this is dependent upon the pattern and frequency of storm events.

The Coliseum Redevelopment Area is located within the jurisdiction of the Alameda County Urban Runoff Clean Water Program, which was formed to comply with the non-point source pollution control requirements mandated by the Regional Water Quality Control Board (RWQCB). The RWQCB issued a National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit to the Program in October 1991. The permit requires the municipalities in Alameda County to implement a *Storm Water Management Plan* to control pollutants that reach their storm drain systems.

The main objective of the *Storm Water Management Plan*, prepared by the Alameda County Public Works Department in 1991, is to implement a comprehensive storm water management program to protect the beneficial uses of San Francisco Bay and its tributaries in Alameda County. The plan is designed to reduce the discharge of pollutants in storm water to the maximum extent practicable. The plan includes seven program components: public information and participation; municipal government activities; new development and construction site controls; illicit discharge identification and elimination; industrial dischargers

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

identification and runoff control; monitoring; and runoff control. The Alameda County Flood Control and Water Conservation District is responsible for the overall coordination of program planning.

The objective of the Industrial Discharger Identification and Runoff Control Program component of the *Storm Water Management Plan* is to identify industrial dischargers in Alameda County and to ensure that the industries are taking steps to reduce the discharge of pollutants to the municipal storm drain system to the maximum extent practicable.

Ground Water Quality

Relatively high concentrations of nitrates and total dissolved solids were measured in groundwater as early as the 1950s. Contaminants such as nitrates can come from a variety of sources including runoff of fertilizers from lawns and landscaped areas as well as from agriculture and improperly operated septic systems. More recently, groundwater contamination has been the result of leaking underground storage tanks and inadvertent releases of hazardous materials.

With new regulations (Chapter 6.7, Sections 25280 and 25299.6 of the *California Health and Safety Code*) requiring double-walled tanks and monitoring of these tanks, the risk of leakage has been reduced. Therefore, the danger of contamination in future industrial and commercial sites would be limited to non-compliance with existing laws and regulations for underground storage tanks.

All new businesses that handle more than 500 pounds of hazardous materials per year are required to formulate and submit a Hazardous Materials Business Plan (*California Health and Safety Code*, Chapter 6.95, Section 25504 Hazardous Materials Release Responsibility Plans and Inventory). Sites of known groundwater contamination in the City of Oakland are required to prepare a Work Plan that delineates the extent of contamination and a Site Mitigation Plan that outlines the required remediation.

The County Environmental Health, Hazardous Materials Division regulates hazardous materials storage and handling for businesses through inspections and issuing reports. The

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

California Code of Regulations includes requirements regarding leak monitoring and leak testing from underground tanks, and remedial action requirements for detected leaks.

Regulatory and Policy Framework

City of Oakland

The *Oakland Policy Plan*, prepared by the City in September 1980, provides direction for the protection of the city's water resources through the application of 12 policies to guide the treatment of these resources. The policies relevant to the Coliseum Redevelopment Area include the following provisions: incorporation of natural drainage features into new development; preservation of the natural character of creeks into flood control designs; provision for public access in the development of shoreline areas; and protection and enhancement of surface and ground water quality through "the adoption of reasonable policies and efforts."

In addition to these policies, the City of Oakland provides control over surface water quality through the implementation and enforcement of Ordinance No. 11590 of the City of Oakland 1993 *Municipal Code*. The ordinance establishes comprehensive guidelines for the regulation of discharges to the City's storm drain system. The ordinance directs and guides control of surface water quality by identifying specific protective measures required by the City for development projects. The ordinance requires the implementation of best management practices for new developments and redevelopments. The guidelines also address the protection of the City's watercourses.

The City's storm water management and discharge control ordinance identifies specific mechanisms for the inspection and enforcement of the ordinance's provisions. Measures include: testing and monitoring of affected waters, abatement of unacceptable conditions, emergency work by the City, and special assessment liens to recover costs for City-sponsored remedial work.

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

California Regional Water Quality Control Board (RWQCB)

In California, the RWQCB administers the National Pollutant Discharge Elimination System (NPDES) storm water permitting program. Construction activities of five acres or more are subject to the permitting requirements of the NPDES program (NPDES, 1993). As a condition of granting a permit, the Board requires the preparation of a Storm Water Pollution Prevention Plan by the owners of the construction site. The plan includes specifications for best management practices which must be implemented during project construction to control contamination of surface flows through the potential discharge of pollutants from the site. Additionally, the plan describes measures to prevent or control pollutants in runoff after construction is complete and identifies a plan to inspect and maintain these measures.

The Storm Water Pollution Prevention Plan must be prepared before construction begins, usually during the project planning and design phases of a project. The owners are required to submit a Notice of Intent to the RWQCB prior to the beginning of construction. Implementation of the plan starts with the commencement of construction and continues through the completion of the project. The Storm Water Pollution Prevention Plan must remain on-site throughout construction. After completion of the project, the owners submit a Notice of Termination to the RWQCB to indicate that construction is completed.

The Regional Board has identified water resources and water quality objectives in the *Water Quality Control Plan, San Francisco Bay Basin (Basin Plan)*. The *Basin Plan* is intended to provide a definitive program of actions designed to preserve and enhance water quality, and to protect beneficial uses to the maximum extent possible. For the Coliseum Redevelopment Plan Area, the *Basin Plan* identifies San Leandro Creek as a surface water resource with existing and potential beneficial uses. Existing beneficial uses include water contact recreation, wildlife habitat, and marine habitat. Potential beneficial uses include: commercial or sport fishing, warm fresh water habitat, preservation of an area of special biological significance, shellfish habitat, and estuarine habitat. The *Basin Plan* identifies the use of best management practices and local government controls to regulate erosion and sedimentation for the protection of beneficial uses.

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

San Francisco Bay Conservation and Development Commission (BCDC)

The BCDC has "Bay" jurisdiction over all areas below the line of highest tidal action which is at 6.1 National Geodetic Vertical Datum (NGVD) in the project vicinity. The Commission also has "shoreline band" jurisdiction over an area 100 feet upland and parallel to the line of highest tidal action. Under these criteria, BCDC has jurisdiction over a 100-foot wide corridor along San Leandro Bay and the tidal waterways (sloughs) discharging into the Bay. Consequently, the Coliseum Redevelopment Area projects affecting this shoreline band would require approval from BCDC prior to undertaking any work within the 100-foot corridor.

BCDC's primary objectives are the prevention of unnecessary filling of San Francisco Bay, including San Leandro Bay, and the increase of public access to and along the Bay shoreline. The Commission presents specific findings and policies to achieve these objectives in the BCDC *San Francisco Bay Plan* (1969). With regard to water quality protection, the *San Francisco Bay Plan* endorses the policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and RWQCB as the basis for carrying out the Commission's water quality responsibilities.

California Department of Fish and Game

Under Sections 1601 - 1603 of the *Fish and Game Code*, the Department has direct jurisdiction over development activities which would affect stream channels and watercourses. The Department requires a streambed alteration agreement for any work within the banks of affected creeks. The agency has recommended that changes such as road crossings, culverts, storm drain outlets, channelization, and rip rap use in creek channels should be avoided to the maximum extent possible. The Department also recommends a minimum 100-foot buffer to protect streams and wetlands. Formal notification of proposed channel modifications under *Fish and Game Code* Section 1603 should be made after all other permits and certifications have been obtained. Work cannot be initiated until a streambed alteration agreement has been executed for a specific project in the Coliseum Redevelopment Area.

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

4.9.2 Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project will normally have a significant effect on hydrological conditions and/or water quality if the development were to cause "substantial flooding, erosion or siltation; substantially degrade water quality, substantially degrade or deplete groundwater resources, interfere substantially with groundwater recharge," or contaminates a public water supply.

4.9.3 Impacts

Surface Flows

The Coliseum Redevelopment Plan would result in the expansion of existing businesses and development of new businesses and housing. Individual projects would entail construction for new or existing businesses, including demolition, land clearing, and excavation for foundations.

The Coliseum Redevelopment Area is urbanized and contains a relatively minor (about 10 percent) amount of undeveloped land. Since existing land is almost entirely impervious, any development would not be expected to increase significantly the amount of impervious areas, thus is not expected to increase the volume of storm water runoff overall. The *Coliseum Land Use Suitability Study* (1993) indicates that potential increases in storm runoff would not increase potential flood hazards nor pose a constraint to the development of new uses in the area. Existing storm drainage facilities would accommodate the negligible increases in runoff flows within the Coliseum Redevelopment Area associated with the development of currently vacant land. This would constitute a less-than-significant impact of the proposed Redevelopment Plan and no mitigation measures are warranted.

Surface and Ground Water Quality

The proposed Redevelopment Plan would result in a potential increase in the pollutant loads carried by surface runoff generated from within the Coliseum Redevelopment Area. Construction-related activities would possibly require demolition of existing facilities, as well

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

as excavation and grading at construction sites for expanded and new development. Expanded and new operations would also potentially contribute additional pollutants to surface flows.

Grading on Coliseum Redevelopment Area construction sites would potentially contribute eroded soil particles to surface runoff originating from the area. Eroded soils are carried downstream and settle out as sediment when runoff velocity decreases. By volume, sediment is the principal pollutant component in most storm runoff. Sediments also transport substances such as nutrients, hydrocarbons, and trace metals, which are conveyed to receiving waters. Suspended sediments and other pollutants originating within the Coliseum Redevelopment Area would flow through the City's storm drain system and into San Leandro Bay and San Francisco Bay.

Construction activities in the Coliseum Redevelopment Area resulting from the Redevelopment Plan could introduce new sources of pollutant loading to surface runoff unless proper sediment control measures are implemented. Principal pollutants of concern from construction sites include suspended soil particles, metals, construction chemicals, and miscellaneous wastes.

The National Pollutant Discharge Elimination System (NPDES) permit issued to the Alameda County Urban Runoff Clean Water Program requires municipalities to implement the activities listed in a Storm Water Management Plan to control pollutants that reach their storm drain systems. The program's component addressing new development and construction site controls requires the control of pollutants in urban runoff originating from new development and construction activities. This includes control of sediment and erosion control at construction sites, maintenance of control structures at construction sites, and permanent controls appropriate for drainage at the new development.

In order to provide working guidelines for the control of pollutant discharge to storm water, the Alameda County Public Works Agency participated as member of the Storm Water Quality Task Force to formulate management practices which would achieve the goals of the 1972 *Clean Water Act*. The Task Force developed comprehensive guidelines which were compiled into three handbooks entitled "California Storm Water Best Management Practice

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

Handbooks" (March 1993). The handbooks address the control of pollutant discharge in storm water runoff for construction activities, industrial/commercial sites, and municipal activities. The implementation of the best management practices identified by these handbooks would reduce the potentially significant water quality impacts associated with construction and operation of the developments within the Coliseum Redevelopment Area to a less-than-significant level.

Surface and shallow groundwater quality could potentially degrade due to hazardous waste leaks and spills in the Coliseum Redevelopment Area. Contamination of surface and shallow groundwater could result from accidents during transport, storage, and industrial and commercial hazardous material uses. With the additional industrial and commercial development expected under the proposed Redevelopment Plan, there could be an increased risk of hazardous materials contamination of surface and shallow groundwater. However, new requirements for safe handling, storage and monitoring of hazardous materials would reduce this risk. Development activities such as excavation and dewatering for foundations and laying pipes could expose contaminated soils or groundwater. Section 4.7 Hazardous Materials provides an in-depth discussion and analysis of hazardous materials impacts and mitigation measures.

4.9.4 Mitigation

Flooding

Implementation of the following measure would further reduce the less-than-significant flooding hazard effects due to development resulting from implementing the Redevelopment Plan.

1. As required by the City of Oakland, development projects would include on- and off-site storm drainage facilities such as catch basins and pipes to convey (carry) runoff to city storm drains. The construction of these facilities would ensure the collection and conveyance of storm flows generated by each site to appropriate municipal storm drains. The development of project-related storm drainage facilities would preclude the potential for localized flooding on the property and adjoining streets.

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

Water Quality

Implementation of the following measures would reduce potential water quality degradation impacts to a less-than-significant level.

1. In order to alleviate the potential for increased contamination of surface flows from projects in the Coliseum Redevelopment Area, all development plans should include the preparation and implementation of a storm water pollution prevention plans for projects encompassing an area of five acres or more. The Storm Water Pollution Prevention Plan should be prepared and submitted for review by the Regional Water Quality Control Board (RWQCB) before the start of construction.

All development proposals in the Coliseum Redevelopment Plan Area should incorporate the measures indicated in the Best Management Practices for Construction Activity handbook as specified by the Nonpoint Source Pollution Control Program. The Best Management Practices include measures guiding the management and operation of construction sites to control and minimize the potential contribution of pollutants to storm runoff from these areas. These measures address procedures for controlling erosion and sedimentation, and managing all aspects of the construction process to ensure thorough control of potential water pollution sources. The Best Management Practice Handbook also addresses the preparation of a storm water pollution prevention plan, the selection of best management practices, and the monitoring process for compliance with the Storm Water Pollution Prevention Plan.

The following measures are identified for inclusion in the Storm Water Pollution Prevention Plans to minimize the potential adverse water quality impacts of the project:

- Remove surface cover from soils immediately prior to construction. Uncover soils only where required for construction activities.
- Cover stockpiles of soil.

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

- Install silt fences.

2. The following measures are required by the City as standard conditions of approval:

- That no grading shall occur without a valid grading permit issued by the Office of Planning and Building and that prior to the issuance of any grading permit, a drainage plan and an erosion control plan shall be approved by the Office of Planning and Building. All graded slopes should be planted to prevent erosion according to an erosion control plan approved prior to the issuance of any grading permit.
- That no grading shall occur within the period of October 15 through April 15 unless specifically authorized by Engineering Services.
- That any project which does not require a grading permit but results in disturbance of the ground will require installation of appropriate remedial measures to assure water runoff does not transport sediments to the storm water system.

3. The City shall enforce the requirements and recommendations of the Alameda County Urban Runoff Clean Water Program to minimize the potential deterioration of water quality from pollutants in surface flows from specific development sites.

4. The City shall conform to its own grading and storm water control ordinances in the development of City projects, and, as part of the Storm Water Pollution Prevention Plan, prepare an erosion control plan to minimize the potential loss of soils from the project area during construction.

The following mitigation measure would reduce impacts of water quality degradation from nonpoint sources to less-than-significant level:

5. On a regional basis the City of Oakland is participating in the Alameda County Urban Runoff Clean Water Program in order to reduce pollutants in storm water runoff.

4.9 Surface Water Hydrology, Storm Drainage, and Water Quality

Project sponsors of any development resulting from implementation of the proposed Redevelopment Plan should implement best management practices (see Mitigation Measures 1 and 2 above).

6. Development resulting from implementation of the proposed Redevelopment Plan should maximize water retention and reduce the quantity of water runoff. Peak flows and storm volumes should be maintained at pre-project levels.

The following measure is recommended by the California Department of Fish and Game to minimize non-point source pollution in creek channels.

7. Oil/grease separators should be required in the storm drain systems of all parking lots which would accommodate 50 or more cars. An annual program for inspecting the separators after a major storm and conducting regular lot sweeping should be formulated and implemented for specific projects in the Coliseum Redevelopment Area.

REFERENCES - Surface Water Hydrology, Storm Drainage, and Water Quality

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4.10 BIOTIC RESOURCES

4.10.1 Environmental Setting

Regional Setting

The Coliseum Redevelopment Area represents a land form modified by human development and is surrounded by urbanized areas of the cities of Alameda, Oakland and San Leandro. Remnant natural biologic communities occurring in and around the study area comprise wetlands, including tidal salt marsh, non-tidal salt marsh and drainages, seasonal wetlands, mudflats, and open water, as well as terrestrial habitats, such as ruderal uplands, sand dunes, and landscaped areas. These habitats are used by a variety of both common and special status species (e.g., species having some degree of regulatory or policy protection), including numerous bird species and some terrestrial mammals. The urban environment, including landscaped areas associated with development, is of little habitat value to wildlife. The open waters of the bay provide foraging habitat for a variety of water birds, including fish-eating birds such as loons and cormorants.

Vegetation

Few natural plant communities occur within the Coliseum Redevelopment Area due to the degree of urbanization. The study area supports three basic habitat types: ruderal ("weedy") grass fields, urban landscape vegetation, and both tidal and freshwater wetlands, which occur along shores of San Leandro Bay. The wetland community along the San Leandro Bay is considered important because of its regional and statewide rarity. The wetlands provide wildlife habitat and feeding-ground for migratory waterfowl.

Ruderal Areas

Vacant lots and open space within the area are generally vegetated with introduced ruderal (weedy) species which can out compete the native species for the relatively limited available resources. Non-native species commonly found in these areas include grasses such as wild oats (*Avena Fatua*), annual ryegrass (*Lolium multiflorum*), and brome (*Bromus* sp.) and other invasive species such as field mustard (*Brassica campestris*), wild radish (*Raphanus sativus*),

yellow star thistle (*Centaurea solstitialis*), and sweet fennel (*Foeniculum vulgare*). These and other species can provide food and cover for wildlife.

Urban Areas

Urban landscape vegetation consists of ornamental trees, shrubs, and grasses that have been planted in residential yards, along streets, on median strips, and in public lands and commercial and industrial developments.

Wetlands

Low-lying tidal areas around San Leandro Bay, and in particular Arrowhead Marsh, which extends into San Leandro Bay to the east of the Tidewater Avenue Target Area, are dominated by cordgrass (*Spartina foliosa*). Vegetation common to the banks of creeks and sloughs which enter San Leandro Bay and seasonal wetlands include English plantain (*Plantago lanceolata*), curly dock (*Rumex crispus*), common spikeweed (*Hemizonia pungens* ssp. *maritima*), perennial ryegrass (*Lolium perenne*), bird's-foot trefoil (*Lotus corniculatus*), alkali heath (*Frankenia grandifolia*), salt grass (*Distichlis spicata* ssp. *stolonifera*), and bristly ox-tongue (*Picris echioides*).

Wildlife

Marshes within the Coliseum Redevelopment Area serve as relatively important feeding and resting habitats for migrating birds. Typical species include killdeer (*Charadrius vociferous*), black-necked stilts (*Himantopus mexicanus*), American Avocets (*Recurvirostra americana*) and migrant snowy egrets (*Egretta thula*) which use the marshes as rest stops. The tidal sloughs, which run through the Coliseum Redevelopment Area to San Leandro Bay and its marshes, provide important habitat areas for resident wildlife species, such as mallards (*Anas platyrhynchos*) and resident snowy egrets, that utilize marshes.

Species adapted to urban areas, such as American kestrels (*Falco sparverius*), often use the sloughs as foraging grounds, feeding on insects and reptiles that live in these vacant lots and other open areas. Areas of seclusion allow species such as ground squirrels (*Spermophilus*

beecheyi), deer mice (*Peromyscus maniculatus*), and California meadow voles (*Microtus californicus*) to take up residence, thus creating food for larger mammals. These undeveloped areas are also home to brown towhees (*Pipilo fuscus*), rock doves (*Columba livia*), mourning doves (*Zenaida macroura*), warblers (*Dendroica* sp.), bushtit (*Psaltriparus minimus*), goldfinch (*Carduelis* sp.), and house sparrows (*Passer domesticus*). Relatively small mammals that would be expected to be found in the area include striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), rabbits (*Sylvilagus* sp.), and reptiles such as gopher snakes (*Pituophis melanoleucus*) and western fence lizards (*Sceloporus occidentalis*).

Regulatory Framework

Wetland Protection

Section 404 of the Federal *Clean Water Act* regulates discharge of fill material into "waters of the United States," including wetlands, marshes, waterways and drainage channels. The U.S. Army Corps of Engineers must issue a permit for any project involving the filling of wetlands. The nature of a proposed project and the amount of discharged or dredged materials associated with construction activities determines the type of permit required under Section 404. Nationwide permits authorize some activities without requiring formal application or notification to the U.S. Army Corps of Engineers, provided certain conditions are met. Some of these conditions include restoring vegetation, elevation, and bottom contours to their original condition, disposing of any excess materials to an upland disposal area, and avoiding activities that disrupt aquatic, threatened and endangered species and/or their habitat. For filling of less than one acre in "isolated" waters, including wetlands, provided the conditions of Nationwide Permit No. 26 are met, no formal notification is required and a Nationwide Permit may be granted. If it is likely development would encroach upon a potential wetland area, or that a potential wetland area would be altered (for example in the Tidewater and East Bay MUD / Edgewater Sites Target Areas or other areas surrounding San Leandro Bay), it would be necessary to determine the extent to which "Waters of the United States" exist on a property as part of a permit application to the Army Corps of Engineers.

San Francisco Bay Conservation and Development Commission (BCDC)

The BCDC has "Bay" jurisdiction over all areas below the line of highest tidal action which is at 6.1 National Geodetic Vertical Datum (NGVD) in the project vicinity. The Commission also has "shoreline band" jurisdiction over an area 100 feet upland and parallel to the line of highest tidal action. Under these criteria, BCDC has jurisdiction over a 100-foot wide corridor along San Leandro Bay and the tidal waterways (sloughs) discharging into the Bay. Consequently, the Coliseum Redevelopment Area projects affecting this shoreline band would require approval from BCDC prior to undertaking any work within the 100-foot corridor.

BCDC's primary objectives are the prevention of unnecessary filling of San Francisco Bay, including San Leandro Bay, and the increase of public access to and along the Bay shoreline. The Commission presents specific findings and policies to achieve these objectives in the BCDC *San Francisco Bay Plan* (1969).

California Department of Fish and Game

Under Sections 1601 - 1603 of the *Fish and Game Code*, the Department has direct jurisdiction over development activities which would affect stream channels and watercourses. The Department requires a streambed alteration agreement for any work within the banks of affected creeks. The agency has recommended that changes such as road crossings, culverts, storm drain outlets, channelization, and rip rap use in creek channels should be avoided to the maximum extent possible. The Department also recommends a minimum 100-foot buffer to protect streams and wetlands. Formal notification of proposed channel modifications under *Fish and Game Code* Section 1603 should be made after all other permits and certifications have been obtained. Work cannot be initiated until a streambed alteration agreement has been executed for a specific project in the Coliseum Redevelopment Area.

Special Status Species

Special status species include those plants and animals that are state- and/or federally listed as rare, endangered, or threatened; or are category 1 or 2 candidates for federal listing; or are considered Species of Special Concern as designated by the California Department of Fish

and Game; or are on lists 1A, 1B, or 2 published by the California Native Plant Society. Species potentially occurring within the region are listed in Appendix Q, Table Q-1. Based upon existing information, suitable habitat does not appear to exist within the Coliseum Redevelopment Area for most of the species listed in this table. Species which may occur, because of the presence of potentially suitable habitat, are discussed below.

Vegetation

Soft Bird's Beak and *Point Reyes Bird's Beak* are rare flowering plants which once occurred in the salt marshes of San Francisco Bay. Neither has been seen along the East Bayshore in many years and recent reports indicate they are only present in North Bay Counties. However, potential habitat for both plants exists in salt marshes surrounding San Leandro Bay. The Delta tule pea is also potentially present in the habitat in this area. Because of the disturbed nature of most of the study area, no other sensitive plant species are expected to occur.

Terrestrial Wildlife

Tidal wetlands allow for some of the greatest diversity of fauna (animal) species. The degraded saltmarsh tidal slough habitat within the Coliseum Redevelopment Area (i.e., Damon Slough to the south of the East Bay MUD / Edgewater Sites Target Area and East Creek Slough which is the northern boundary of this target area and southern boundary of the Tidewater Avenue Target Area) is not currently suitable habitat for sensitive and/or threatened mammals that historically inhabited these areas. Species such as the federally endangered California salt marsh harvest mouse (*Reithrodontomys reviventris halicoetes*) and California clapper rail (*Rallus longirostris obsoletus*) historically have utilized the sloughs and marshes east of Interstate 880. The current condition of the habitat around the sloughs does not contain the necessary requirements for the habitat of these species. However, potentially suitable habitat currently exists in Arrowhead Marsh, which projects into San Leandro Bay to the east of the East Bay MUD / Edgewater Sites Target Area and clapper rails have been sighted at Arrowhead Marsh in the past (California Natural Diversity Database). The salt marsh vagrant shrew (*Sorex vagrans halicoetes*), a federal candidate species, was last seen

in Arrowhead Marsh in 1938 (California Natural Diversity Database) and is presumed extinct in this area.

The federally endangered California least tern (*Sterna antillarum browni*) is often found in the sand dunes near a runway at the Metropolitan Oakland International Airport. No nests have been found at the Oakland Airport in recent years and this species is not known to occur within the boundaries of the Coliseum Redevelopment Area. The dusky-footed woodrat (*Neotoma fuscipes annectens*), a federal candidate 2 species, requires woody plants such as live oak, maple, alder, coffeeberry, and elderberry as well as grasses and other herbaceous plants. These woody plant species do not occur within the Coliseum Redevelopment Area, and there would not be habitat for the woodrat.

The San Francisco fork-tailed damselfly (*Ischnura gemina*), a federal candidate 3 species, may be a resident along the sloughs mentioned above; and the California brackishwater snail (*Tyronia imitator*), a federal candidate 2 species, may occur along the bottoms of the sloughs. The burrowing owl could occur in the area's open fields, but these are not within target areas, or along the East 14th Street Corridor, and development is not anticipated to occur in these fields.

4.10.2 Significance Criteria

CEQA Guidelines Section 15065(a) specifies that a lead agency shall find that a project may have a significant effect on the environment when the project has the potential to "...substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered species..." *CEQA Guidelines*, Appendix G, provides examples of impacts that normally are considered significant including those that would "substantially affect a rare or endangered species of animal or plant or the habitat of the species;" "interfere substantially with the movement of any resident or migratory fish or wildlife species;" or "substantially diminish habitat for fish, wildlife or plants."

Given these standards, a project would normally be considered to have a significant adverse impact on biological resources if it would result in substantial disruption to, or destruction of, any special status species, their habitat, or breeding grounds.

Impacts would be considered cumulatively significant when the incremental effects of the individual project when viewed together with past projects, other current projects, and probable future projects would substantially affect the resource.

4.10.3 Impacts

The potential impacts to biological resources as a result of the implementation of the Coliseum Area Redevelopment Plan would be primarily due to loss of existing habitat because of new construction. New construction, if any, would occur mainly within the 10 target areas. Most of the target areas represent disturbed, urbanized environments which have little wildlife habitat value; however undeveloped areas within the Tidewater Avenue and East Bay MUD / Edgewater Sites Target Areas border San Leandro Bay and could contain sensitive species. Other areas of potential habitat for special status species include Arrowhead Marsh, Damon Slough (along the southern boundary of East Bay MUD / Edgewater Sites Target Area), East Creek Slough (along the northern boundary of East Bay MUD / Edgewater Sites Target Area and along the southern boundary of Tidewater Target Area), San Leandro Creek, and the undeveloped shoreline of San Leandro Bay. It is unlikely that new development would occur immediately adjacent to the shoreline of San Leandro Bay or the sloughs, where sensitive species are most likely to occur. As discussed in Sections 3.2.3 and 4.2.1, the Martin Luther King, Jr. Shoreline Regional Park exists along the boundary of the Tidewater Avenue and East Bay MUD / Edgewater Sites Target Areas. This park is designated as open space and no new development would occur in this area. Although unlikely, if new construction were to occur in or near sensitive areas, the construction could result in the loss or disturbance of habitat for special status species or direct mortality of special status species. Adverse impacts to special status species (including the soft birds-beak, Point Reyes birds beak, Delta tule pea, California clapper rail, California black rail, borrowing owl, salt marsh harvest mouse, California brackishwater snail, and San Francisco fork-tailed damselfly) or sensitive habitats (salt marsh, brackish water marsh, dense pickleweed, and tidal streams) would be considered significant. Specific Impacts to sensitive

species or habitats such as wetlands would be determined on a project specific basis within the Redevelopment Area.

Construction-related impacts to common vegetation and wildlife species (e.g., ruderal or weedy plant species, ground squirrels, etc.) include direct mortality of resident species, habitat loss or degradation, or disturbance of nests. The construction and operation-related disturbances would not be considered significant impacts to common plant and wildlife species; however, the magnitude of the impacts to common species may be considered for specific projects within the Coliseum Redevelopment Area once they were proposed for development.

Changes in land use, such as increasing the density of industrial development or conversion of currently vacant land to industrial uses could cause adverse affects on biological resources, particularly in sensitive areas. The impacts, if any, would need to be determined for specific projects within the Coliseum Redevelopment Area.

Within developed areas of the Coliseum Redevelopment Area, other proposed actions such as landscaping, lighting improvements, and code enforcement would likely have little or no effect on biological resources.

4.10.4 Mitigation

Specific mitigation and monitoring plans should be developed for individual projects within the Coliseum Redevelopment Area, particularly for construction in potentially sensitive areas near creeks, sloughs and the San Leandro Bay shoreline. The following general measures would apply to most construction-related projects that were to occur within the study area:

1. In or near wetland habitats or other areas where special status species potentially occur, surveys should be required prior to construction to determine the presence or absence of special status species. These studies would provide information to assess project specific impacts to vegetation and wildlife, such as channeling of sloughs or creeks, loss of wetland habitat, or increasing non-native species, and allow the

modification of project plans to avoid sensitive species or to provide a sufficient buffer for them.

2. Wetland mitigation plans should be prepared according to U.S. Army Corps of Engineers Guidelines for individual projects within the Redevelopment Area that would impact "Waters of the United States" and wetland habitats.
3. New construction along Damon Slough, East Creek Slough, and San Leandro Creek and their tributaries could adversely effect the ecology of the sloughs. A minimum buffer zone of 50 feet should be established from the top of the slough banks on both sides of the sloughs and their tributaries within the Coliseum Redevelopment Area, within which development (including construction, storage, and vehicular traffic) should be prohibited. Night lighting should be directed away from natural areas.
4. Developers of projects near wetlands in the Coliseum Redevelopment Area should construct sediment detention basins, and install oil and grease traps in storm drain facilities.
5. During construction, developers of projects near wetlands in the study area should use sediment retention devises such as hay bales and/or silt fences, and possibly restrict grading operations to the dry season when there would be the potential to adversely impact the wetlands.
6. Monitors should be on-site during construction in sensitive areas.
7. Vehicles should be restricted to designated roads and parking areas in proximity to surface waters and wetlands, and not allowed within the designated buffer (see Measure 3, above).

These measures would reduce impacts due to implementation of the Redevelopment Plan to a less-than-significant level. In addition, the identified buffer would maintain a corridor for wildlife movement and other activities.

REFERENCES - Biotic Resources

California Natural Diversity Data Base (CNDDDB), Rare find, 1994-1995

U.S. Army Corps of Engineers, Habitat Mitigation and Monitoring Proposal Guidelines, San Francisco District, October 1991.

4.11 CULTURAL RESOURCES

4.11.1 Prehistoric Archaeology

Environmental Setting

The Redevelopment Plan is described in Chapter 3.0 Project Description. The Coliseum Redevelopment area would encompass 6,500 acres. There are 10 target areas identified for analysis in the EIR, which are shown on Figure 3.3. They are: 1) Fruitvale BART Station, 2) Elmwood Avenue, 3) Tidewater Avenue, 4) East Bay MUD / Edgewater Sites, 5) Railroad Avenue, 6) Pippin-Pearmain, 7) 81st Avenue, 8) Coliseum BART Station, 9) 98th Avenue Industrial, and 10) Airport Gateway.

Prehistory

The first intensive archaeological survey of the East Bay shoreline was conducted between 1906 and 1907 by N. C. Nelson, who documented some of the most important archaeological sites in central California. The study of Bay region prehistory began along the bay-shore of Alameda and Contra Costa Counties, which contained more than 100 shellmounds. Early discoveries at bayshore sites provided the basis for the first model of prehistoric cultural succession in central California (Moratto, 1984). Two particularly important sites are located in Berkeley and Emeryville, north of the study area.

The West Berkeley Site (CA-Ala-307) was first explored by archaeologists in 1902. Intermittent excavation took place at the site for a number of years. Prior to its destruction in the 1950s, CA-Ala-307 was a shellmound about 200 meters long, 100 meters wide and 6 meters deep. In 1950 and 1954 the University of California Archaeological Survey excavated some of the last remaining deposits at the site (Wallace and Lathrap, 1975). CA-Ala-307 provides the "first clear-cut evidence of Early Horizon occupation" in the San Francisco Bay Area; it was concluded that the site was settled as early as 3500 to 4000 years ago and abandoned in Middle Horizon times (Wallace and Lathrap, 1975).

The Emeryville Site (CA-Ala-309) is perhaps the deepest and most famous of the Bay middens (refuse heaps). Archaeological exploration began in 1902 by M. Uhle. Those early

investigations were limited in scope and produced a relatively small inventory of cultural materials; nonetheless, Uhle identified 10 distinct cultural strata and suggested a progression of Bay region cultural change (Uhle, 1907). In 1924 the Emeryville shellmound was leveled to accommodate the construction of a paint factory, and a number of artifacts and human skeletal materials were recovered at that time. W. E. Schenck of UC Berkeley salvaged a collection of cultural materials from the upper 6.7 meters of the midden, which was removed by steam shovel. A lesser amount of materials was recovered from trenches that were archaeologically excavated in the lower 2.4 meters of the cultural deposit. Schenck's analysis of the material led to an estimated age of 1,000 years for CA-Ala-309 (Schenck, 1926). This estimate was not supported by a radiocarbon date of 2310 ± 220 years before the present, later obtained on charcoal from the mound base (Hubbs *et al.*, 1962, cited in Moratto, 1984). Schenck concluded that different groups of people from nearby interior regions inhabited the mound seasonally while gathering shellfish and hunting sea otter, and not all of them were culturally identical (Wallace and Lathrap, 1975). Later, however, H. Howard's (1929) analysis of bird bone from the site conclusively revealed that CA-Ala-309 had actually been occupied year-round (Moratto, 1984). To the south of the Coliseum Redevelopment Area is an important cluster of sites in the Newark area. Three sites, CA-Ala-328 (Patterson Site), -13 and -12, that are now protected within the Coyote Hills Regional Park. These sites were excavated over several decades by various archaeologists from San Francisco State University, Hayward State University, San Jose State University, Stanford University and the University of California at Berkeley (Moratto, 1984).

Analysis of radio-carbon dates and artifacts lead P. Bickel (1981) to conclude that CA-Ala-12 and -328 were first occupied more than 2,300 years ago, likely between 3,000 and 4,000 years ago; CA-Ala-13 was settled later, circa A.D. 300 and was apparently occupied intermittently for at least a millennium thereafter. CA-Ala-328 realized a period of abandonment between circa A.D. 300 and 1500, but was reoccupied during the last few centuries of the prehistoric era (Moratto, 1984). Bickel's investigations led to a delineation of changes in artifact types and mortuary practices at the three Coyote Hills sites.

Most exploratory archaeology, both survey and excavation, around the Coliseum Redevelopment Area has occurred on lands outside the study area. The Emeryville, West Berkeley and Coyote Hill sites continue to be reference points in discussion of Bay Region

chronology and cultural process. The information that has been generated to date is relevant to the entire region and presents a framework by which prehistoric resources in the study area may be evaluated and managed.

Ethnography

Indians who occupied the East Bay at the time of Euroamerican contact are referred to as the Costanoan. Organized into tribelet territories these people had both permanent villages and seasonal camps occupied as they exploited seasonally available resources. Appendix J provides a more detailed discussion of the Costanoan peoples and their lifeway.

Findings

Six prehistoric archaeological sites (CA-Ala-20, -52, -321, -322, -323 and -506) are located within the Coliseum Redevelopment Area. Two resources, CA-Ala-20 and -50, are located within the Pippin/Pearmain Target Area; and one site, CA-Ala-321, is located within the 81st Avenue Target Area. Other recorded archaeological resources were found within the remainder area (not within a specific target area) of the Coliseum Redevelopment Area, (CA-Ala-52, -322 and -323).

Information as to the depth, areal extent, depositional integrity, function and cultural complexity of the deposits is lacking. Most site areas are currently located beneath buildings and pavement, which is to be expected for an area as urbanized as the Coliseum Redevelopment Area.

Most of these archaeological sites have been disturbed, partially destroyed and in some cases totally destroyed. However, some of these resources could have intact, subsurface deposits which could contain information important to the understanding of Bay Area prehistory and to the resolution of specific archaeological research considerations. Sites that still have subsurface deposits with good depositional integrity would have potential for meeting *CEQA Guidelines* Appendix K (as well as *National Historic Preservation Act*, Section 106) criteria as important (and significant) cultural resources.

4.11 Cultural Resources

All recorded archaeological site locations would, therefore, be regarded as sensitive areas where significant environmental impacts could occur. Also, prehistoric cultural deposits tend to be located in the vicinity of potable water sources such as the numerous intermittent streams located throughout the East Bay. Favorable settings are located in the study area, which suggest archaeological sensitivity in the vicinity of Sausal, Peralta, Courtland, Seminary, Lion, Arroyo Viejo, Elmhurst and San Leandro Creeks.

Significance Criteria

Appendix G of the *California Environmental Quality Act (CEQA) Guidelines* states that "A project will normally have a significant effect on the environment if it will...Disrupt or adversely affect a prehistoric or historic archaeological site or property of historic or cultural significance to a community or ethnic group or social group, or a Paleontological site except as part of a scientific study."

This potential damage to an important archaeological resource resulting from land alteration and construction activities within the Coliseum Redevelopment Area would be considered a significant impact. An important (significant) cultural resource is defined in Appendix K of the *CEQA Guidelines* as one which is associated with an event or person of recognized significance in California or American history, or recognized scientific importance in prehistory; can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential questions; has a special quality such as oldest, best example, largest or last surviving example of its kind; is at least 100 years old and possesses substantial stratigraphic integrity; or involves important research questions that historical research has shown can be answered only with archaeological methods.

Impacts

Sites within the Coliseum Redevelopment Area that still have subsurface deposits with good depositional integrity would have potential for meeting criteria as important (and significant) cultural resources under both *CEQA* and the *National Historic Preservation Act*, Section 106. All recorded archaeological site locations are, therefore, regarded as sensitive areas where significant environmental impacts could occur. Also, prehistoric cultural deposits tend to be

located in the vicinity of potable water sources such as the several intermittent streams found throughout the East Bay. Several such favorable settings are located in the study area, which suggests archaeological sensitivity in the vicinity of Courtland, Seminary, Sausal, Peralta, Lion, Arroyo Viejo, Elmhurst, and San Leandro Creeks. Any development within those areas of the proposed Coliseum Redevelopment Area that would require land alteration during construction could result in the discovery of buried prehistoric cultural deposits.

Archaeological sites located within any of the target areas would be the most susceptible to development impacts. Two resources, CA-Ala-20 and -50, are located within the Pippin/Pearmain Target Area; and one site, CA-Ala-321, is located within the 81st Avenue Target Area. Development within these areas could impact archaeological sites if construction were required that would include land alteration activities and/or soil excavations. Other recorded archaeological resources found within the remainder area (not within a target area) of the Coliseum Redevelopment Area (CA-Ala-52, -322 and -323) would potentially be subject to similar impacts if development were to occur. The Railroad Avenue, 98th Avenue Industrial and Airport Gateway Target Areas are archaeologically sensitive due to their proximity to San Leandro Creek; the 81st Avenue Target Area is archaeologically sensitive due to its proximity to Elmhurst Creek; the Fruitvale BART Station and Elmwood Avenue Target Areas are archaeologically sensitive due to the proximity to Sausal Creek; and the Coliseum BART Station Target Area is archaeologically sensitive due to its proximity to Arroyo Viejo and three recorded archaeological sites.

Subsurface construction activities within archaeologically sensitive target areas or within archaeologically sensitive portions of the remainder area (not within a target area) of the Coliseum Redevelopment Area could lead to the discovery of previously unknown prehistoric cultural deposits.

Disturbance of potentially important archaeological resources could result in a significant impact due to implementation of the Redevelopment Plan.

Cumulative Impacts

Given the relatively built-up nature of the Coliseum Redevelopment Area, cumulative impacts associated with the Redevelopment Plan would not be distinguishable from short-term impacts resulting from ground disturbing activities at any of the known or previously unknown archaeological site locations.

Mitigation

1. In the event that development within the Coliseum Redevelopment Area were to include subsurface land alteration activities in the vicinity of recorded archaeological resources, focused evaluation of the proposed activities and effects on cultural deposits should be conducted. Field review of the specific project area(s) may be required. A determination of effect on specific cultural resources and a determination of the importance of the affected resources would be required. In circumstances where it is determined that potentially significant archaeological deposits would directly impacted, a limited subsurface archaeological testing program should be conducted. Such procedures should be accomplished within the context of *CEQA Guidelines* Appendix K.
2. In circumstances where intact, important archaeological deposits would be disturbed or destroyed, a pre-construction data recovery program should be conducted. This measure would be appropriate if the potential significance of the deposits has been made and the site(s) could not be avoided by redesign or relocation of the project.

Data recovery programs of this nature should be undertaken by a qualified professional archaeologist, knowledgeable in the prehistory of the region. The specific nature and extent of the excavations should be developed in response to the circumstances of potential impacts, in accordance with prevailing professional standards and within the context of a detailed research design.

Of importance in conducting archaeological excavations is the participation of the Native American community. The California Native American Heritage Commission

(NAHC) should be consulted during all phases of subsurface archaeological investigations to identify individuals and groups that may have specific project-related concerns. Procedures should comply with procedures set forth by the Native American Heritage Commission regarding impacts to Native American burial remains. All data recovery programs should result in comprehensive technical reports that meet prevailing professional standards.

3. In the event that unknown subsurface archaeological deposits or features are encountered anywhere in the Coliseum Redevelopment Area, work in the immediate vicinity of the find should be halted, a professional archaeologist consulted and an appropriate course of action developed in consultation with the State Historic Preservation Officer and the City. All such procedures should be conducted within the context of *CEQA Guidelines* Appendix K cultural resources management requirements.

By implementing these mitigation measures for all development projects within the study area, the possibilities of destroying information important to the study of Bay Area prehistory would be averted by extracting scientific data from the resource(s) prior to disturbance and destruction. These measures would lessen potentially significant impacts to archaeological resources, found to be important by *CEQA* criteria, to a less-than-significant level.

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4.11.2 Architectural and Historic Resources

Environmental Setting

The Redevelopment Plan is described in Chapter 3.0 Project Description. The Coliseum Redevelopment area would encompass 6,500 acres. There are 10 target areas identified for analysis in the EIR, which are shown on Figure 3.3. They are: 1) Fruitvale BART Station, 2) Elmwood Avenue, 3) Tidewater Avenue, 4) East Bay MUD / Edgewater Sites, 5) Railroad Avenue, 6) Pippin-Pearmain, 7) 81st Avenue, 8) Coliseum BART Station, 9) 98th Avenue Industrial, and 10) Airport Gateway.

Methodology

Historical and architectural resources are recognized by programs at the federal, state and local levels. At each level designated properties may be individual buildings, building groups

or complexes, districts or other properties or sites. Each program is guided by a procedural and regulatory framework.

At the federal level the Secretary of the Interior maintains the National Register of Historic Places (NRHP) which is the official listing of the U.S. Government of properties that have architectural, historical or cultural significance at the national, state or local level. In addition to formally listing properties on the National Register of Historic Places, the Department of Interior may make determinations regarding properties that are determined eligible for listing to the National Register of Historic Places. A project determined to be a federal undertaking is subject to the provisions of Section 106 of the *National Historic Preservation Act* and its implementing regulations found at 36 CFR 800. This is a consultation and compliance process that identifies listed, eligible, or potentially eligible properties and seeks to avoid or reduce impacts to historic properties. There are no properties within the 10 target areas listed or determined to be eligible for inclusion on the National Register of Historic Places.

At the state level the Director of the Department of Parks and Recreation maintains a list of *California Historical Landmarks*, which are properties of statewide significance. Such designation is for recognition only and confers no protection or other regulatory proscriptions for the listed properties. There are no designated State Historical Landmarks within the ten target areas.

Also at the state level, the State Historic Preservation Officer (SHPO) heads the State Office of Historic Preservation within the Department of Parks and Recreation. The SHPO confers with both local and federal officials concerning federal undertakings which may affect National Register of Historic Places listed or eligible properties. The SHPO also maintains an inventory of architecturally and historically significant properties that have been identified by local agencies and documented on state forms.

At the local level pursuant to the *Zoning Regulations*, the City of Oakland designates City Landmarks and "S-7 Preservation Combining Zones," maintains a Preservation Study List of properties warranting preservation, and conducts surveys of possible historical and architectural resources. Projects which may demolish, remove, or affect exterior appearance (and sometimes important interior features) of City Landmarks require Design Review

approval by the Director of City Planning. Projects within an S-7 Zone also require Design Review approval by the Director of City Planning for construction, alteration, demolition, or removal of structures and facilities. In both cases, the Director of City Planning must submit the proposal to the Landmarks Preservation Advisory Board (LPAB) for its recommendation. The issuance of a demolition permit may be deferred for up to 240 days for a City Landmark or a property within an S-7 Zone, and up to 60 days for properties on the Preservation Study List, to allow the interested parties to reach an agreement that may avoid demolition. No properties within the target areas are included on the Preservation Study List (updated April 14, 1994), or the Landmarks and Preservation District lists (updated September 24, 1993).

Surveys conducted by the City to identify historical or architectural resources include the Oakland Cultural Heritage Survey (OCHS) and the Citywide Preliminary Historical and Architectural Inventory (Citywide Preliminary Survey). Both surveys are projects of the Office of Planning and Building.

The Oakland Cultural Heritage Survey has conducted a first phase survey of 21 relatively small areas scattered across the City, as well as comprehensive surveys of the Central District, the Adams Point Neighborhood, West Oakland, and the Fruitvale Commercial Area. A survey of unreinforced masonry buildings throughout the City is currently underway. State Forms have been prepared for all identified significant buildings, districts and other properties within these survey areas. Fruitvale Commercial Area covers much of the Fruitvale BART Station Target Area of the Coliseum Redevelopment Area and identifies the historic significance, eligibility for listing in the National Register of Historic Places and City Landmark status. It also notes whether a property is part of a potential local historic district.

The Citywide Preliminary Survey, conducted in 1986, was a windshield survey which preliminarily identified and evaluated pre-1946 properties according to their architectural, aesthetic, historical, or other visible cultural value. It also identified properties (including buildings, building groups, and districts) that appear to be candidates for the National Register for Historic Places, for City Landmark designation, or for an S-7 Zone. The Citywide Preliminary Survey did not comprehensively cover all of the target areas of the redevelopment plan and it is possible that the Citywide Survey's preliminary ratings will change after historical research and evaluation.

Over the 40-year life of the proposed Coliseum Area Redevelopment Plan it is likely that properties within the program area may be listed on or determined eligible for the National Register of Historic Places, that additional properties may be designated as City Landmarks, and that S-7 Zones may be mapped in the area. Such changes in status should be considered when activity or proposals under the proposed Redevelopment Plan are undertaken or reviewed.

Baseline data acquisition for architectural and historic resources was conducted for this EIR by Mark Brack, architectural historian, (Brack, 1994). A windshield survey was conducted on every street in the 10 target areas and along the East 14th Street Corridor, the areas where most development is expected to occur under the Redevelopment Plan, in order to identify properties that might be eligible for inclusion on the National Register of Historic Places. General neighborhood descriptions were also completed. No photographs or detailed architectural descriptions were required for this survey.

Pertinent records maintained by the Oakland Cultural Heritage Survey, a division of the Oakland Office of Planning and Building and the Oakland Landmarks Preservation Advisory Board were reviewed to determine if any buildings in the 10 target areas and along the East 14th Street corridor had been evaluated for their historic value. The Oakland Cultural Heritage Survey maintains a variety of files. Files utilized for the current study include the Citywide Preliminary Architectural and Historical Survey (a windshield survey conducted between 1986 and 1987) and the Fruitvale Neighborhood Commercial Revitalization Area Survey (NCR), a formal and intensive study that undertook research on individual buildings within a commercial neighborhood centered on Fruitvale Avenue and East 14th Street.

The Oakland Cultural Heritage Survey is currently completing a formal survey of unreinforced masonry buildings within the city. No properties within the target areas are currently included on the National Register of Historical Places, the Oakland City Landmarks list, the Historic American Buildings Survey (HABS), or the Historic Architectural and Engineering Record (HAER). However, a number of properties have been identified by city surveys and the present survey as potentially eligible for listing on the National Register of Historic Places or as municipal landmarks. These properties are listed in the sections describing what was found in each target area.

Summary of Findings

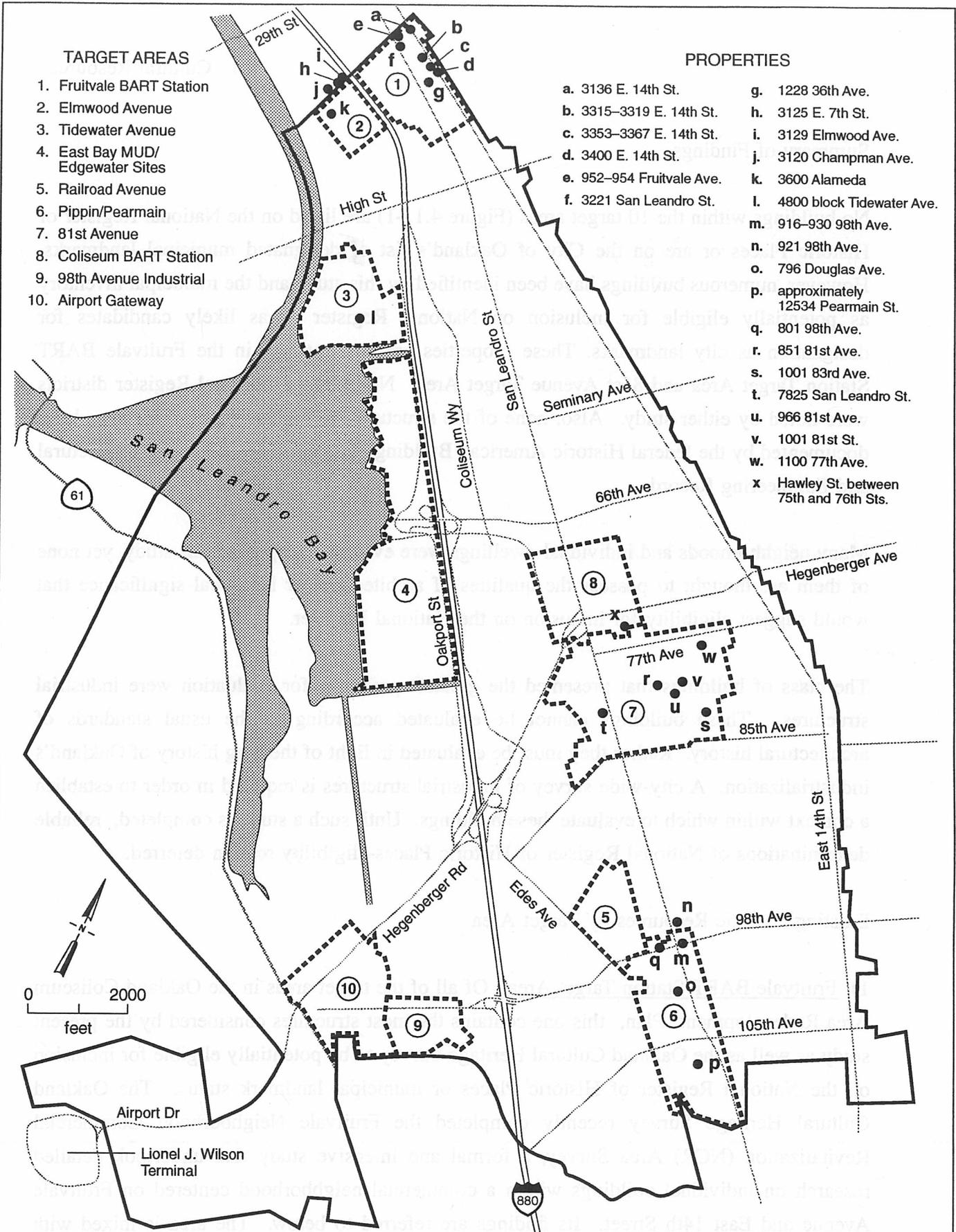
No buildings within the 10 target areas (Figure 4.11-1) are listed on the National Register of Historic Places or are on the City of Oakland's list of designated municipal landmarks. However, numerous buildings have been identified by this study and the municipal inventory as potentially eligible for inclusion on National Register or as likely candidates for designation as city landmarks. These properties are concentrated in the Fruitvale BART Station Target Area and 81st Avenue Target Area. No potential National Register districts were noted by either study. Also, none of the structures within the target areas have been documented by the federal Historic American Buildings Survey or the Historic Architectural and Engineering Record.

Many neighborhoods and individual dwellings were evaluated as part of this study, yet none of them are thought to possess the qualities of architectural or historical significance that would suggest eligibility for inclusion on the National Register.

The class of buildings that presented the greatest problems for evaluation were industrial structures. These buildings cannot be evaluated according to the usual standards of architectural history. Rather they must be evaluated in light of the long history of Oakland's industrialization. A city-wide survey of industrial structures is required in order to establish a context within which to evaluate these buildings. Until such a study is completed, reliable determinations of National Register of Historic Places-eligibility remain deferred.

Existing Historic Resources by Target Area

1) Fruitvale BART Station Target Area. Of all of the target areas in the Oakland Coliseum Area Redevelopment Plan, this one contains the most structures considered by the present study as well as the Oakland Cultural Heritage Survey to be potentially eligible for inclusion on the National Register of Historic Places or municipal landmark status. The Oakland Cultural Heritage Survey recently completed the Fruitvale Neighborhood Commercial Revitalization (NCR) Area Survey, a formal and intensive study that undertook detailed research on individual buildings within a commercial neighborhood centered on Fruitvale Avenue and East 14th Street. Its findings are referred to below. The area is mixed with



TARGET AREAS

1. Fruitvale BART Station
2. Elmwood Avenue
3. Tidewater Avenue
4. East Bay MUD/Edgewater Sites
5. Railroad Avenue
6. Pippin/Pearmain
7. 81st Avenue
8. Coliseum BART Station
9. 98th Avenue Industrial
10. Airport Gateway

PROPERTIES

- | | |
|---------------------------|--|
| a. 3136 E. 14th St. | g. 1228 36th Ave. |
| b. 3315-3319 E. 14th St. | h. 3125 E. 7th St. |
| c. 3353-3367 E. 14th St. | i. 3129 Elmwood Ave. |
| d. 3400 E. 14th St. | j. 3120 Champman Ave. |
| e. 952-954 Fruitvale Ave. | k. 3600 Alameda |
| f. 3221 San Leandro St. | l. 4800 block Tidewater Ave. |
| | m. 916-930 98th Ave. |
| | n. 921 98th Ave. |
| | o. 796 Douglas Ave. |
| | p. approximately 12534 Pearmain St. |
| | q. 801 98th Ave. |
| | r. 851 81st Ave. |
| | s. 1001 83rd Ave. |
| | t. 7825 San Leandro St. |
| | u. 966 81st Ave. |
| | v. 1001 81st St. |
| | w. 1100 77th Ave. |
| | x. Hawley St. between 75th and 76th Sts. |

Project No. 93C0508A	Coliseum Area Redevelopment Plan	PROPERTIES OF SPECIAL CONCERN	Figure 4.11-1
Woodward-Clyde Consultants			

commercial structures concentrated along East 14th Street and Fruitvale Avenue, a BART Station in the center of the area, and generally modest residential properties comprising the remainder. Some relatively small, light-industrial facilities can also be found throughout the area, and Dewey High School (c. 1930s) is also located in the area. The residential areas are mixed with houses dating from the late-nineteenth century through recent times and display the Craftsman, Colonial Revival, Queen Anne, and Mission Revival styles of design. Many of these dwellings display numerous alterations and do not appear to comprise a potential National Register Historic District. The Fruitvale Avenue / East 14th Street commercial area has a relatively large concentration of early 20th-century commercial buildings and has been rated an area of secondary importance (ASI) by the Fruitvale NCR Area Survey, which signifies that it is an area that does not appear to be eligible for inclusion on the National Register of Historic Places, but may warrant local designation as a preservation zone. The current study concurs with the city's assessment that the area is not a likely candidate for inclusion on the National Register of Historic Places due to a loss of historic integrity in the district, but several buildings may be individually eligible for inclusion (see below).

Properties of Special Concern within the Fruitvale Commercial District Area of Secondary Importance include:

3136 East 14th Street, two-story Classical Revival bank built in 1923. The Fruitvale NCR Area Survey gave the structure a classification of "3S" which signifies that the building is probably eligible for inclusion on the National Register. The present survey concurs with that finding based on the building's architectural qualities and associations with the commercial development of the community.

3315 - 19 East 14th Street. This two-story commercial building was constructed in 1908 and still maintains much of its historical appearance including its bay windows on the second floor. The Fruitvale NCR Area Survey rated the structure a classification of "4S3" which signifies that the building might be eligible for inclusion on the National Register of Historic Places if additional contextual information is provided. The present survey concurs with that finding based on the building's architectural qualities and associations with the commercial development of the community.

3353 - 3367 East 14th Street, "Fruitvale Masonic Temple." The Fruitvale NCR Area Survey rated the Fruitvale Masonic Temple a "3S" which signifies that the building is probably eligible for inclusion on the National Register. The ground floor of the two-story building is almost completely altered and the present survey indicates the building might not be found to be eligible for the National Register due to a loss of integrity, especially if the interior of the upper story is substantially altered.

3400 East 14th Street, formerly the "American Bank Building," a relatively beautiful, two-story Renaissance Revival bank built in 1922 that remains in a fine state of preservation. The Fruitvale NCR Area Survey rated the structure a classification of "3S" which signifies that the building is probably eligible for inclusion on the National Register of Historical Places. The current survey concurs with that finding based on the building's architectural qualities and associations with the commercial development of the community.

Table 4.11-1 lists properties which may be ineligible for inclusion on the National Register, but are identified by the Oakland Cultural Heritage Survey and the Fruitvale NCR Area Survey as possible candidates for city landmark status or potentially contributing to the local Fruitvale Historic District Area of Secondary Importance.

Properties of Special Concern Outside the Fruitvale Commercial Area of Secondary Importance include:

952 - 54 Fruitvale Avenue, A one-story Mission Revival building clad in stucco. The Fruitvale NCR Area Survey considered the building to be potentially eligible for the National Register if alterations to the building are reversed. The present survey indicates that the building is probably ineligible for the National Register because of a loss of historic integrity and the presence of far superior examples of the Mission Revival in Oakland and neighboring communities.

3221 San Leandro Street, "Fruitvale Hotel," 1894-5. This two-story wood-frame Italianate Hotel has been given a rating of "3S" by the Fruitvale NCR Area Survey signifying its probable eligibility for inclusion on the National Register. However, the increasingly derelict condition of the building leads the current survey to question if the structure has sufficiently

TABLE 4.11-1

**POSSIBLE CANDIDATE PROPERTIES FOR CITY LANDMARK STATUS
OR THE FRUITVALE DISTRICT AREA OF SECONDARY IMPORTANCE**

1200 Fruitvale Avenue	3280 - 84 East 14th Street
1210 Fruitvale Avenue	3330 East 14th Street
1218 Fruitvale Avenue	3301 - 05 East 14th Street
1226 Fruitvale Avenue	3320 - 24 East 14th Street
1230 -32 Fruitvale Avenue	3323 - 33 East 14th Street
1301 - 5 Fruitvale Avenue	3328 - 32 East 14th Street
1307 - 11 Fruitvale Avenue	3334 - 44 East 14th Street
1315 - 19 Fruitvale Avenue	3339 - 47 East 14th Street
1324 Fruitvale Avenue	3401 - 07 East 14th Street
1328 - 34 Fruitvale Avenue	3416 - 18 East 14th Street
3201 - 11 East 14th Street	3419 East 14th Street
3204 East 14th Street	3420 - 22 East 14th Street
3254 - 58 East 14th Street	3428 - 32 East 14th Street
3263 East 14th Street	3431 - 33 East 14th Street
3264 - 66 East 14th Street	3439 - 45 East 14th Street
3270 - 78 East 14th Street	3451 - 57 East 14th Street
3271 - 73 East 14th Street	3458 - 64 East 14th Street
3279 -85 East 14th Street	

Source: Mark Brack, Architectural Historian, 1994.

maintained its historic integrity to qualify for listing on the National Register of Historic Places.

1228 36th Avenue, "Fruitvale Hall." A two-story Streamlined Moderne structure finished with stucco and metal windows. A citywide Preliminary Architectural and Historical Survey rated the structure a classification of "C" which signifies that the building is of "secondary importance" and probably not eligible for inclusion on the National Register of Historic Places but may be a potential city landmark. The current survey concurs with that finding but additional research is required to make a final determination.

Table 4.11-2 lists properties outside the Fruitvale Commercial District Area of Secondary Importance which may be ineligible for inclusion on the National Register of Historic Properties, but are identified by the citywide Preliminary Architectural and Historical Survey of the Fruitvale NCR Area Survey, properties of secondary importance, some of which might be possible candidates for city landmark status.

2) Elmwood Avenue Target Area. This area can be characterized as a mixed residential and industrial neighborhood. Most of the industrial properties are modest in scale and can be characterized as "light-industrial" and date from both before and after World War II. One industrial property, the Owens-Brockway factory (see discussion below) is a major industrial facility.

The residential sections of the target area are characterized by relatively simple, early-twentieth century cottages in Queen Anne, Colonial Revival and Craftsman styles. Most houses are one story above an elevated basement. Many of the dwellings are in a good state of repair. However, the houses are not architecturally distinguished from the many other early-twentieth century working and middle-class neighborhoods found in the East Bay and the neighborhood has suffered a loss of integrity due to alterations and intrusions, especially the I-80 freeway. Consequently, these dwellings would probably not be found eligible for inclusion on the National Register of Historic Places, either individually or as part of a district.

TABLE 4.11-2

**CANDIDATE CITY LANDMARK PROPERTIES OUTSIDE THE FRUITVALE
COMMERCIAL AREA OF SECONDARY IMPORTANCE**

3811 East 12th Street	1218 - 20 37th Avenue
3827 - 29 East 12th Street	1223 37th Avenue
3714 East 12th Street	1236 37th Avenue
3215 East 14th Street	1204 38th Avenue
3600 - 04 East 14th Street	1240 38th Avenue
3610 - 12 East 14th Street	945 39th Avenue
3617 East 14th Street	3335 San Leandro Street
3725 East 14th Street	3407 San Leandro Street
3729 - 29 East 14th Street	3403 San Leandro Street
3741 - 63 East 14th Street	3500 San Leandro Street
3815 - 23 East 14th Street	3501 San Leandro Street
1008 33rd Avenue	3601 San Leandro Street
1011 33rd Avenue	3607 San Leandro Street
1232 33rd Avenue	3613 San Leandro Street
1236 33rd Avenue	3701 San Leandro Street
1239 33rd Avenue	3901 San Leandro Street
912 34th Avenue	952-4 Fruitvale Avenue
1001 35th. Avenue	960 Fruitvale Avenue
904 36th Avenue	3208-10 San Leandro Street
912 36th Avenue	3308 San Leandro Street
916 36th Avenue	3312 San Leandro Street
925 37th Avenue	3326 San Leandro Street
1208 37th Avenue	3336 -38 San Leandro Street
1212 37th Avenue	3532 San Leandro Street

Source: Mark Brack, Architectural Historian, 1994

Within the target area, the City of Oakland's architectural and historical inventory has located two neighborhoods that have been given the preliminary designation of ASI, but may "warrant local designation as an S-7 Preservation Combining Zone." These two areas are the South Kennedy Tract area of secondary importance from 33rd to 35th Avenue between 9th Street and the rail line; and the 36th Avenue / East 8th Street area of secondary importance between Boehmer Street and 37th Avenue. The American Can Company area of secondary importance (a relatively large factory complex located on East 8th Street) was completely demolished while the current study was being conducted.

Properties of Special Concern:

3125 East 7th Street, "Gold Seal Plating." A relatively small, brick industrial building constructed in 1924 and 1936. A survey of unreinforced masonry structures conducted throughout the City of Oakland has found that the building is probably ineligible for the National Register of Historic Places and is of no local interest. The current preliminary survey concurs with that assessment, but further research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

3129 Elmwood Avenue, (Elmwood and Fruitvale), "Anfo Manufacturing Co." A relatively small, light-industrial plant consisting of corrugated metal and stuccoed buildings. c. 1940s. The structures are probably not eligible for inclusion on the National Register but additional research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

3120 Chapman Street, (formerly "Made-Well Manufacturing"), 1945. A light industrial building constructed of brick. A survey of unreinforced masonry structures conducted throughout the City of Oakland has found that the building is probably ineligible for the National Register of Historic Places and is of no local interest. The current preliminary survey concurs with that assessment, but further research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

3600 Alameda Avenue, The Owens-Brockway (formerly Owens-Illinois Pacific Coast) plant and Owens-Corning factory complex, is a relatively large multi-unit factory complex at the

corner of Fruitvale Avenue and Alameda Avenue, near the tidal channel. Parts of the complex date to 1936 including a gabled, brick structure with large arched openings. Other parts of the complex include multi-story buildings clad in corrugated metal and concrete smoke stacks. Numerous parts of the complex date from after World War II. The citywide survey of historic properties ranked the buildings as a B+, signifying that it is probably of major importance. The current study indicates the scale and appearance of the complex suggests it may in fact be eligible for the National Register of Historic Places. Further research into the role of the plant in the industrial development of the City is necessary to make a more thorough evaluation.

3) Tidewater Avenue Target Area. This target area is characterized by post- War II, light-industrial and warehouse development, mostly of concrete tilt-up construction. Much vacant land in the area is given over to the storage of shipping containers. A few, architecturally-undistinguished buildings dating from the prewar era are also found throughout the area.

Properties of Special Concern:

4800 block of Tidewater Avenue, "Frick-Gallagher Manufacturing Co.", c. 1920s - 1940s. The site includes wooden lumber mill structures and a conical, metal sawdust incinerator like those that were once all over the Pacific Northwest Coast. Additional research into the role of the facility in the industrial development of the city is necessary to make a more thorough evaluation of the buildings' eligibility for inclusion on the National Register of Historic Places.

4) East Bay MUD / Edgewater Target Area. The entire area consists of post World War II buildings interspersed with open land. The buildings are generally one-and two-story offices, warehouses and light industrial buildings, often of tilt-slab construction. The Unisys office tower (c. 1980) visually dominates the area. None of the structures in this target area are considered to be eligible for inclusion on the National Register of Historical Places.

There are no Properties of Special Concern within the East Bay MUD / Edgewater Target Area.

5) Railroad Avenue Target Area. The residential area is largely characterized by modest, one-story and two-story early-20th century houses, mostly Craftsman bungalows with a few Queen Anne cottages. The area also contains some post-war houses and two-story apartments that appear to date to the 1960s and 1970s. There are some unremarkable light-industrial structures near the railroad line that appear to date from the post-war period. Some prewar commercial and public buildings (including a church and a library) are also in the area. None of the structures in this target area is architecturally significant and it is unlikely that individually or collectively, they would be eligible for inclusion on the National Register of Historic Places under that criteria.

There are no Properties of Special Concern within the Railroad Avenue Target Area.

6) Pippin/Pearmain Target Area. This target area consists of modest, early-twentieth century houses interspersed among industrial properties. The houses are generally modest craftsman bungalows, however, some simple, post-war houses can also be found. Many of the houses have been altered substantially over time. None of the dwellings in this target area is architecturally significant and it is unlikely that individually or collectively, they would be eligible for inclusion on the National Register of Historic Places under that criteria.

Most of the industrial development has occurred since World War II; however, prewar industrial sites are also found (see discussion below). The industrial properties are usually home to small manufacturers with buildings of corrugated metal and/or concrete.

Properties of Special Concern:

916 - 930 98th Avenue, "Granny Goose" factory (formerly Barr Foods Inc.). Begun in 1946, this is a relatively large manufacturing complex with reinforced concrete and brick sections. Simple Spanish Colonial Revival and Streamline Moderne details are found on some parts of the complex. An impressive, post war office building, (c. 1960) is on 98th Avenue. The facility is less than 50 years old and thus not eligible for inclusion on the National Register of Historic Places at this time.

921 98th Avenue, "Fleishman's Yeast," formerly "Standard Brands of California." This large industrial complex was begun in 1934 and also features post-war additions. The oldest section facing 98th Avenue features Spanish Colonial Revival details. Other features include a concrete smokestack, water towers and steel tanks. The citywide Preliminary Survey rated the building a D/C3 signifying a property of secondary or minor importance. However, the current study believes the scale and appearance suggests the complex may in fact be eligible for the National Register of Historic Places. Further research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

796 Douglas Avenue, "Stonehurst Iron Works." Large, corrugated metal industrial building, c. 1930 - 1940. The building may currently be abandoned. The structure is probably ineligible for inclusion on the National Register of Historic Places, but additional research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

No visible address, (approximately 12534 Pearmain). Reinforced concrete factory with a classical pedimented form, c. 1920s - 1930s. The structure is probably not eligible for inclusion on the National Register of Historic Places, but additional research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

801 98th Avenue, "Custom Lab Supply." At the rear of the large post-World War II building is a brick warehouse structure built in 1923 that was formerly the Nielson/Elmhurst Packing Co. cannery. The building has probably lost its historic integrity and was given a survey rating of ES meaning the building was of no particular interest, but additional research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

7) 81st Avenue Target Area. The target area is largely industrial, much of it is relatively recent. However, there are some potentially significant pre-World War II industrial plants (see discussion below). These industrial facilities range from the modest to the enormous. A number of these industrial properties no longer appear to be occupied and vacant land can be found in the area. Due to a relatively high proportion of post-war structures, it is unlikely

that a National Register of Historic Places district of several unrelated properties could be identified. Residential properties can also be found on the eastern side of the target area. The houses are generally modest craftsman bungalows; however, some 1920s Period Revival and post-World War II houses can also be found. None of the dwellings in this target area are architecturally important and it is unlikely that individually or collectively, they would be eligible for inclusion on the National Register of Historic Places under that criteria. Also in the target area is a school and a public housing project, c. 1970.

Properties of Special Concern:

851 81st Avenue, "Sunshine Bakery" factory formerly the "Loose-Wiles Biscuit Co.," a relatively large industrial building that appears to be built of concrete, and features large expanses of glass. The structure was erected in 1940 with an addition in 1946. The entrance wing features simple Art Deco details. A neon sign is atop the factory. The citywide Preliminary Survey rated the buildings a D/C3 signifying the building was of secondary or minor importance. However, due to the scale and appearance of the complex, it may in fact be eligible for the National Register. Further research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

1001 83rd Avenue, Merlino & Sons. "Merlino -- Alita Brand Macaroni," a two-story, concrete, light-industrial building with metal-sash windows, c. 1940. The structure is probably not eligible for inclusion on the National Register of Historic Places, but additional research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

7825 San Leandro Street, "A B & I," a large scrap-metal processing facility with a post-war office on San Leandro Street and what may be prewar industrial features in the rear, including a corrugated metal building. The facility is probably not eligible for inclusion on the National Register of Historic Places, but additional research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

966 81st Avenue, formerly the "Blue Bird Potato Chip Co.," built in 1931. A relatively small, brick, light-industrial building. The building now appears to be abandoned. A survey

of unreinforced masonry structures conducted throughout the city of Oakland has found that the building is probably ineligible for the National Register of Historic Places, but could be a potential city landmark. The structure is unlikely to be eligible for inclusion on the National Register of Historic Places, but further research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

1001 81st Avenue, formerly “Illinois- California Wire” and “PeterPaul - Saylor Co.” A one-story, brick and concrete, light-industrial building constructed in 1924, with additions in 1926, 1945 and the post-war period. A city survey rated the building a D3 signifying the building is of minor importance. The current preliminary survey concurs in that evaluation but further research is necessary to make a more thorough evaluation of the historic value of the structure.

1100 77th Avenue, “Safeway Soap Plant,” formerly the “Victor Talking Machine Co.” and “Parr Soap Plant.” Construction commenced in 1923-1924 and additions were made in 1943 and the post-war period. In this complex of industrial structures, the most notable element is a relatively handsome, two-story industrial building with Renaissance Revival motifs executed in buff-colored brick and terra cotta. Other buildings on the site are more utilitarian in appearance, including steel tanks and multi-story concrete and corrugated metal clad structures. The scale and detailing of the plant suggests that it may be eligible for inclusion on the National Register of Historic Places. Further research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

8) Coliseum Target Area. This target area is mixed and generally consists of: 1) modest, early and mid-twentieth century houses on the north and east side of the target area, including a relatively large, post-war public housing project on 69th Avenue; 2) the BART Station in the center; and 3) industrial structures (mostly post-World War II) on the south and west sides of the area.

The houses in the area are generally modest craftsman bungalows; however, some 1920s Period Revival and post-World War II houses can also be found. None of the dwellings in this target area are architecturally important and it is unlikely that individually or collectively, they would be eligible for inclusion on the National Register of Historical Places under that

criteria. None of the dwellings in this target area (many of which have been altered over time) have been identified in the city survey as architecturally significant. It is unlikely that individually or collectively, they would be eligible for inclusion on the National Register of Historical Places under that criteria. Likewise, the industrial facilities in the area do not appear to form a National Register eligible district. The most dramatic feature of the target area is Hegenberger Road which is an elevated viaduct through much of the target area.

Properties of Special Concern include:

No visible address. “McDonough Steel” on Hawley, between 75th and 76th Avenues: one and two-story factories clad in metal frames, c. 1930s - 1950s. The structure is probably ineligible for inclusion on the National Register of Historical Places, but further research into the role of the plant in the industrial development of the city is necessary to make a more thorough evaluation.

9) 98th Avenue Target Area. This target area is entirely post-war in its development. Some of the scattered, one-story commercial structures are related to the nearby airport, particularly long-term parking lots. A recent office park has also been constructed in the area. A tract of modest, post-World War II houses is at the eastern edge of the target area. None of the structures in the area are considered to be eligible for inclusion on the National Register of Historic Places.

There are no Properties of Special Concern within the 98th Avenue Target Area.

10) Airport Gateway Target Area. The entire area consists of post- World War II buildings most of which appear to date after 1970. The area is characterized by offices, light-industrial buildings, hotels and motels, commercial buildings and parking lots for long-term parking for airport patrons. None of the structures in the area is considered to be eligible for inclusion on the National Register.

There are no Properties of Special Concern within the Airport Gateway Target Area.

11) East 14th Street Corridor. In addition to the target areas described above, on June 22, 1994 a preliminary windshield survey of East 14th Street was conducted to identify properties outside of the target areas (remainder area) that may warrant further evaluation. The properties listed below were compiled without reference to the records maintained by the Oakland Cultural Heritage Survey. The purpose of conducting this survey is due to the 300 housing units that are anticipated to be constructed along this corridor, outside of the target areas. East 14th Street can be characterized as a long commercial boulevard with buildings dating from before the turn of the century to the present time. Although modest commercial activities dominate the street, residential and industrial properties are also present.

Corner of 45th Avenue and East 14th Street. Now the "New Jerusalem Pentecostal Temple", the building appears to be an early-20th century Classical Revival bank.

5019 East 14th Street, an intact, two-story wood-frame building appearing to date to the 1890s. Original commercial storefronts on the ground floor, residential above with oriel windows.

5441 East 14th Street, General Electric plant, c. 1925. This is a brick office building with Classical Revival details and attached factory.

Factory, c. 1920, in the 5600 block on the west side of East 14th Street. This is a factory building with a facade of simple concrete arches in the manner of Southern California architect Irving Gill.

5755 East 14th Street, the "Mutual Building," a beautifully detailed complex of brick and terra cotta in the Spanish Colonial Revival style of design, c. 1925. May have originally been a factory with offices on East 14th Street. The most prominent element of the building is an ornate tower that can be seen from many blocks.

East 14th Street and 66th Avenue. Havenscourt Junior High School is a Depression-era school, c. 1935.

East 14th Street and 66th Avenue. This is a fairly coherent and intact complex of relatively small commercial buildings from the early and mid-20th century.

East side of the 8800 block of East 14th Street. This is an Art Deco theater, c. 1935, now a "Food King" store.

9337 East 14th Street, a Mission Revival structure, c. 1920.

Corner of East 14th Street and 94th Avenue. This is a Mediterranean Revival Bank, c. 1920.

Significance Criteria

Appendix G of the *CEQA Guidelines* states that "a project will normally have a significant on the environment if it will...disrupt or adversely affect a prehistoric or historic archaeological site or property of historic or cultural significance to a community or ethnic group or social group..."

An important cultural resource is defined in Appendix K of the *CEQA Guidelines* as one which is associated with an event or person of recognized significance in California or American history, or recognized scientific importance in prehistory; can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential questions; has a special quality such as eldest, best example, largest or last surviving example of its kind; is at least 100 years old and possesses substantial stratigraphic integrity; or involves relatively important research questions that historical research has shown can be answered only with archaeological methods.

At the Federal level cultural resources are evaluated for their significance through the provisions of the process set forth in Section 106 of the *National Historic Preservation Act* and its implementing regulations found at 36 CFR 800.

For purposes of this analysis, potentially significant impacts on historic resources are considered present when the historic character and/or architectural integrity of a resource that is considered significant by either federal, state or local standards, e.g., a historic resource is

listed or considered eligible for inclusion on the National Register of Historic Places, or is listed or a candidate for a state or local listing. Potentially significant impacts are those which diminish the historic character and/or architectural integrity of a resource as a result of development projects induced by the implementation of the proposed Coliseum Area Redevelopment Plan. The historic character and/or architectural integrity of a resource is considered to be inclusive of all the visual qualities that establish its links to its historic associations, including architectural style and the historic uses of the land, structures and setting. On a parcel-specific basis potentially significant environmental impacts are considered to be present when a proposed development or redevelopment project:

- Represents a change from the historic use of a structure or property; or,
- Encourages an increase in development densities; or,
- Permits alterations to the historic character of land uses or structures (historic fabric).

Impacts

Direct Impacts

New development within the study area that could be implemented due to the proposed Coliseum Area Redevelopment Plan could adversely affect potential and identified historic buildings or historic districts within the study area.

Increased employment and expansion or relocation of existing businesses and the development of individual projects within the proposed Coliseum Redevelopment Area could require demolition, relocation, alteration, or adaptive re-use of identified historic properties. The level of disruption would be dependent on the nature of the individual project and the planned changes to the identified historic property. Demolition of an identified historic property would result in a significant unavoidable impact that could not be mitigated. Relocation of a identified historic property would result in a potentially significant adverse impact that could be reduced to a less-than-significant level through mitigation measures identified in this EIR. Alteration or adaptive re-use of a identified historic property could result in an adverse or a beneficial impact depending upon individual project design. If the

4.11 Cultural Resources

proposed rehabilitation activities were to restore a property that has been degraded by past alterations to its previous appearance, the effects of the individual project would be beneficial. If, on the other hand, proposed alteration or adaptive re-use were to result in changes to a property's appearance that diminish the historic or architectural integrity of the property, the effect of the individual project would be adverse and potentially significant.

Construction activities directly related to the Redevelopment Plan may affect identified historical or architectural resources within the Coliseum Redevelopment Area, especially within the Fruitvale Commercial Area of Secondary Importance where many of these resources are located. The extent and nature of the impact on historic resources is dependent on individual project design, as mentioned above. In addition, the City of Oakland has proposed reduced project review time and expedited permit review and processing, which may jeopardize the existing City and State procedures that serve to protect historic and architectural resources.

In addition, development within the Coliseum Redevelopment Area that could be induced by the Redevelopment Plan could adversely affect unidentified historic resources within the study area. There are locations within the target areas that are outside of the area covered by the Citywide Preliminary Survey. Therefore, it is possible, although unlikely, that some of the target areas could be developed or redeveloped under the proposed Redevelopment Plan may contain historical or architectural resources that have not yet been identified. In addition, the remainder area (outside of the target areas) could contain historical architectural resources that have not been identified.

Therefore, development resulting from implementation of the proposed Redevelopment Plan could result in a potentially significant effect on historic and architectural resources.

Indirect Impacts

Development of individual projects within the Coliseum Redevelopment Area target areas could compromise the historic integrity of adjacent, identified cultural resources.

The development of individual projects within the target areas and the remainder area, including along the East 14th Street corridor, could change the historic context and compromise the historic integrity of adjacent historic properties by introducing elements that would not be sympathetic with the property's historic context. If structures adjacent to any identified historic resources would be demolished, the removal of these structures could also jeopardize the integrity of those historical resources.

Development of individual projects within the Coliseum Redevelopment Area target areas, or the remaining area, including along the East 14th Street corridor, could compromise the historic integrity of adjacent, unidentified historic or architectural resources.

Development resulting from implementation of the proposed Redevelopment Plan could result in a potentially significant effect on historic and architectural resources in the vicinity of such development within the study area.

Mitigation Measures

1. Direct Impacts

- a. Prior to development on any parcel within the Coliseum Redevelopment Area, that is identified as containing a potentially important historical structure, the individual project applicant should prepare and present to the Director of City Planning a historic resources evaluation for the proposed project site, which should include consultation with the State Office of Historic Preservation, the Oakland Cultural Heritage Survey, and the Landmarks Preservation Advisory Board.

Prior to major development that is not within the area covered by the Citywide Preliminary Survey, the individual project developer should have a survey of potential historic resources conducted for the proposed project site, which should include a site walk-over and assessment by a historic resources expert determined to have suitable qualifications by the City of Oakland Office of Planning and Building.

Development is defined here as:

- Changes to building uses and/or changes in land use or activity;
- Construction of new buildings;
- Exterior alterations to existing buildings;
- Demolition; or
- An increase in development intensity on a parcel.

- b. The Office of Planning and Building should be consulted prior to any construction, rehabilitation, or infrastructure improvement activities to determine whether any designated or potential architectural or historical resources are located on or near the site. The historic resources evaluation should be reviewed by the Office of Planning and Building at this time. If there are no such resources, the activity may proceed. If this survey and evaluation identifies historic resources on a parcel, mitigation measures identified in this Mitigation Section should be implemented, as appropriate.

If the activity would affect a City Landmark or would be within an S-7 Zone, Design Review is required under the Zoning Regulations. If the activity would affect a property on the Preservation Study List or one which appears to be for City Landmark designation and/or inclusion in an S-7 Zone, the Planning Director should consult with the Landmarks Preservation Advisory Board and the City Planning Commission to determine whether those bodies wish to initiate formal designation and/or rezoning. If the proposed activity involves demolition of a property that is a City Landmark, is in an S-7 Zone, or is on the Preservation Study List, issuance of the demolition permit should be deferred to allow the interested parties to confer and attempt to work out a proposal that would avoid demolition.

- c. If the historic resources survey conducted by the individual project development identifies the project site as a historic property, the developer should demonstrate efforts to the City of Oakland Office of Planning and Building to avoid demolition, relocation or alteration of any identified historic properties when developing the

individual project. Redesign of an individual project may be required to successfully implement this mitigation measure, including incorporation of appropriate mitigation measures into the project design using widely accepted standards for historic resources management, such as the *Secretary of the Interior's Guidelines for Rehabilitation* and the *State Historic Building Code*.

- d. If demolition of the historic property cannot be avoided, the developer of an individual project should demonstrate efforts to relocate the historic property to a location approved by the City of Oakland Office of Planning and Building and the Landmarks Preservation Advisory Board.
- e. If relocation of the historic property is not feasible and demolition cannot be avoided, the developer of an individual project should fund and conduct the preparation of documentation in accordance with the Historic American Buildings Survey (HABS). The documentation should be reviewed and approved by the City of Oakland Office of Planning and Building and the Landmarks Preservation Advisory Board.

Implementation of these mitigation measures could reduce the level of significance of the impact on identified and on any unidentified potential historic resources. However, if an historic resource were to be demolished, the residual impact would remain significant.

2. Indirect Impacts

- a. Prior to major development within the Coliseum Redevelopment Area, the individual project applicant should prepare and present to the Director of City Planning a historic resources evaluation for the Area of Potential Effect (APE) of the proposed project site. The Area of Potential Effect for a project site should be defined as properties visible from the project site.

This historic resources evaluation should include a survey of the Area of Potential Effect conducted by a suitably qualified expert as determined by the City of Oakland Office of Planning and Building. The evaluation should also include

consultation with the State Office of Historic Preservation, the Oakland Cultural Heritage Survey, and the Landmarks Preservation Advisory Board.

Development is defined here as:

Changes to building uses and/or changes in land use or activity;

Construction of new buildings;

Exterior alterations to existing buildings;

Demolition; or

An increase in development intensity on a parcel.

- b. The Office of Planning and Building should be consulted prior to any major construction, rehabilitation, or infrastructure improvement activities to determine whether any designated or potential architectural or historical resources are located on or near the site. The historic resources evaluation should be reviewed by the Office of Planning and Building at this time. If there are no such resources, the activity may proceed. If this survey and evaluation identifies historic resources on a parcel, mitigation measures identified in this Mitigation Section should be implemented, as appropriate.

If the activity would affect a City Landmark or would be within an S-7 Zone, Design Review is required under the Zoning Regulations. If the activity would affect a property on the Preservation Study List or one which appears to be for City Landmark designation and/or inclusion in an S-7 Zone, the Planning Director should consult with the Landmarks Preservation Advisory Board and the City Planning Commission to determine whether those bodies wish to initiate Design Review.

Implementation of these mitigation measures would reduce the potentially significant indirect impacts on identified and on identified historic resources of the programs to a less-than-significant level.

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City of Oakland, Fruitvale Neighborhood Commercial Revitalization (NCR) Area Survey.

City of Oakland, Preservation Study List. This includes properties warranting preservation.

City of Oakland, *Oakland Zoning Regulation*, Ordinance 7248, revised through June 1989.

National Historic Preservation Act, Section 106 and its implementary regulations found at 36 CFR 800.

United States Department of Interior, National Park Service, *National Register of Historic Places*.

United States, Historic American Building Survey (HABS).

United States, Historic Architectural and Engineering Record (HAER).

4.12 ENERGY

4.12.1 Environmental Setting

Oil, natural gas, nuclear and hydroelectric resources supply most of the energy consumed in California. Oil provides about 54 percent of the state's energy need, while natural gas provides about 31 percent (CEC, 1990). The remaining 15 percent of the state's energy need is provided by other sources, such as nuclear, hydroelectric, and solar power. The two major uses of energy are as fuel for transportation and electricity.

The proposed Coliseum Redevelopment Area is within the electricity and natural gas service area of Pacific Gas and Electric Company (PG&E). PG&E provided over 75 billion kilowatt-hours of electricity to its customers in 1993 from various generating sources, including oil-fired power plants (33 percent), hydroelectric and nuclear plants (25 percent), and other producers, including wind farms and cogeneration facilities, among others (42 percent).⁹ The peak electrical demand in PG&E's service area was approximately 16,630 megawatts (MW). During 1991, PG&E supplied its customers with approximately 430 billion cubic feet of natural gas with a peak-day sendout of approximately 3.6 billion cubic feet (PG&E, 1992; PG&E, 1994).

Electricity customers in the City of Oakland receive electrical power from the PG&E systemwide transmission grid at seven main substations at various locations in the City. The peak summertime demand in the City for electrical power is 476 MW, and the substation system capacity is approximately 792 MW. Currently, there are no new substations planned, and the existing distribution system meets the electrical needs of the City. PG&E also operates and maintains a network of natural gas transmission and distribution lines in Oakland to meet the needs of natural gas customers there (Camera, 1992; Chew, 1994).

⁹One kilowatt-hour (kWh) electric equals roughly 10,000 British Thermal Units (Btu) depending on the conversion factor assumed for converting fossil fuel into electricity. One megawatt (MW) is one million watts. One Btu is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level.

Energy Efficiency Standards

Energy consumption of new buildings in California is regulated by the State Building Energy Efficiency Standards, embodied in Title 24 of the *California Code of Regulations*. The efficiency standards apply to new construction of both residential and non-residential buildings, and regulate energy consumed for space heating, cooling, ventilating, water heating, and lighting. The building efficiency standards are enforced through the local building permit process.

Compliance with Title 24 energy standards can be achieved through either a "performance" or a "prescriptive" approach. In the performance compliance approach, a building must be designed to consume no more energy than specified in the appropriate energy "budget." The energy budget is based on building type and size, and the climatic zone in which it is located. Under the prescriptive approach, the builder can choose from a variety of alternative "component packages" which specify energy-conservation features such as insulation, glazing, lighting shading, and water- and space-heating systems. There are also certain mandatory requirements that must be fulfilled under either compliance approach.

City of Oakland Energy Conservation Policies

The *Oakland Policy Plan* states the City's goal of promoting land use patterns and travel modes that help reduce energy consumption (Oakland, 1989). Policies for attaining this goal are as follows:

"To relieve the almost total dependency on automotive transportation within urbanized areas of the region, the City actively encourages the development of a comprehensive and totally integrated system of mass transit as well as other alternatives."

Existing Energy Consumption in the Coliseum Redevelopment Area

Substantial amounts of energy (in the form of electricity, natural gas, and gasoline/diesel fuel) are consumed in the proposed Coliseum Redevelopment Area for residential, industrial,

commercial, and transportation uses. Electricity and natural gas consumption factors for general land use categories within the proposed Coliseum Redevelopment Area are shown in Table 4.12-1.

From information contained in EIR Section 4.3. Employment, Population, and Housing, total employment in the proposed Coliseum Redevelopment Area is approximately 27,435, of which approximately 20,055 employees are in commercial positions and approximately 7,380 employees are in industrial positions. This EIR also estimates that there are approximately 9,210 residential households in the proposed study area. On the basis of these estimates and the energy consumption factors contained in Table 4.12-1, existing energy consumption in the area is approximately 325.8 million kWh, 1.7 billion cubic feet of natural gas, and 22.1 million gallons of gasoline/diesel fuel per year. In terms of British thermal units (Btus), existing annual energy consumption in the proposed study area is approximately 8,269 billion Btu.¹⁰

4.12.2 Significance Criteria

According to *CEQA Guidelines* Appendix G, a project will normally have a significant effect on the environment if it will encourage activities which result in the use of large amounts of fuel energy, use fuel or energy in a wasteful manner, or require either a major expansion of generation, transmission, or distribution facilities to serve it, or a minor expansion of such facilities that would adversely affect a sensitive environmental resource.

¹⁰A Btu is a common energy factor representing the heat required to raise a pound of water by 1 degree Fahrenheit. All energy consumption estimates given in terms of Btu represent the following at-source values: 1 kWh = 10,239 Btu; 1 gallon of gasoline = 140,000 Btu; 1 barrel of crude oil = 5,800,000 Btu; 1 cubic foot of natural gas = 1,100 Btu. The term "at-source" means that adjustments have been made in the calculation of the Btu energy equivalent to account for losses in energy that occur during generation and transmission of the various forms of energy.

TABLE 4.12-1

ENERGY CONSUMPTION FACTORS FOR USES IN THE
COLISEUM REDEVELOPMENT AREA

Type of Use	Annual Electricity Consumption Factor ^a	Annual Natural Gas Consumption Factor ^b	Annual Gasoline/ Diesel Consumption Factor ^c
Residential	6,300 kWh/unit	57,000 cubic feet/unit	980 gallons/unit
Commercial	6,800 kWh/employee	32,400 cubic feet/employee	550 gallons/employee
Industrial	17,800 kWh/employee	131,000 cubic feet/employee	280 gallons/employee

^a Derived from Pacific Gas and Electric's *Forecast of the Demand for Electricity within Pacific Gas and Electric Company's Planning Area, 1991 - 2011* (June 1991). Factors shown correspond to year 1989 but do not change appreciably from 1989 to 1994.

^b Derived from natural gas sales information in Pacific Gas and Electric Company's *Annual Report 1991* and household and commercial and industrial employment information contained in Pacific Gas and Electric's *Forecast of the Demand for Electricity within Pacific Gas and Electric Company's Planning Area, 1991 - 2011* (June 1991). Factors shown correspond to year 1989 but do not change appreciably from 1989 to 1994.

^c Consumption factors were derived based on vehicle trip operation rates, average trip lengths of 5 miles and an assumed 18 miles per gallon from the City of Oakland *Enterprise Zone EIR, 1993*. These factors are used for this analysis and are considered to be reasonable because the study area is largely a subset of the Enterprize Zone, trip lengths would actually be less (4.6 miles) for the Redevelopment Plan, and the miles per gallon rate will either remain static or increase over time.

SOURCE: Environmental Science Associates, Inc., 1992; Woodward-Clyde Consultants, 1994.

4.12.3 Impacts

Increase in Energy Consumption

The proposed Redevelopment Plan would result in development that would increase energy consumption, most of which would be derived from non-renewable energy resources. This would be an adverse, but not significant, effect of the Plan.

The proposed Redevelopment Plan would result in an increase in energy consumption as existing businesses expand their operations and new businesses emerge in response to Redevelopment Plan incentives. Energy would be consumed initially through construction of additional buildings and then through consumption of electricity, natural gas, and petroleum fuels for heating and lighting, to operate machinery, and for related employee motor vehicle trips. Most of this energy would be derived from non-renewable energy sources. The increase in energy consumption due to the Plan would be relatively negligible in the early years of the Plan and then would become more pronounced as Plan incentives begin to take effect later after partial buildout in 15 years.

The proposed Redevelopment Plan would result in the expansion of existing businesses within existing structures, expansion of existing businesses into new buildings, and the growth of new businesses into existing buildings (i.e., vacant, available space), and the growth of new businesses into new buildings. All of this development would entail varying degrees of construction activities and materials. New construction would take place as a result of Plan implementation. It is estimated that there would be 700 net new housing units, 960,000 sq. ft. net new retail space, 622,500 sq. ft. net new office space, and 512,500 sq. ft. net new industrial space. Most of this development is anticipated to occur in the 10 target areas, although 300 housing units are anticipated to be constructed along the East 14th Street corridor, a new Super K Mart Store of 250,000 sq. ft. is under construction near High Street, Alameda Avenue and I-880, and an additional 50,000 sq. ft. of industrial space is anticipated to be developed in an unspecified location(s) within the study area.

Energy used in construction of buildings and infrastructure would require both direct and indirect expenditures of energy. Direct energy is directly consumed by an activity. For

example, combustion of the refined petroleum products needed to operate construction equipment would be a direct energy expenditure. Indirect energy is consumed through sectors that provide inputs to an activity, rather than energy consumed by the activity itself. For example, the use of a steel beam in construction indirectly represents energy consumed in all of the industries that contributed to the production of the beam (e.g., energy consumed through mining and extraction of raw materials, manufacturing, and transportation). Indirect energy typically represents about three-quarters of total construction energy, while direct energy represents about one-quarter of total energy construction (Hannon, *et al*, 1978).

Factors have been developed for estimating energy consumption (direct and indirect energy) due to construction of various types of buildings. Factors for the types of new construction that could occur due to implementation of the Plan are shown in Table 4.12-2. As shown, construction is an energy-intensive activity and the amount of energy consumed for construction purposes due to Redevelopment Plan implementation could be substantial. This energy, in conjunction with other cumulative construction projects in the City of Oakland, could have a significant cumulative effect on non-renewable energy resources.

Once operational, additional land use development in the proposed Redevelopment Plan Area would increase consumption of electricity, natural gas, and gasoline/diesel fuel. New buildings constructed in the study area would be designed in accordance with Title 24 which would reduce the need for consumption of electricity and natural gas for heating, cooling, ventilating, water heating and lighting purposes. Increased employment, business and residential development in the study area would result in an increase in motor vehicle trips with a corresponding increase in the consumption of gasoline and diesel fuel.

Redevelopment Plan-related commercial, industrial and residential development would increase electricity, natural gas, and gasoline/diesel fuel consumption at roughly the rates contained in Table 4.12-1 because energy consumption factors are not expected to change substantially between 1989 and 2010. Based on the expected growth in commercial and industrial employment, and in residents due to the Redevelopment Plan, and using the energy consumption factors in Table 4.12-1, development due to the plan would increase energy consumption by approximately 47.5 million kWh of electricity, 283 million cubic feet of natural gas, and 3.2 million gallons of gasoline/diesel fuel. In terms of Btus, the

TABLE 4.12-2

ENERGY CONSUMPTION FACTORS CONSTRUCTION OF NEW BUILDINGS IN THE
PROPOSED COLISEUM REDEVELOPMENT AREA

Type of Construction	Factor ^a	Development due to the Plan ^b	Total Btu in millions
New Stores and Restaurants	940,000	960,000	902,400
New Office Buildings	1,640,000	622,500	1,020,900
New Industrial Building	970,000 ^c	512,500	497,125
Residences (900 sq. ft. per unit)	700,000 ^d	630,000	441,000
TOTAL			2,861,425

^a Total energy in Btu per square foot.

^b Development is in square feet.

^c As a conservative case, it is assumed for this analysis that all new industrial buildings would use this factor instead of the less energy intensive use of 560,000 Btu per square foot for warehouses.

^d As a conservative case, it is assumed for this analysis that all residences would be single-family instead of using the less energy intensive multi-family factors.

SOURCE: Hannon, B., *et al.*, 1978, "Energy and Labor in the Construction Sector," *Science*, 202; 837-847; Woodward-Clyde Consultants, 1994.

Redevelopment Plan would increase energy consumption in the proposed Coliseum Redevelopment Area by approximately 1,248.5 billion Btu per year, which would represent a 15-percent increase. While adverse, the 15-percent increase in operational energy consumption (including travel-related consumption) due to the Redevelopment Plan would not be considered significant for the following reasons. First, development would be infill and would be well served by transit. Redevelopment within an established urban area is energy-efficient since the redevelopment can utilize existing utility services, the transportation network, and minimize trip and travel distances. Second, the construction and use of the commercial, industrial, and residential uses implemented due to the Redevelopment Plan would have to comply with existing State and local standards for energy efficiency, especially as mandated by Title 24. Therefore, the Plan would not encourage new, inefficient or wasteful uses of energy.

Effect on PG&E Utility Infrastructure

Employment growth in the area due to the proposed Redevelopment Plan would increase the demand for electricity and natural gas provided through PG&E transmission and distribution facilities. The proposed Redevelopment Plan is in an urbanized area already served by a network of electricity and natural gas transmission and distribution facilities. There is sufficient capacity remaining for development due to the Redevelopment Plan at the existing substations (476 MW is the current peak demand and 792 MW is the current substation capacity) that serve the City of Oakland (Chew, 1994). Therefore, the plan would not be expected to require major expansion of generation, transmission, or distribution facilities and would not have a significant effect on the PG&E utility infrastructure. At the Redevelopment Plan-level, it is not possible to determine whether any minor expansion of these facilities due to a project's development under the plan would adversely affect a sensitive environmental resource. Such an impact would be addressed in subsequent Redevelopment Plan-specific environmental documents.

Consistency with City Energy-Conservation Policies

The Redevelopment Plan would encourage in-fill development which results in greater utilization of existing infrastructure rather than an extension of infrastructure into previously

undeveloped areas. Such a plan would tend to reduce the number of miles traveled for commuting and shopping purposes and would increase the feasibility of public transit opportunities, with a corresponding decrease in the consumption of gasoline/diesel fuel for transportation purposes. Also, by encouraging employment growth in the vicinity of residential areas and residential growth in the vicinity of employment areas, the plan would increase the possibilities for greater use of public transit, walking and bicycling to work. Therefore, the plan would be consistent with the City's goal of promoting land use patterns and travel modes that help reduce energy consumption. This would be a beneficial effect of the Redevelopment Plan.

4.12.4 Mitigation

All new buildings would be required to meet the standards for energy efficiency as set forth in Title 24 of the *California Code of Regulations*. These standards would reduce the possibility of wasteful energy use with respect to building heating, cooling, and lighting. The effectiveness of Title 24 energy standards is dependent upon the diligence of public works/engineering and planning and building departments in reviewing building applications.

The following measures would reduce the cumulative significant increase in energy consumption of non-renewable resources to which the Redevelopment Plan would contribute. Given the cumulative nature of this impact, these measures should be applied to all new development in the proposed Coliseum Redevelopment Area, and not just those directly associated with the Redevelopment Plan.

Identified in this EIR

Operational and Construction Energy

In addition to Title 24 requirements, the following measures would further reduce the cumulative significant increase in energy related to construction and the less-than-significant increase in the operation of commercial, industrial and residential buildings in the Coliseum Redevelopment Area.

1. To avoid unnecessary consumption of energy during construction phases of individual projects, the developer of any construction project should be required to turn off idling construction equipment when not in use where doing so would not damage the equipment;
2. Buildings should be designed to utilize solar energy to the extent possible, by ensuring solar access and by properly orienting windows. Building walls and windows should be chosen from the appropriate energy reflecting and absorbing material types for maximum energy conservation;
3. Air distribution systems in structures should be designed to cascade ventilation air from high priority areas to low priority areas before exhausting it, thereby decreasing the volume of ventilation air required;
4. Window systems should be designed and other means should be used to reduce thermal gain and loss, and thus cooling loads, during warm weather and heating loads during cold weather;
5. The total amount of concrete and asphalt paving should be minimized. These areas collect and re-radiate heat from the sun. Grass and trees, in place of paved areas, cool the air in summer, and shield structures from wind, thus reducing heating requirements in winter;
6. Light-colored architectural treatments of interior surfaces should be used to reflect more light, reducing lighting requirements and increasing apparent light. The use of skylights should also be considered which can reduce or eliminate the need for lighting. For exterior lighting, low-sodium lamps should be used which require less energy than other types of outdoor lighting;
7. Mechanical systems (i.e., HVAC, or heating, ventilating and cooling) should be controlled using a computer-controlled system for maximum efficiency;

8. Incentives should be provided for developers to investigate the potential for cogeneration technology to be applied to their industrial processes.

If these measures were required for new development within the proposed Coliseum Redevelopment Area, energy impacts from new development would not be significant because energy would not be used in a wasteful manner.

Transportation-Related Energy

No significant impacts were identified for transportation-related energy consumption. However, the following measures would further reduce these less-than-significant impacts.

1. Developers should coordinate with Alameda County (AC) Transit to ensure that development in the Coliseum Redevelopment Area is phased in with corresponding expansions of transit service. Of particular importance would be increased frequency of service to the target areas.
2. Developers and commercial tenants should implement transportation management plans which include real incentives for employees to commute by modes other than the single-occupant automobile. Such plans should include transit subsidies, information on alternative modes, parking fees, and ridesharing programs.
3. Developers and commercial tenants should provide bicycle/pedestrian facilities for their employees.

REFERENCES - Energy

Bay Area Air Quality Management District, *Guidelines for Assessing the Impacts of Projects and Plans*, revised 1987.

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4.13 PUBLIC UTILITIES

4.13.1 Water Supply

Environmental Setting

The East Bay Municipal Utility District (EBMUD) provides domestic water supply to the City of Oakland and 35 other East Bay communities. The District's water supply includes fresh and recycled water. The municipal water supply originates in the Sierra Nevada mountains, where it is initially collected and stored at the Pardee Reservoir on the Mokelumne River. The Pardee Reservoir has a capacity of about 210,000 acre-feet of water. From the Pardee Reservoir, three aqueducts carry water to the East Bay where it is treated before delivery to customers. In 1993, the District's average daily water demand was 189.2 million gallons; maximum daily demand was 287.2 million gallons (McGowan, 1994).

The Coliseum Redevelopment Area is located in the District's Central Pressure Zone. Water for this zone is treated at the Orinda Treatment Plant in Orinda and the Upper San Leandro Filter Plant in Oakland. This water is stored in the Central Reservoir and Dunsuir Reservoir which have a combined capacity of 219.5 million gallons (McGowan, 1994).

Since the 1960's, EBMUD has used recycled water to meet nonpotable water demand. In past drought years, EBMUD has continued to look for alternative sources of water supply to improve water use efficiency. Currently, the District uses approximately nine million gallons per day (mgd) of recycled water at its facilities and supplies another one mgd to five golf courses within the District, including the Galbraith Municipal Golf Course located adjacent to the Coliseum Redevelopment Area. Recycled water is drawn from either EBMUD's wastewater treatment plants or untreated water reservoirs. Treatment systems vary depending on the source water and the intended use. EBMUD currently is constructing highway irrigation and industrial re-use projects that will provide an additional 6.3 mgd of recycled water to the District by late 1994. In addition, EBMUD is preparing an implementation plan to identify projects that will provide an additional eight mgd of nonpotable water to the District. EBMUD plans to implement a reuse program including the industrial portions of the proposed Coliseum Redevelopment Area in 1998. Potential customers will be targeted based on their nonpotable water demands (McGowan, 1994).

In 1993, the City of Oakland adopted landscaping standards that promote more efficient use of water as mandated by *Assembly Bill 325*. The City's adopted landscaping standards provide guidelines for irrigation methods, landscape plant requirements, irrigation equipment, design standards and maximum lawn areas.

Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project would normally have a significant impact on a public utility if it would interfere with or substantially change demand for governmental services, or generate a need for new utility systems or require substantial alterations to such systems. For the purposes of this analysis, the proposed Redevelopment Plan would have a significant impact if it were to result in the extension of major water lines in order to serve additional new development or if implementation of the plan would increase water consumption beyond EBMUD's ability to meet the additional demand.

Impacts

By the year 2010, the proposed Redevelopment Plan is expected to result in a net gain of 700 housing units, 960,000 square feet of retail space, 622,500 square feet of office space, and 512,500 square feet of industrial space. Residents and businesses occupying these uses would consume 613,600 gallons of water per day (0.614 mgd), assuming daily water consumption factors of 260 gallons per day (gpd) per housing unit, 0.12 gpd per square foot of retail space, 0.15 gpd per square foot of office space, and 0.40 gpd per square foot of industrial space. EBMUD expects to meet demand within the Coliseum Redevelopment Area without expanding major water lines or adding central facilities such as pumping stations and reservoirs (McGowen, 1994). Therefore, additional water demand generated by development due to the Coliseum Redevelopment Plan would not have a significant impact on water service demand in the District.

Increased demand would, however, affect local delivery systems. Pipelines in the Coliseum Redevelopment Area vary in age and size. The Redevelopment Plan targets several sites for industrial and commercial uses which are currently served by eight-inch water mains that would need to be replaced with 12- and 20-inch mains to provide adequate water pressure

and fire-flow requirements to accommodate more intense development. The extent, cost, and location of on- and off-site improvements would be determined on a case-by-case basis. The cost would be funded either by developers or by EBMUD as part of routine system upgrades. As such, improvements to local delivery systems are not considered a significant impact on the environment.

Mitigation

The following measures could be implemented on a project-specific basis to reduce the less-than-significant impact of increased water demand due to implementation of the Redevelopment Plan:

1. Interior Measures

- Low flow plumbing (toilets and shower heads) should be installed in residential and commercial development.
- Pressure-reducing valves should be installed to maintain interior water pressure at 50 pounds per square inch (psi) or less.
- Drinking fountains should be equipped with self-closing valves.

2. Exterior Measures

- Low water-using plants should be used for landscaping.
- Lawn and turf area should be limited in the landscaping design of new business and residential uses.
- Efficient irrigation systems should be installed to minimize evaporation.

3. Programmatic Measures

- The City should identify existing and new businesses that could participate in the EBMUD's Water Reuse Program as part of Redevelopment Plan implementation.

REFERENCE - Water

McGowan, William, Associate Civil Engineer, EBMUD-Water Services, telephone conversation, April 4, 1994, and written communication, June 6, 1994.

4.13.2 Wastewater / Sanitary Sewer

Environmental Setting

The East Bay Municipal Utilities District (EBMUD) Special District No. 1 provides sanitary and industrial wastewater collection, treatment and disposal services to the City of Oakland. EBMUD maintains and operates a 32 mile interceptor system, a main wastewater treatment plant, 13 pumping stations, and two remote wet weather treatment plants. Water collected by EBMUD is treated at the Main Wastewater Treatment Plant and discharged through the Main Plant Outfall, located at the eastern end of the Bay Bridge, into a relatively deep channel in the San Francisco Bay. Wastewater treated at the Special District No. 1 plant meets federal and state regulations regarding wastewater quality and disposal (Harvey, 1994).

The Main Wastewater Treatment Plant has primary treatment capacity of 320 million gallons per day (mgd), and secondary treatment capacity of 168 mgd. The average daily flow at EBMUD's Main Wastewater Treatment Plant is 80 mgd. Dry weather peak flow design capacity is 120 mgd (Harvey, 1994).

The wet weather treatment capacity of the Main Wastewater Treatment Plant is 415 mgd; peak wet weather flows of 420 mgd exceed this capacity during periods of heavy rainfall. During heavy rainfall, the District's remote wet weather facilities provide storage, and solids removal and disinfection prior to discharge. The Oakport Wet Weather Treatment Plant, located within the Coliseum Redevelopment Area, is one of two wet weather storage and

treatment plants designed to eliminate wet weather overflows from District facilities (Harvey, 1994).

Wastewater in the Coliseum Redevelopment Area is collected into an EBMUD 42-inch interceptor and EBMUD Wastewater Pumping Station G. Dry weather sanitary sewage from the entire Coliseum Redevelopment Area is transported via the South Interceptor to the Main Wastewater Treatment Plant where it receives full secondary treatment before discharge (Harvey, 1994).

The City of Oakland maintains and operates the subsurface sanitary sewer system that collects wastewater from the Coliseum Redevelopment Area and transports it to EBMUD wastewater treatment facilities. The current local sanitary sewer adequately collects wastewater generated in the study area. The City of Oakland has instituted an Inflow and Infiltration Correction Program designed to reduce the incidence of wet weather overflows in the sanitary sewer system by separating storm water flows from sewage flows. This program will allow a 20 percent increase in base wastewater flow from new land use development and population growth for each sub-area within the City. In conjunction with this program, EBMUD is planning to add two new wet weather storage/treatment facilities on its South Interceptor (Wong, 1994).

The Coliseum Redevelopment Area is included in the City of Oakland's 20-year program to upgrade sanitary sewers within the City. Upgrades will include general rehabilitation, including pipe replacement, and some size upgrades (Wong, 1994).

Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project would normally have a significant impact on a public utility if it would interfere with or substantially change demand for governmental services, or generate a need for new utility systems or require substantial alterations to such systems. For the purposes of this analysis, the proposed Redevelopment Plan would have a significant impact if it required the extension of a sewer trunk line in order to serve additional new development or if the plan would increase sewage discharge more than the City of Oakland's allocated share to the EBMUD infiltration/inflow program.

Impacts

The proposed Redevelopment Plan would result in a net gain of 700 housing units, 960,000 square feet of retail space, 622,500 square feet of office space, and 512,500 square feet of industrial space. The proposed Redevelopment Plan would generate 499,000 gallons per day (0.5 mgd) of wastewater, assuming daily wastewater generation factors of 260 gallons per day (gpd) per housing unit, 0.12 gpd per square feet of retail space, 0.10 gpd per square feet of office space, and 0.25 gpd per square feet of industrial space. This would be within EBMUD capacity constrains and would not substantially limit other development in the service area, and as such, would not be a significant impact.

Wastewater flows from most of the Coliseum Redevelopment Area would be discharged into a 42-inch EBMUD interceptor that has a capacity of 15 mgd. This interceptor could absorb the increased wastewater generated by the proposed Redevelopment Plan if development would not increase wet weather flows above those identified in the City's Inflow and Infiltration Program (see discussion below). Wastewater generated by development in the southwestern portion of the Coliseum Redevelopment Area (generally the 98th Avenue Industrial and Airport Gateway Target Areas) would discharge into EBMUD Pump Station "G" which has a capacity of 1.5 mgd. This station is currently operating at full capacity and could not absorb wastewater generated by development in this portion of the Coliseum Redevelopment Area. This station would need to be upgraded by installing larger pumps, motors, piping, and electrical components so that additional flow may be accommodated (Harvey, 1994).

Increased wastewater generation would effect the local sewer collection system. The City of Oakland has reviewed estimated sewage generation for the Redevelopment Plan, including the 10 target areas. The City indicates that some sub-basins may exceed allocated capacity within the Coliseum Redevelopment Area. Allocations within sub-basins that have remaining capacity would be reallocated to basins that have reached capacity. The City states that at this plan-level of detail and analysis, it is likely that wastewater generation due to implementation of the Redevelopment Plan would be accommodated within the overall base flow increase allowance for the sub-basins within the Coliseum Redevelopment Area.

However, individual projects would need to be reviewed for specific project-level impacts (Wong, 1994).

Increased wastewater from the Coliseum Redevelopment Area would be generated incrementally over an initial 15 year buildout. This would allow the City and EBMUD to adjust wastewater collection system upgrades over time so that development could occur without adverse effects on wet weather overflows and infiltration conditions. Therefore, the proposed Redevelopment Plan would not have a significant impact on wastewater and sanitary sewer services.

Mitigation

The following measures would further reduce less-than-significant effects of the Redevelopment Plan:

1. Major developments should include the replacement or rehabilitation of the existing sanitary sewer collection system to prevent an increase in inflow and infiltration and overload from new wastewater flows.
2. The proposed Redevelopment Plan should phase and program new major development to ensure that overall wet weather flows would not exceed the allowable flows identified in the City of Oakland's Inflow and Infiltration Correction Program, and so that capacity increases would be made in areas targeted for development.
3. The proposed Redevelopment Plan should include sewer replacement or rehabilitation to improve the Coliseum Redevelopment Area sewer infrastructure and prevent wet weather overflows due to old and damaged collection systems.

Implementation of water conserving measures outlined above would also reduce wastewater generation.

REFERENCES - Wastewater / Sanitary Sewer

Harvey, Thomas, Systems Civil Engineer, EBMUD - Wastewater, written communication, June 1, 1994.

Wong, Ken, Supervising Engineer, City of Oakland Department of Public Works, telephone conversations, May 10 and June 20, 1994.

4.13.3 Solid Waste

Environmental Setting

Waste Management of Alameda County provides solid waste disposal services to approximately one million customers throughout Alameda County, including the City of Oakland. Waste Management of Alameda County collects and transports solid waste from the City of Oakland to the Davis Street Transfer Station in San Leandro. Resource recovery is available at the Davis Street Station, and includes source separated recycling of glass aluminum, paper, metal and plastic materials. At the Davis Street Station, waste is co-mingled and eventually transported by trucks to the Altamont Landfill (Johnson, 1994).

The Altamont Landfill is located northeast of Livermore, and has a total capacity of 58.9 million cubic yards with an ultimate life expectancy of approximately 90+ years. Average waste transported to the Altamont Landfill site is approximately 5,000 tons per day. Peak daily tonnage is 11,150 tons, which is within current permit conditions and regulations. The Altamont Landfill is currently a fully licensed and permitted Class III solid waste disposal facility, with additional capacity for friable asbestos and auto shredder wastes. By July 1994, the landfill is anticipated to receive a Class II permit which will meet federal regulations (Johnson, 1994).

The *Integrated Waste Management Act of 1989 (AB 939)* mandates that cities and counties divert 25 percent of solid waste from landfills by 1995, and 50 percent by 2000. Oakland has prepared a Source Reduction and Recycling Element designed to meet the mandated goal through source reduction, expanded recycling efforts, composting, and environmentally safe

waste disposal. The City of Oakland currently has a curbside residential recycling program. Four private waste removal companies contract with the City to remove recyclables. Waste Management of Alameda County collects residential recyclables in the proposed Coliseum Redevelopment Area. In addition, the City is in the process of implementing a non-mandatory commercial recycling program. The City will provide consulting services and aggressive outreach to aid businesses and commercial building owners in implementing recycling programs in the future (Estes, 1994).

Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project would normally have a significant impact on a public utility if it would interfere with or substantially change demand for governmental services, breach standards relating to or generate substantial solid waste litter, or generate a need for new utility systems or require substantial alterations to such systems. The proposed Redevelopment Plan would have significant impact if it were to generate substantial solid waste or breach governmental standards regulating solid waste generation.

Impacts

Implementation of the Redevelopment Plan would increase the demand for solid waste transportation and disposal services. The proposed Redevelopment Plan includes a residential rehabilitation program as well as target areas for new commercial/industrial businesses and construction. Some activities may generate waste that would require special handling, including friable and non-friable asbestos, toxic remediation by-products, and other construction and demolition debris (Johnson, 1994).

On-going activity new to the study area as a result of the Redevelopment plan could generate approximately 18 tons of solid waste per day, which would be serviced by existing or slightly modified service by Waste Management of Alameda County. This estimate is based on five pounds of solid waste generated per day by each of the approximate 5,000 workers and 2,100 residents that would be new to the study area. This estimate is conservative as it assumes that each worker and resident would be new to the Coliseum Redevelopment Area.

According to Waste Management of Alameda County, implementation of the Redevelopment Plan would not adversely affect solid waste collection and disposal services, nor would the Redevelopment Plan measurably affect the estimated remaining life of the Altamont Landfill site (Johnson, 1994). In addition, businesses and residents in the Coliseum Redevelopment Area would be required to comply with the provisions of the *Integrated Waste Management Act (AB 939)*, thereby further decreasing the amount of solid waste generated by the plan.

Toxic remediation within the Coliseum Redevelopment Area could require special disposal of contaminated ground water, soil, and other materials. This disposal would be regulated by law and would occur at appropriate facilities. For additional discussion and analysis of impacts, and for mitigation, see Section 4.7 Hazardous Materials, above.

The Redevelopment Plan would have no significant effects on the environment regarding solid generation or standards.

Mitigation

No significant impacts on solid waste disposal were identified due to the proposed Redevelopment Plan. However, the following measure could be implemented to reduce the less-than-significant impact of increased solid waste generation.

1. As part of the areawide marketing program, the Redevelopment Plan should encourage commercial and industrial businesses to participate in Oakland's new commercial recycling program.

REFERENCES - Solid Waste

Estes, Leslie, Environmental Education Specialist, Oakland Department of Public Works, telephone communication, May 5, 1994.

Johnson, William Johnson, Division Vice President, Waste Management of Alameda County, written communication, June 9, 1994.

4.14 PUBLIC SERVICES

4.14.1 Police Protection

Environmental Setting

The Oakland Police Department provides preventative patrol and emergency response services to the City of Oakland from the Hall of Justice at 455 Seventh Street at Broadway in downtown Oakland. The Department is centralized and divided into five Patrol Districts, each containing seven beats. There are three shifts per beat with one officer assigned per shift. Shifts are divided into daytime (5:30 a.m.-3:30 p.m.), evening (3:30 p.m.-11:30 p.m.) and nighttime (11:30 p.m.-5:30 a.m.) patrols. In 1993, the Police Department received approximately 1,004,640 calls citywide, an average of 2.6 calls per resident. Of the total citywide calls, roughly one in three (377,000), required dispatching officers to the scene (Jones, 1994).

The Police Department currently has a total of 712 authorized, sworn personnel, the equivalent of 1.84 sworn personnel per 1,000 residential population. After Fiscal Year 1994-95 budget cuts, the Department anticipates a staff of 679 sworn personnel, an average of 1.76 sworn officers per 1,000 residents. (For comparison, the national average is 2.8 sworn personnel per 1,000 population.) (Police Department, 1993)

The Coliseum Redevelopment Area lies within portions of Police Department Districts 4 and 5 and is covered by Beats 22, 29, 30, 31, and 32. Beats which cover the Coliseum Redevelopment Area generally are staffed with one beat officer and up to two additional officers assigned per shift. Average emergency response time within the Coliseum Redevelopment Area is 2.5 to 5 minutes, which is consistent with Department standards (Jones, 1994).

The Oakland Police Department compiles statistics for reported Part I (e.g., murder, rape, robbery, felony assault) and Part II crimes (e.g., kidnapping, vandalism, and drug related offenses). For the City as a whole, there were approximately 83,200 total reported crimes (Part I and Part II) in 1993, a six percent decrease from 1992 total reported crimes. In the Coliseum Redevelopment Area, there were approximately 14,000 total reported crimes which

represents 17 percent of the Citywide total. The Coliseum Redevelopment Area reported crimes remained a constant 17 percent of the Citywide total (Tracy, 1994).

Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project would have a significant impact on a public service provider if it were to interfere with or substantially change demand for governmental services or require substantial alterations to such systems. For the purposes of this analysis, the proposed Coliseum Area Redevelopment Plan would have a significant impact on police protection services if it were to interfere with or substantially change demand for police services, or require substantial alterations to Police Department operations.

Impacts

Implementation of the proposed Redevelopment Plan would result in approximately 2,100 new residents and 5,000 new workers by the year 2010. According to the Police Department, four new police officers and additional equipment would be required to serve the Coliseum Redevelopment Area. This estimate is based on the Department's 1994-95 service standard of 1.76 sworn officers per 1,000 population. (Six new police officers would be required if the service standard was based on the national average of 2.8 sworn officers per 1,000 population.) The estimated cost for each new sworn police officer, plus equipment (cars, mobile radio, personal computers, safety equipment and uniforms) is \$135,360 per officer per year. In addition, the Department anticipates that two additional civilian personnel would be needed at an undetermined cost (Young, 1994).

The proposed Redevelopment Plan would not substantially alter or change the demand for police protection services and, therefore, would not be a significant impact. Four additional officers would represent less than a one percent increase in total sworn personnel for FY 94-95, which would not substantially change demand for police services. Implementation of the Redevelopment Plan without increasing staff levels would reduce the FY 94-95 sworn officer to population ratio from 1.76 officers per 1,000 population to 1.75 officers, less than a one percent reduction.

Overall, the proposed Redevelopment Plan would create more economic activity, provide more jobs, and make more efficient use of currently vacant or obsolete residential and industrial structures, all of which could beneficially affect crime in the Coliseum Redevelopment Area. New development would also provide additional tax revenues to support staffing and equipment needs. Substantial alterations to Police Department operations would not result due to implementation of the Redevelopment Plan.

Mitigation

No significant effect on police protection services would result from implementation of the proposed Coliseum Redevelopment Plan. The following preventative measures would further reduce less-than-significant impacts on the Police Department, as identified by the Oakland Police Department (Engberg, 1994):

1. During construction, 24-hour-a-day security patrol should be provided for all construction sites to deter theft of equipment and personal property.
2. The Oakland Police Home Alert Program/Unit should be used to implement neighborhood watch programs in the Coliseum Redevelopment Area.

REFERENCES - Police Protection

Engberg, Officer Ed, Community Services Division, Oakland Police Department, written communication, May 18, 1994.

Oakland Police Department (Oakland Police), Sworn Officer to Population Fact Sheet, Fiscal Year 1993-94.

Jones, Sharon, Lieutenant of Police, Community Services Division, Oakland Police Department, written communication, March 30 and May 18, 1994.

Tracy, Officer Ed, Operations Support Division, Oakland Police Department, written communication, June 14, 1994 and Lynn Bellman, Management Assistant, telephone conversation, June 20, 1994.

Young, Marvin, Deputy Chief of Police, Oakland Police Department, written communication, June 9, 1994, and Estimated FY 94-95 Budgeted Police Officer Costs.

4.14.2 Fire Protection

Environmental Setting

The Oakland Fire Department has 23 engine stations which provide fire suppression, first response emergency medical service, rescue, hazardous materials control, and fire inspection services to the City of Oakland. In 1993, the Oakland Fire Department responded to approximately 51,000 calls Citywide. The majority (71 percent) of these responses were to emergency medical service calls, followed by fire suppression (18 percent), miscellaneous (8 percent) and private alarm (3 percent) calls (Robinson, 1994).

Six engine stations serve the Coliseum Redevelopment Area, four of which are located within the study area boundaries: 1) Station 13 located at 1225 Derby Avenue with one engine and four on-duty personnel; 2) Station 18 located at 1700 50th Avenue with one engine, one truck, and eight on-duty personnel; 3) Station 27 located at 8501 Pardee Drive with one engine and four on-duty personnel; and 4) Station 29 located at 1016 66th Avenue with one engine and four on-duty personnel. In addition, Station 20 located at 93rd and "A" Streets, and Station 23 located at 7100 Foothill Boulevard also serve the Coliseum Redevelopment Area. The average response time within the Coliseum Redevelopment Area is three to five minutes which is within Department standards. The Fire Department is currently constructing a new fire station at 98th Street and East 14th Avenue that will replace Station 20 with a larger facility (Robinson, 1994).

Water for fire-fighting purposes is transported by the East Bay Municipal Utility District from reservoirs in the Oakland Hills through their supply system. The Fire Department requires new development to meet hydrant spacing and pressure requirements specified by the 1991

Uniform Fire Code (UFC). For residential uses, the standard is a minimum flow of 1,000 gallons per minute (gpm) at 20 pounds per square inch (psi) gage pressure. For commercial and industrial uses, fire flow and hydrant spacing are determined on the basis of square footage and projected building occupancy. The majority of existing development within the Coliseum Redevelopment Area and City was built prior to adoption of *Uniform Fire Code* standards (Robinson, 1994).

Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project would have a significant impact on a public service provider if it were to interfere with or substantially change demand for governmental services or require substantial alterations to such systems. For the purposes of this analysis, the proposed Redevelopment Plan would have a significant impact on fire protection services if it were to interfere with or substantially change the demand for fire protection services, or require substantial alterations to Fire Department operations.

Impacts

Implementation of the proposed Redevelopment Plan would result in a total of approximately 5,000 new workers and 2,100 new residents by the year 2010. This added worker and residential population would increase calls for emergency medical services, alarms malfunctions, fire inspection services, fire suppression and rescue. The Fire Department does not anticipate the need to add personnel or equipment to meet this increased demand (Robinson, 1994).

Under the proposed Redevelopment Plan, three out of ten target areas would receive a proportionally larger increase in resident or worker population. These areas include the Fruitvale BART Station, East Bay MUD / Edgewater Sites, and 81st Avenue Target Areas. In these target areas, response times could be delayed or impeded if there was a substantial increase in traffic congestion or a relatively high concentration of residents or workers (Robinson, 1994).

The spacing of fire hydrants would need to be upgraded to meet current codes for new development. This is not a significant impact of the Redevelopment Plan as the cost of these upgrades would be borne by developers of individual projects within the Coliseum Redevelopment Area.

Reduced vagrancy, increased investment in maintenance, and renovation of vacant or obsolete residential and industrial structures could beneficially affect the fire hazard potential in the Coliseum Redevelopment Area. New development would also provide additional tax revenues to support staffing and equipment needs. Because the Redevelopment Plan would not substantially change demand for fire protection services or require substantial changes to Fire Department Operations, the Redevelopment Plan would result in a less-than-significant effect on the environment.

Mitigation

No significant effect on fire protection services would result from implementation of the proposed Redevelopment Plan. The following measures would further reduce the less-than-significant effects on the Fire Department.

1. Businesses in the Coliseum Redevelopment Area should provide automatic fire extinguishing systems. These systems would reduce fire flow requirements to 1,500 gallons per minute for two hours at 20 pounds per square inch to ensure adequate fire flow to industrial and commercial uses.
2. Relatively high density development should not be located in areas that already have high concentrations of residential populations, thereby minimizing the potential for mass casualties in the event of a disaster and the potential for delays in response times for emergency medical and fire protection services.
3. New businesses should not be located in areas which pose hazards (e.g., hazardous materials spill or fire) to nearby residential areas. (The proposed Coliseum Area Redevelopment Plan would provide transitional zoning and buffers to reduce conflicts between existing industrial/residential areas.)

4. Automatic fire protection systems (sprinklers) should be required for new residential developments.
5. Employees and residents should be encouraged to seek fire and general safety public education which should be provided to reduce the number of emergency medical service calls.

REFERENCES - Fire Protection

Robinson, Ernest, Assistant Chief, Support and Services, Oakland Fire Department, written communication, May 19, June 1 and June 6, 1994.

Uniform Fire Code, 1991

4.14.3 Emergency Medical Services

The Oakland Fire Department provides first response to emergency medical calls. Emergency "911" calls are transferred by the Police Department to the Fire Department to determine the appropriate level of response. Upon arrival, the Fire Department provides patient stabilization and American Medical Response West provides ambulance transport to a hospital, if necessary (McFadden, 1994).

American Medical Response West provides ambulance transportation to hospitals and health care facilities in the Coliseum Redevelopment Area. American Medical Response West operates under an exclusive contract in Alameda County and has approximately 1,100 employees and 200 vehicles serving four Bay Area counties. Vehicles are deployed using a satellite-assisted communications center which can identify the location of a vehicle within feet and determine travel speed and direction. Vehicles are deployed to meet an eight minute response requirement to any site in Alameda County. American Medical Response West estimates it receives approximately 2,700 calls per month from within the City of Oakland (McFadden, 1994).

The 911 emergency system is currently under study by an Alameda County Task Force. Based on study findings, the County may require that private emergency medical service providers supply non-emergency medical transportation (McFadden, 1994).

In the event of mass-casualty or disaster situations, the Oakland Fire Department would be responsible for coordinating emergency services with other jurisdictions (McFadden, 1994).

Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project would have a significant impact on a public service provider if it were to interfere with or substantially change demand for governmental services or require substantial alterations to such systems. For the purposes of this analysis, the proposed Coliseum Redevelopment Plan would have a significant impact if it were to interfere with or substantially change the demand for emergency medical services, or require substantial alterations to such operations.

Impacts

The proposed Redevelopment Plan would not significantly affect emergency services provided in the City of Oakland. Because American Medical Response West does not keep area-specific records, estimates of increased service demand cannot be made for the Coliseum Redevelopment Area. According to American Medical Response West, existing resources would be adequate to respond to the increase in emergency medical calls generated by the residential and employment growth resulting from implementation of the Redevelopment Plan. Increased demand would be met through revisions to the strategic deployment plan. Thus, the Redevelopment Plan would not require substantial alterations to emergency medical operations.

Mitigation

Because there would be no significant impacts on emergency medical services, no mitigation is warranted.

REFERENCE - Emergency Medical Services

McFadden, Chuck, Public Media Relations Manager, American Medical Response West, telephone conversations, May 9 and May 23, 1994.

4.14.4 Schools

Environmental Setting

The Oakland Unified School District, serving 51,330 students, is the sixth largest district in the State. During the 1993-92 school year, the District operated 59 elementary schools (grades K-5 or K-6), 16 middle and junior high schools (grades 7-8, 7-9, or 6-8), and 11 high schools (9-12 or 10-12), plus 9 Temporary Alternative Programs/Independent Study Centers, and 3 Exceptional Child Centers (OUSD, 1992-93).

District enrollment has remained fairly level for almost a decade, ranging from 51,492 in 1984 to 52,615 in 1992. The School District is currently considering a change in middle school configuration that would restructure all District schools to conform to grades K-5 for elementary schools, grades 6-8, for middle and junior high schools, and grades 9-12 for high schools (Long, 1994). The District is also establishing K-8 neighborhood schools. If these changes were adopted, local school enrollment and service area boundaries would be re-adjusted throughout the District.

The Coliseum Redevelopment Area is served by five elementary schools, four middle / junior high schools, and two high schools. Their addresses, classroom capacities and enrollment are shown in Table 4.14-1.

Enrollment at schools serving the Coliseum Redevelopment Area is at 91 percent of capacity for elementary schools, 82 percent of capacity for middle / junior high schools, and 76 percent of capacity for high schools. Enrollment among schools, however, is unevenly distributed. Three schools serving the Coliseum Redevelopment Area are at or near capacity (Category I schools): Lazear Elementary, Simmons Jr. High, and Fremont High School. However, Stonehurst, Sobrante Park, Brookfield Village Elementary Schools, Madison Middle

**TABLE 4.14-1
SCHOOLS SERVING THE COLISEUM REDEVELOPMENT AREA**

School	Address	Grades	Capacity ^a (10/93)	Enrollment	
				(10/93)	% Capacity
Elementary Schools					
Brookfield Village	401 Jones Avenue	K-5	635	487	77%
Highland	8521 A Street	K-6	1,163	881	76%
* Jefferson	2035 - 40th Avenue	K-6	1,327	1,365	103%
* Lazear	824 - 29th Avenue	K-6	522	502	96%
* Lockwood	6701 East 14th Street	K-6	913	838	92%
* Melrose	1325 - 53rd Avenue	K-6	485	503	104%
Sobrante Park	470 El Paso Drive	K-5	298	269	90%
* Stonehurst	10315 E Street	K-5	810	735	91%
TOTAL: Elementary School			6,153	5,582	91%
Middle/Junior High Schools					
* Elmhurst	1800 - 98th Avenue	6-8	666	607	91%
Havenscourt	1390 - 66th Avenue	7-9	892	567	64%
Madison	400 Capistrano Drive	6-8	641	461	72%
* Simmons	2101 - 35th Avenue	7-9	1,054	1,045	99%
TOTAL: Middle/Junior High School			3,253	2,680	82%
High Schools					
Castlemont	8601 MacArthur Blvd.	9-12	2,060	1,404	68%
* Fremont	4610 Foothill Blvd.	10-12	1,763	1,604	91%
TOTAL: High School			3,823	2,892	76%
TOTAL: All Schools			7,076	5,572	79%

^a Optimal capacity is given. This is 95 percent of absolute capacity.

* Indicates school is enrolled at or near full capacity

YR Indicates school runs on a year-round schedule; Capacity and enrollment are year-round multi-track

Source: Oakland Unified School District; Pittman & Hames Associates, 1994

School, and Castlemont High School have excess classroom capacity and are considered "under-enrolled." Currently, the School District has no plans to alter schools or change personnel to redistribute enrollment and classroom capacity within the Coliseum Redevelopment Area (Long, 1994).

Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project would have a significant impact on a public service provider if it were to interfere with or substantially change demand for governmental services or require substantial alterations to such systems. For purposes of this analysis, the proposed Redevelopment Plan would have a significant impact on the Oakland Unified School District if it were to substantially increase enrollment beyond capacity, require new school facilities, or substantially alter District service standards.

Impacts

Implementation of the Redevelopment Plan would add a total of 700 new housing units in the Coliseum Redevelopment Area, which would generate approximately 490 school age children (Long, 1994; and statewide factors). This represents a one percent increase in total 1992-93 District enrollment and a nine percent increase in enrollment for schools serving the Coliseum Redevelopment Area. Table 4.14-2 shows, by target area, the estimated increase in students attributable to the Redevelopment Plan, and schools that would experience most of the new enrollment. Based on these estimates, new students would use 49 percent of remaining elementary school capacity, 12 percent of remaining middle school capacity, and 15 percent of remaining high school capacity. Most of these new students would be concentrated in the Fruitvale BART Station Target Area (300 units) and along the East 14th Street Corridor (300 units).

Schools within the Coliseum Redevelopment Area that are already at or near capacity could experience further classroom crowding. In particular, the 300 new housing units in the Fruitvale BART Station Target Area are expected to generate 120 new elementary school students and 90 middle and high school students. Based on current school service area boundaries, these students would attend Lazear Elementary, Simmons Junior High, and

TABLE 4.14-2

NET NEW SCHOOL AGE CHILDREN AND AFFECTED SCHOOLS IN THE COLISEUM REDEVELOPMENT AREA

Target Area	Elementary School Grades K-6	Major Schools Affected	Middle/High School Grades 5-12	Major Schools Affected
Fruitvale BART	120	Lazear	90	Simmons MS Fremont HS
Elmwood Ave.	12	Lazear	9	Simmons MS Fremont HS
Railroad Ave.	4	Stonehurst Sobrante	3	Madison MS Castlemont HS
Pippini/Pearmain	24	Stonehurst	18	Madison MS Castlemont HS
Remainder Area	<u>120</u>	^a	<u>90</u>	^a

^aStudents in the remainder area, or the area outside of the target areas or in this case along the East 14th Street Corridor, would be distributed among several elementary, middle and high schools.

Source: Oakland Unified School District: Pittman & Hames Associates, 1994.

Fremont High School which, respectively, are at 96, 99 and 91 percent of capacity. The 210 students from the "remainder area" (not within a target area) along the East 14th Street Corridor would be distributed among Melrose Elementary, Lockwood Elementary, Highland Elementary, Stonehurst Elementary, Havenscourt Junior High, Elmhurst Middle School, Fremont High, and Castlemont High School. All the schools except for Lazear, Simmons, Fremont, and Melrose are under-enrolled and can accommodate the projected growth.

The District has several options for accommodating new students at schools that are at or near classroom capacity (Long, 1994). The District could add portable classrooms at certain school sites, shift students to schools with excess capacity, or implement a grade reconfiguration program, which is currently under study. Therefore, implementation of the Redevelopment Plan would not be a significant environmental impact, as there is a sufficient classroom capacity in the overall Coliseum Redevelopment Area.

Mitigation

Because the Coliseum Redevelopment Plan would not result in significant adverse effects on the Oakland Unified School District, no mitigation is warranted.

REFERENCES - Schools

Long, Robert, Coordinator of Planning and Facilities, Oakland Unified School District, telephone communication, June 1, 1994.

Long, Robert and statewide average factors. The estimate of 490 school age children is based on statewide average factors of 0.4 elementary students, 0.1 middle school students, and 0.2 high school students per new housing unit and discussions with Robert Long of the Oakland Unified School District, telephone conversation, May 17, 1994.

Oakland Unified School District (OUSD), *Information Summary 1992-1993*.

4.14.5 Parks and Recreation

Environmental Setting

The Office of Parks and Recreation operates and maintains approximately 1,320 acres of developed parks within the City of Oakland. The Office of Parks and Recreation is also responsible for the maintenance of street trees. In addition to City-owned parks, approximately 1,623 acres of resource conservation areas and 131 acres of school playgrounds and recreation facilities are located within Oakland.

The City of Oakland currently has an average of 1.34 acres of local serving parks per 1,000 residents. The City is currently revising the Open Space Conservation and Recreation Element of the *Oakland Comprehensive Plan* (December, 1993). The draft Open Space Conservation and Recreation Element proposes a standard of four acres of local serving parks per 1,000 residents. In order to achieve the proposed standard, approximately 1,000 acres of local serving park land would need to be acquired.

Despite the existing deficiency in local serving parks, many existing park facilities are currently underused. A Citywide recreational needs survey, conducted in 1992, indicates that while most residents are satisfied with the city park system and its maintenance, concerns about park safety are widespread. One of the guiding principles of the draft Open Space Conservation and Recreation Element is the rehabilitation and maintenance of existing park facilities, before new park facilities are developed (Miller, 1994).

The Coliseum Redevelopment Area contains a total of 13 City-owned park and recreation facilities, totaling 318.6 acres, including 11 local serving parks, a tennis court, and soccer field (see Table 4.13-3) (Yamashita, 1994). The 262-acre Galbraith Golf Course is adjacent to the study area. In addition, the Martin Luther King, Jr. Regional Shoreline Park, owned by the East Bay Regional Park District, is located along the western boundary of the Coliseum Redevelopment Area.

Within the Coliseum Redevelopment Area, park standards are estimated to be an average of 1.3 acres per 1,000 residents, which is similar to the current Citywide average but below the

**TABLE 4.14-3
CITY-OWNED PARK AND RECREATION FACILITIES WITHIN THE COLISEUM REDEVELOPMENT AREA**

Facility Name	Location	Size (acres)	Buildings	Tot-lots	Picnic Sites	Baseball/ Softball Fields	Basketball Courts	Tennis Courts
Brookfield Park	Edes & Jones, 1 block from I-880	14.00	Rec. Ctr Gym Sr. Ctr.	1	3	1	3	2
Carney Park	105th Ave. & Acalanes	0.60		1	2		2	
Coliseum Gardens	Next to BART between 66th and 69th Aves.	5.40		1			2	
Columbian Gardens	Hesket Rd. & Empire south of 98th Ave.	1.63		1	4		4	
Curt Flood Field	North of 66th Ave. off Oakport Dr.	8.00				1		
Elmhurst Plaza	98th Ave. between B & C Sts.	2.00		2	3		1	
Elmhurst Tennis	B St. between 97th & 98th Aves.	0.71						4
Galbraith Soccer	Doolittle Dr. between Airport Access Dr. and Davis St.	4.00				1		
Greenman Field	Between 66th & 69th Aves., West of E. 14th St.	6.80				1		
Rainbow Rec. Center	E 14th St. & Seminary Ave.	2.44	Craft Room	1			2	
Sobranie Park	470 El Paseo Dr.	4.52		1	1		1	
Stonehurst Park	10315 E. St. near San Leandro Blvd.	4.00		1	1		2	
Tassaforanga Park	85th Ave. & E St.	2.50	Rec Ctr. Gym	2		1	5	

Source: Oakland Department of Parks and Recreation, 1994

proposed standard of four acres per 1,000 residents. This estimate is based on a range of 0.86 acres per 1,000 residents in Central East Oakland (the third lowest in the City) to 1.73 acres per 1,000 residents in Elmhurst (the third highest in the City).

Significance Criteria

According to *CEQA Guidelines*, Appendix G, a project would have a significant impact on a public service provider if it were to interfere with or substantially change demand for governmental services or require substantial alterations to such systems. The proposed Redevelopment Plan would have a significant impact on parks and recreation services if it were to interfere with or substantially change demand for park and recreation services, or require substantial alterations to such systems.

Impacts

Implementation of the proposed Redevelopment Plan would result in approximately 5,000 new workers and 2,100 new residents. These new workers would increase demand for picnic and sports facilities in the Coliseum Redevelopment Area. New residents would increase demand for picnic sites, tot-lots, sport facilities, open space and recreation programs.

The Office of Parks and Recreation anticipates that this increased demand would require increased park maintenance personnel in the area. Added tree maintenance personnel may also be needed to maintain public landscaped areas. Although the number of added personnel cannot be determined, these increases in personnel are not considered to require substantially more governmental services, and thus would not be significant.

The proposed Coliseum Area Redevelopment Plan includes increases in open space and recreation uses, mostly through landscaping improvements. Landscaping improvements would be focused in the Fruitvale BART Station, East Bay MUD / Edgewater Sites, and Coliseum BART Station Target Areas. Overall, the Redevelopment Plan would have a net positive effect on the image of the City by improving open space and recreation uses in the Coliseum Redevelopment Area.

Mitigation

No significant effects on parks and recreation facilities were identified due to the proposed Redevelopment Plan. The following measures could be implemented to reduce less-than-significant effects.

1. To reduce increased park demand by residents, the Redevelopment Plan should include open space and recreation standards for new residential developments.
2. New landscaping for commercial and industrial uses should include picnic areas for workers.
3. Additional litter containers and dumpster boxes should be provided in parks throughout the Coliseum Redevelopment Area to minimize the need for increased maintenance personnel. Litter containers could display a Coliseum Area logo which could support redevelopment efforts for areawide marketing to businesses and developers.
4. The Redevelopment Plan should include the rehabilitation of existing park and recreation facilities to minimize the need for new open space and recreation facilities to serve residents and workers in the Coliseum Redevelopment Area.

REFERENCES - Parks and Recreation

Miller, Barry, General Plan Update Coordinator, City of Oakland, Planning and Building Department, telephone conversation, June 17, 1994.

Yamashita, Art, Supervisor, Projects, Grants and Planning Unit, City of Oakland, Office of Parks and Recreation, written communication, June 7, 1994.

SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

According to *CEQA Guidelines* Section 15126(b), an EIR should contain a discussion of significant environmental effects which cannot be mitigated to a level of insignificance if the proposed project is implemented. This discussion should include a description of the implications related to each of these impacts and why the project is being proposed.

Implementation of the Coliseum Area Redevelopment Plan may result in unavoidable significant or potentially significant environmental effects in the following area: air quality. The unavoidable impacts associated with this issue area is discussed below.

Air Quality

Implementation of the Redevelopment Plan would result in an increase in regional emissions of nitrogen oxides in excess (violation) of Bay Area Air Quality Management District (BAAQMD) thresholds. Even with an aggressive and comprehensive Transportation System Management (TSM) program, regional emissions would exceed (violate) the BAAQMD thresholds of significance.

**SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL
CHANGES WHICH WOULD BE INVOLVED IN THE
PROPOSED ACTION SHOULD IT BE IMPLEMENTED**

Development due to the proposed Redevelopment Plan would require an irreversible commitment of material or natural resources for building construction, such as wood, refined metal, petroleum and stone. It would result in the irretrievable commitment of energy and water to support the planned industrial and commercial uses. Additional vehicle trips due to Redevelopment Plan implementation would contribute to future cumulative air quality impacts from increases in nitrogen oxides and particulate matter.

GROWTH INDUCING IMPACTS

Section 15126 (g) of the *CEQA Guidelines* states that the discussion of growth inducing impacts should include the ". . . ways in which the proposed project could foster economic or population growth, or the construction of additional housing either directly or indirectly, in the surrounding environment."

Growth inducement is an inherent impact of the proposed Redevelopment Plan. The basic premise of the plan is to alter land use, density, and character of the Coliseum Redevelopment Area by improving business, employment, and residential opportunities. Job growth would occur due to job training programs, business retention and expansion programs, and relocation inducement for businesses from elsewhere in the State. If successfully implemented, the Redevelopment Plan would be expected to create population, employment, and housing growth in the Coliseum Redevelopment Area, all beneficial impacts.

7.1 DIRECT GROWTH-INDUCING IMPACTS

The proposed Redevelopment Plan would intensify land uses throughout the 6,500 acre Coliseum Redevelopment Area by the development of 2,140,000 square feet of net new retail, office and industrial space, and 700 net new housing units. (As noted in Section 4.2.3, Land Use Compatibility, there could be as little as about 1,552,000 square feet of net new retail, office and industrial space, and as few as about 280 net new housing units directly attributable to the Redevelopment Plan.) This development would result in approximately 2,100 new residents and 5,000 new jobs by the year 2010. (As noted in Section 4.3.3, Population, Employment and Housing, there could be as few as about 830 new residents and 3,610 new jobs directly attributable to the Redevelopment Plan.) In 2010, this growth would represent less than a one percent increase in the City's total population, and a 2.3 percent increase in total employment. In addition to new construction, existing, underused vacant land would be developed as a result of the Redevelopment Plan.

Although development would occur throughout the 6,500 acre Coliseum Redevelopment Area, most of the development would occur in 10 target areas, with a substantial part of the

7.0 Growth Inducing Impacts

development occurring along the East 14th Street Corridor. Certain target areas could experience more concentrated growth than others. These include the Fruitvale BART Station Target Area, for which 300 new units of housing and 250,000 sq. ft. of retail and commercial space is planned, and the EBMUD / Edgewater Sites target area for which 555,000 sq. ft. of retail and office development is planned. Transit facilities would also be enhanced with a multimodal facility near the Coliseum BART Station, which could spur additional development in the area.

The proposed Redevelopment Plan encompasses a built-out urban area. No expansion to municipal infrastructure not already under consideration would be required to accommodate new development directly or indirectly induced by the program. However, the proposed Redevelopment Plan would require the addition of up to four new sworn police officers to accommodate residential growth within the Coliseum Redevelopment Area.

7.2 INDIRECT GROWTH INDUCING IMPACTS

Not all of the approximate 5,000 new jobs created by the Redevelopment Plan would be held by existing Oakland residents. Some workers would be expected to move to the City. Assuming that new workers would have similar job/residency patterns as existing City workers, up to 725 new worker households would move to Oakland. This number would be less, depending on the success of the proposed job training program that would be implemented as part of the Redevelopment Plan.

The Redevelopment Plan would also have indirect employment impacts through the multiplier effect. An estimated 1,935 additional secondary jobs would be created by the Redevelopment Plan.

8.1 INTRODUCTION

The discussion of cumulative impacts in this section includes those which CEQA defines as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts (*CEQA Guidelines*, Section 15355). The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (*CEQA Guidelines* 15355(b)).

According to *CEQA Guidelines*, Section 15130, an analysis of cumulative impacts requires either a list of past, present and reasonably anticipated projects, or a summary of projections contained in an adopted general plan or related planning document which is designed to evaluate regional or areawide conditions. In this EIR, the analysis of cumulative impacts is based on the employment and housing growth expected to occur as a direct result of the plan, as compared to the overall growth projected in the Oakland vicinity, and other general development that could occur within the urbanized areas in the Bay Area.

8.2 LAND USE

Section 4.2 describes plan-related and cumulative land use effects would occur from a variety of economic and land use incentives that have been adopted for the City of Oakland and within the Coliseum Redevelopment Area. These plans include Community Development Districts which provide funds for neighborhood and public services facilities, and the Enterprise Zone which stimulates economic activity and employment opportunities through a variety of tax incentives and zoning controls. These and other plans, and cumulative project development in the vicinity, would tend to stimulate growth in the Coliseum Redevelopment Area. Such cumulative development would not be anticipated to disrupt or divide the physical arrangement of an established community; cumulative development would

be anticipated to lessen blighted conditions in the area and thus to be a beneficial land use effect.

8.3 POPULATION, EMPLOYMENT AND HOUSING

Cumulative population, employment, and housing effects are forecast to occur due to a variety of anticipated development projects in the study area vicinity which are encompassed in ABAG projected employment growth. In addition, cumulative growth is also anticipated to occur due to implementation of the Enterprise Zone. Cumulative growth without implementation of the Coliseum Area Redevelopment Plan is anticipated to include about 8,580 to 9,970 additional employees within the study area. Little cumulative growth in housing is anticipated to occur, as most future development in the area would probably be of a commercial and/or industrial nature without implementation of the Redevelopment Plan.

8.4 TRANSPORTATION

The analysis in Section 4.4 of this EIR describes existing conditions for roadways, traffic levels of service, transit systems, and rail lines. Cumulative conditions for year 2010 were projected based on adopted plans and models of anticipated regional growth. Under background regional conditions, levels of service at two of the selected roadway segments that were analyzed which currently operate at an acceptable level of service (High Street south of I-880 and 66th Avenue from San Leandro Street to East 14th Street) would degrade to unacceptable levels of service (LOS E or LOS F). Two roadway segments (Fruitvale Avenue from Alameda Avenue to Elmwood Avenue and I-880 north of High Street to Davis Street) that currently operate at unacceptable levels would further degrade to a worse level of service (LOS E or LOS F). In addition to roadway segments for which levels of service were calculated for this EIR, these would be five additional problem locations (San Leandro Street near 105 Avenue, the High Street / I-880 Interchange, Oakport Street west of Hegenberger Road, the 98th Avenue / I-880 Interchange, and roadways in the vicinity of the Coliseum) that are anticipated to operate at unacceptable levels of service with cumulative development. With the addition of plan-related traffic, no additional roadway segment would further degrade to a worse level of service LOS E or LOS F. Occasional backups on I-880 and local interchanges are expected to continue when events at the Oakland Coliseum

coincide with peak commute hours. Transit operators are projected to be able to carry new riders with minimal impact to existing service, except when peak commute times coincide with events at the Oakland Coliseum. Mitigation measures for significant cumulative traffic effects are included in Section 4.4.4 of this EIR.

8.5 AIR QUALITY

The analysis in Section 4.5 of this EIR describes existing air quality conditions, projected conditions under cumulative growth scenarios for the region, and the additional emissions as a result of the proposed Coliseum Redevelopment Plan. Local carbon monoxide conditions are predicted to be less-than-significant with cumulative and plan-related emissions. Regional air quality (ozone) is projected to worsen and then improve as measures are implemented to control vehicular emissions, encourage ridesharing and transit use, and reduce pollution from industry and other sources. Nonetheless, the regional air basin is not expected to attain federal and State air quality standards for certain pollutants within the time frame mandated by law. For this reason, all projects, including the proposed Coliseum Redevelopment Plan, must implement all feasible measures on a timely basis to minimize impacts as much as possible.

The net increase in employment and housing within the Coliseum Redevelopment Area would contribute to the overall air pollutant burden because of additional vehicle trips, stationary source emissions such as manufacturing plants, and normal emissions from space heating and power usage at employment centers and homes. The Coliseum Redevelopment Area is well served by transit, and would provide employment opportunities for local residents, which could reduce some of these impacts. Nonetheless, cumulative air quality impacts (nitrogen oxides) would be significant because the region would not be able to meet air quality standards. Mitigation measures for significant cumulative air quality effects are included in Section 4.5.4 of this EIR.

8.6 NOISE

The analysis in Section 4.6 of this EIR describes existing noise levels, projected increases due to cumulative traffic in the area, and impacts related to implementation of the proposed

Coliseum Redevelopment Plan. Existing conditions in much of the area result in high noise levels due to traffic, transit and rail travel and industrial activities. One roadway segment, 98th Avenue west of I-880, would result in a noticeable noise increase due to cumulative development (more than 3dBA). However, no roadway segment would be significantly affected by cumulative growth to the degree that noise at adjacent residences would increase above 4 dBA, the threshold of significance.

Construction activity would have temporary impacts on residential and commercial neighbors, and operations at expanded businesses could result in noise impacts at neighboring uses. The Redevelopment Plan includes provisions to minimize noise impacts as part of the buffering requirements. If more than one construction project were to occur at the same time in proximity to another in the study area, there could be cumulative short-term noise effects from construction equipment. Mitigation measures to lessen construction noise effects are included in Section 4.6.4 of this EIR.

8.7 HAZARDOUS MATERIALS

The analysis in Section 4.7 of this EIR discusses known and suspected sites where hazardous materials may be found within the study area, and evaluates the Redevelopment Plan's 10 target areas for specific cases of contamination. In most cases, contamination is due to leaking underground tanks. Other sources of hazards include manufacturing operations, electrical transformers, asbestos-containing building materials, fluorescent lights, and lead-based paints. Some previously unidentified sources of soil and groundwater contamination may also exist within the study area due to the long history of industrial activity and few controls on the storage, use and disposal of hazardous materials until relatively recently.

The proposed Redevelopment Plan could expose construction workers, employees and residents to hazardous and toxic levels of the pollutants identified above, either through contact with existing pollutants or introduction of additional sources. New sources are regulated. Mitigation measures are identified to reduce the level of risk, including better buffering as provided for in the Redevelopment Plan.

Cumulatively, development in areas within and outside of the Coliseum Redevelopment Area would potentially add opportunities for contact with new sources of materials. Soil and groundwater contamination construction-related effects (except for remediation) are considered to be significant due to implementation of the Redevelopment Plan. Although with cumulative development, there would be fewer effects than with the Redevelopment Plan due to less construction, there would also be less buffering between conflicting land uses (industrial and residential) and thus more opportunity for significant effects. In addition, with cumulative development alone, there would be fewer beneficial effects of the long-term reduction of hazardous waste in the study area due to clean-up activities under the Redevelopment Plan.

There is limited treatment and disposal capacity within the State, so a substantial increase in the amount of hazardous waste and its disposal could be considered significant. The proposed Redevelopment Plan would contribute to increased hazardous waste generation in California. Around California and the United States, hazardous waste landfills are reaching capacity. In addition, many have caused contamination of the surrounding environment. Because the public and the EPA have found environmental contamination from hazardous waste landfills unacceptable, the EPA has begun a process to restrict the types of wastes that can be sent to landfills. In California, hazardous waste landfill capacity is limited and diminishing. Treatment capacity is also limited, but it is likely to increase as technologies are developed and implemented to safely and effectively treat hazardous waste.

On a national level, hazardous waste landfill space is currently available. Future capacity will depend on a number of factors, including: 1) the success of hazardous waste minimization nationwide; 2) the capacity of new techniques for reducing the hazard level of hazardous wastes; and 3) the permitting of new treatment or disposal capacity. As of mid-1989, there were 24 hazardous waste landfills in the United States that were open to commercial hazardous waste generators (EI Digest, 1989).

Hazardous waste minimization is among the currently applicable legal requirements with which developers in the study area must comply. Thus on a project-specific basis within the study area, this would be a less-than-significant effect. However, hazardous waste disposal capacity is diminishing, not expanding, and land bans continue to be extended because

disposal capacity does not exist; therefore, cumulative hazardous waste generation from the region including the study area would exacerbate an existing problem and create a cumulative impact that would be significant with or without implementation of the Redevelopment Plan.

8.8 GEOLOGY AND SEISMICITY

The analysis in Section 4.8 of this EIR describes the geologic setting of the area, potential hazards due to settlement and seismic shaking, and mitigation to be implemented on an area wide and case-by-case basis. Cumulatively, the Bay Area is subject to varying degrees of hazard from local geologic conditions, such as settlement, landslides, erosion, and seismic shaking. The most recognizable regional impact is earthquake damage that is projected to occur due to major earthquakes on the San Andreas and Hayward Faults. Modern building codes are intended to minimize the risk of structural collapse and loss of life, but major damage and harm to humans could still occur on a widespread basis with cumulative development. This would be a significant cumulative effect. Mitigation measures for cumulative geologic and seismic effects are included in Section 4.8.4 of this EIR.

8.9 HYDROLOGY AND WATER QUALITY

The analysis in Section 4.9 of this EIR describes the existing hydrologic features in the Coliseum Redevelopment Area, including groundwater, creeks and sloughs, storm drains, and water quality. Impacts of the proposed Redevelopment Plan could occur due to increased erosion and other pollutants from construction sites, possible interception of polluted groundwater, hazardous material spills, and general urban pollutants from roadways and parking lots. Cumulatively, the Redevelopment Plan would contribute runoff pollutants to the San Leandro and San Francisco Bays, but would also provide opportunities for cleanup of polluted sites and regulated operations of new construction and development activities, which would be required to meet Best Management Practices. No improvements to flood control facilities are required for development due to Redevelopment Plan implementation, but could be required elsewhere in the City for cumulative development. Cumulative effects due to the Redevelopment Plan would not be anticipated to be significant.

8.10 BIOTIC RESOURCES

The analysis in Section 4.10 of this EIR describes the habitats, species of concern potentially present within the study area, and recommendations for site-specific studies for development in areas that could support species of concern. Cumulatively, development around the Bay shore has had and would have a significant impact on the biotic resources of the region, and any additional development of important habitat would be a significant impact. Regulatory agencies at the federal, state, regional and local level are responsible for ensuring the preservation and enhancement of habitat, and require project-specific mitigation for development of any important habitat. Mitigation measures for cumulative biotic effects are included in Section 4.10.4 of this EIR.

8.11 CULTURAL RESOURCES

The analysis in Section 4.10 of this EIR describes the prehistoric archaeological and historic resources of the Redevelopment Area. There are a number of important archaeological resources located in the East Bay and within the study area. Given the built-up nature of the Coliseum Redevelopment Area, cumulative impacts within the study area would be indistinguishable from Redevelopment Plan-related impacts. Historic resources within the East Bay include numerous examples of residential, commercial, industrial, religious, and civic historic resources. The City of Oakland's Landmarks Preservation Advisory Board, State Office of Historic Preservation, and other parties review the eligibility of possible resources for designation and advise on mitigation in cases where modifications are proposed. The proposed Redevelopment Plan could result in the direct demolition or alteration of historic resources (whether identified as such or not) and indirect influence on the context of historic resources. Similar impacts are occurring throughout the region, and will continue during the life of the Redevelopment Plan. This could be a significant impact. However, the Redevelopment Plan also provides the opportunity for restoring possibly historic properties that are experiencing neglect, and so could have a net beneficial effect. Mitigation measures for prehistoric archaeological resources are included at the end of Section 4.11.1 and mitigation for historic resources are included at the end of Section 4.11.2.

8.12 ENERGY

From 1995 to 2010, cumulative employment in the proposed Coliseum Redevelopment Area without the Redevelopment Plan would increase by approximately 9,970 employees. Assuming that the cumulative increase in employment would be similar to the Redevelopment Plan with respect to the ratio of commercial jobs to industrial jobs, the increase in annual energy consumption would be approximately 95 million kWh, 565 million cubic feet of natural gas, and 6.4 million gallons of gasoline/diesel fuel. In terms of Btus, cumulative job growth in the study area would increase energy consumption by approximately 2,500 billion Btu, which would represent about a 26 percent increase over existing energy consumption.

Cumulative and Redevelopment Plan-related growth would cause energy consumption to increase by approximately 3,750 billion Btu per year. This use of energy within the study area would be energy-efficient because the development 1) would be infill; 2) would be well-served by transit; and 3) could utilize existing utility services, the transportation network, and minimize trip and travel distances. In addition, new construction would comply with current state and local standards for energy efficiency, especially as mandated by Title 24. Thus the cumulative increase in energy, while adverse, would not be significant if energy-conserving measures were required for implementation of development within the study area.

8.13 PUBLIC UTILITIES

The Redevelopment Plan Area is served by municipal water, sewer, and solid waste services. In general, these services are adequate for existing demands, although some pipelines may be deteriorated in older parts of the City. Implementation of the Redevelopment Plan would result in increased demands for services, and would provide revenues for making improvements.

No major water storage or pipeline improvements would be required, but local distribution lines would need to be upgraded in some areas to meet the needs of commercial and industrial users. Recycled water could also be available for industrial users. Cumulative development within the East Bay Municipal Utility District (EBMUD) service area has been addressed in its master plan and policy statements regarding expanding water storage,

maintaining water quality, and encouraging water conservation and recycling. No significant cumulative impact to water service would occur.

Wastewater collection and treatment systems are provided by EBMUD and the City of Oakland. Inflow and infiltration correction programs are expected to adequately address existing problems of excess wet weather flows. With implementation of the Redevelopment Plan, approximately 0.5 mgd of additional wastewater would be sent to the treatment plant. Extension or upgrades of collection lines would be provided as part of the City-wide upgrade program and through redevelopment funding programs. Cumulative growth would also add to the treatment burden, but is expected to be served within the overall plan for the City.

Solid waste is collected, sorted and disposed of or recycled by Waste Management of Alameda County. Daily tonnage on an average and peak basis is within the permitted capacity of the Altamont landfill. Residential curb-side recycling is provided throughout the city; commercial recycling is being implemented on a non-mandatory basis. Collection and disposal services would not be adversely affected by Redevelopment Plan-related growth or cumulative growth, assuming waste diversion tactics are effective.

8.14 PUBLIC SERVICES

Police and fire protection services are provided by the City of Oakland. Emergency ambulances are provided by contract to American Medical Response West. Public education through high school is provided by the Oakland School District. Parks and recreation facilities are provided by the City and East Bay Regional Park District.

Service levels throughout the City are constrained by budget concerns. Police service levels are low on a per-capita basis compared to national averages. Implementation of the Redevelopment Plan would incrementally add to the service demand and further lower the per-capita service level, but not to a significant degree (less than a one percent change). New staffing of four sworn officers and two civilian employees would compensate for Redevelopment Plan-related growth, and could be paid for by tax increment funds. Cumulative growth throughout the city could result in significant impacts to police services if funding were to be an issue.

8.0 Cumulative Effects

As with police, fire protection services are constrained by budget concerns, and growth due to the Redevelopment Plan and cumulatively throughout the city may result in reduced service levels. Response times are generally within acceptable standards, but equipment and staffing may be stretched further to meet demands. Water delivery systems would be upgraded in portions of the Coliseum Redevelopment Area, blighted conditions would be reduced, new development would be required to meet building code and sprinkler requirements, and tax increment funding would be available, so the net effect within the Redevelopment Area could be positive.

Emergency medical service is provided on a first-response basis by the Oakland Fire Department, with transport to hospitals provided by American Medical Response West. American Medical Response West is required to have a strategic plan for providing service within certain time limits, and so deploys ambulances throughout the City to respond to 911 calls. The City's 911 system is currently being studied, as well, to provide the best service to the City. Redevelopment Plan-related and cumulative growth would be addressed in the strategic plan.

Schools in the Coliseum Redevelopment Area are, on average, under capacity. Three schools are at or over capacity, and six schools are considered under-enrolled. Implementation of the Redevelopment Plan would result in a one percent increase in enrollment District-wide, and a nine-percent increase within the Coliseum Redevelopment Area. Proposed residential development in the Fruitvale BART Station Target Area and along the East 14th Street corridor, and throughout the Oakland Unified School District, could result in overcrowding. The District expects to address this problem through the use of portable classrooms, shifting students to under-enrolled schools, and implementing a comprehensive grade reconfiguration program.

Parks and recreation opportunities are limited in the City and Coliseum Redevelopment Area. While there is a demand for more parks, public safety and maintenance concerns result in underutilization in some areas. Rehabilitation and maintenance of existing parks is planned before additional park lands are acquired. Implementation of the Redevelopment Plan would provide funding for some improvements to parks within the area. Cumulative growth within the City could result in on-going deficiencies.

REFERENCE - Cumulative Effects

EI Digest, Industrial Hazardous Waste Management, Environmental Information, Limited,
February, 1989.

ALTERNATIVES TO THE PROPOSED PROJECT

9.1 LEGISLATIVE FRAMEWORK

The California Environmental Quality Act (*CEQA*) requires an evaluation of the comparative merits of a range of reasonable alternatives to the proposed project that could feasibly attain the basic objectives of the project (*CEQA Guidelines* §15126(d)). The range of alternatives is governed by the "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (*CEQA Guidelines* §15126(d)(5)).

Evaluation of a No Project Alternative and identification of an environmentally superior alternative are required. If the No Project Alternative is the environmentally superior alternative, an environmentally superior alternative must be identified from amongst the other alternatives (*CEQA Guidelines* §15126(d)(2)). *CEQA* indicates that the alternatives discussion must focus on alternatives capable of eliminating any significant adverse environmental effects, or reducing them to levels of insignificance, even if the alternative would impede to some degree the attainment of project objectives or be more costly to implement. If an alternative would cause one or more significant effects in addition to those that the project itself would cause, the former kind of effect must be discussed, but in less detail than is required for the effects caused by the project itself (*CEQA Guidelines* §15126(d)(4)).

9.2 ANALYTIC APPROACH

A number of specific issues and considerations were taken into account in formulating the project alternatives: 1) the overall objectives of the Coliseum Area Redevelopment Plan; 2) potential environmental effects of the additional business and housing growth that would be created as a result of implementation of the Redevelopment Plan; and 3) the need to satisfy the *CEQA* requirements (described above in Section 10.1 Legislative Framework). Project alternatives are discussed below along with the issues relating to each.

The objectives of the Coliseum Area Redevelopment Plan are stated in Chapter 3.0 Project Description, Section 3.2 Redevelopment Plan Actions and Objectives.

The environmental impacts that would be generated as a result of implementation of the proposed Redevelopment Plan would be a function of: 1) the physical land use changes that would occur due the redevelopment, 2) the number of jobs that would be generated directly as a result of the Redevelopment Plan, 3) the number of additional residents due to Plan implementation, and 4) the location of commercial/industrial expansion and housing growth in relation to the location of infrastructure and environmentally sensitive areas.

In formulating the project alternatives the *CEQA* standard of analyzing alternatives that would lessen potentially significant project effects and whose effects can be reasonably ascertained was used. The proposed Redevelopment Plan itself would result in two plan-related significant effects: 1) significant traffic increases along 66th Avenue that would be made worse with implementation of the Redevelopment Plan, and 2) significant increases of hydrocarbons and nitrogen oxides which lead to ozone creation.

The Redevelopment Plan would also contribute to cumulative significant effects due to hazardous waste disposal, traffic, noise along 98th Avenue, and air quality.

9.3 ALTERNATIVES CONSIDERED BUT NOT FURTHER ANALYZED

9.3.1 Location-Specific Alternatives

Cumulative Traffic

Cumulative significant traffic effects would occur with or without the Redevelopment Plan, and the Redevelopment Plan would have no specific unmitigable effect on the levels of service of any of the analyzed road segments. There is no alternative to the Redevelopment Plan that would reduce the cumulative traffic impacts to a less-than-significant level or would improve the levels of service along any of these cumulatively significant road segments. Thus no Redevelopment Plan-related alternative is available to reduce these significant cumulative effects or to lessen their effect using standard level of service categories.

9.3.2 Non-Location Specific Significant Effects - Constrained Development/Growth

The Redevelopment Plan would contribute to Plan-related and cumulative significant regional effects on nitrogen oxides, and to cumulative hazardous waste disposal in the study area. Regarding these significant air quality and hazardous waste disposal effects, it should be noted that these effects are related to future growth and not to the location in the study area. The determination of significance for these effects is based on overall potential future growth in the Coliseum Redevelopment Area. If growth does not occur in the study area, it is anticipated to occur elsewhere in the region where environmental effects could be equal or greater than the proposed Plan.

Reduced Hazardous Waste Alternative

Reducing the size of the study area, or restricting the extent of potential development within the study area could result in less clean up and hazardous waste disposal originating from the geographic area. This reduced hazardous waste alternative would not necessarily be the environmentally superior alternative for two reasons. First, there is the potential that if development were to occur elsewhere, there could be hazardous waste disposal from these activities, depending on the location of the future development. Second, if the study area were not to be redeveloped to the same level, there would be less opportunity to remediate the existing contamination in the area, and the long-term beneficial effects due to implementation of the Redevelopment Plan would not occur at the same level. Thus the lack of these beneficial effects could offset the potential (unknown) lessening of significant effects on hazardous waste disposal that could occur. In addition, it cannot be reasonably ascertained whether the No Project Alternative would reduce significant cumulative hazardous waste disposal effects. Thus this alternative was rejected from further analysis in this EIR.

Reduced Regional Air Emissions

If future growth and development were to occur elsewhere, not within the study area, there could be increased commute travel to other communities, resulting in potentially equal to or greater air emissions than with implementation of the Redevelopment Plan. In addition, as part of the Redevelopment Plan, it is anticipated that local persons would be employed and

trained, which would bring workers close to their place of employment, and which could then reduce the total vehicle miles travelled and associated air emissions. These effects, however, are somewhat speculative and difficult to quantify. They should be noted in the EIR under the discussions of regional air quality impacts; however, it is not certain whether an alternative which would accommodate less growth would actually be environmentally superior for regional air quality effects. Thus this alternative is noted but was rejected from further analysis because it cannot be reasonably ascertained whether it would reduce significant ozone emissions.

9.4 THE NO PROJECT ALTERNATIVE

CEQA requires the analysis of a No Project Alternative. For purposes of impact analysis in this EIR, the No Project Alternative assumes that the Coliseum Area Redevelopment Plan would not be implemented. Any development that takes place in the proposed study area would take place without the benefits of the proposed Redevelopment Plan.

9.4.1 Description

Under the No Project Alternative, new and expanded commercial and industrial growth, and new housing development would take place without the benefit of the proposed Redevelopment Plan. Additional business growth and housing would still be created within the study area; however, it would be created without the business or housing incentives as provided by the proposed Redevelopment Plan.

9.4.2 Environmental Impacts

Land Use

The extent of projected business and housing development in the study area would decrease under the No Project Alternative. Unplanned development and development due to land use impacts under this alternative would be similar to those of the proposed Redevelopment Plan except that policies and implementing actions to reduce industrial/residential conflicts would

not be implemented. Thus the No-Project Alternative would likely have more land use conflicts than with the plan.

Employment, Population and Housing

Under the No Project Alternative, job growth due to the proposed Redevelopment Plan would decrease by about 5,000 employees and new housing units would decrease by about 700 units. While no adverse effects on population and housing would result from the No Project Alternative, beneficial impacts associated with the business and housing development of the proposed Redevelopment Plan would not occur.

Transportation

Future traffic volumes on study area roads are included in Section 4.4 Transportation and Circulation. The level of service would degrade on many of the study area road segments under cumulative conditions. These significant cumulative effects would be essentially the same as with the No Project Alternative as with Redevelopment Plan conditions.

Air Quality

Construction-related dust and equipment emissions due to the proposed Redevelopment Plan would not occur under this alternative. Regional vehicular emissions associated with long-term Plan-related traffic, which was determined to be a significant impact, would be avoided, and there would be no impediment to attainment of ozone standards within the air basin as required by the 1991 *Bay Area Clean Air Plan* associated with the Redevelopment Plan. However, regional emissions resulting from changes in employment and traffic patterns in the future without the Plan would remain significant under the No Project Alternative. Localized carbon monoxide concentrations would not be significant in the future, with or without the Redevelopment Plan, due to technological improvements in emissions control. There could probably be less potential for new stationary source emissions in the study area under this alternative compared to the proposed Redevelopment Plan.

Noise

Existing noise incompatibility problems that were identified in the EIR are projected to continue in the future, and will continue even if the proposed Redevelopment Plan is not implemented. Plan-related traffic noise increases along study roadways would be avoided under this alternative; however, these noise increases were determined to be less-than-insignificant.

Short-term construction-related and long-term operational noise increases that would result from specific project-related development or expansion projects would not occur under this alternative. Such impacts would be localized in nature and the extent or significance of such impacts would vary with each specific project. Since some development projects would still occur within the proposed Coliseum Redevelopment Area boundaries under this alternative, such noise increases could still occur at project-specific locations.

Energy

The increase in energy consumption attributable to the proposed Redevelopment Plan would not occur under this alternative. However, the increase in energy consumption due to cumulative development in the study area would still occur.

Drainage and Water Quality

The hydrologic impacts of the No Project Alternative would be generally similar to, but lesser in scale than, those of the Redevelopment Plan. No additional businesses would be expanded or constructed other than at currently projected levels. This would reduce the amount of surface and groundwater potentially polluted and the amount of surface exposed during construction. Anticipated future development, not under the proposed Redevelopment Plan would be subject to the same drainage and water quality constraints as the proposed plan. These drainage and water quality constraints would be more likely to be avoided due to the reduced amount of development in the study area. The extent of pollutant runoff and siltation would be less under this alternative than with the proposed Redevelopment Plan.

Hazardous Materials

The existing conditions regarding the presence of hazardous materials in the Coliseum Redevelopment Area associated either with existing business operations or with previous land uses, would remain as is. Hazardous materials handling associated with existing businesses would continue to be regulated, although the potential remains for accidental spills, unauthorized releases or mishaps to occur regardless of Redevelopment Plan implementation. For identified sites (i.e., those listed in regulatory files) potentially contaminated with hazardous materials, investigations and remediation would continue as required by regulatory agencies. The potential to encounter additional hazardous materials sites due to development or expansion of businesses within the study area would be less than with the Redevelopment Plan. As with any proposed development requiring demolition, excavation or grading, there would be a potential of encountering hazardous materials in the study area, regardless of Redevelopment Plan implementation. Improvements to existing facilities for handling hazardous materials associated with the Redevelopment Plan would not occur. Because development is expected to occur even without implementation of the proposed Redevelopment Plan this alternative would have the same potentially significant effects on cumulative hazardous waste disposal as for the plan. This alternative would provide less remediation of contaminated sites, and so the beneficial long-term effects of cleaning up the study area would be reduced.

Biotic Resources

Because there would be fewer employees and residents, and less business and housing expansion in the study area under the No Project Alternative, vegetation and wildlife impacts would be expected to be less than with the proposed Redevelopment Plan. Impacts would continue to be less-than-significant with this alternative, the same as with the Plan.

Cultural Resources

Impacts to archaeological resources would be expected to be less under the No Project Alternative than with the proposed Redevelopment Plan because less new development with subsurface excavation would be expected to occur.

The impacts to historic and architectural resources that could occur under the No Project Alternative would be generally similar to those of the proposed Redevelopment Plan. Individual projects that would otherwise occur without the assistance of the proposed Redevelopment Plan would continue to pose potential adverse impacts to historic resources in the study area. Existing procedures required for development that might affect National Register listed properties, City Landmarks, Study List properties, and S-7 Preservation Combining Zones would continue to protect these historic resources. It is anticipated that there would be less development within the study area if the proposed Redevelopment Plan were not implemented, which could lead to a reduced potential for the total number of resources that could be impacted.

Public Utilities

Development under the No Project Alternative would be generally similar to, but lesser in scale than, those of the proposed Redevelopment Plan. This alternative would generate less demand for potable water supplies, and generate smaller quantities of wastewater and solid waste than would the proposed Redevelopment Plan.

Public Services

Development under the No Project Alternative would be generally similar to, but lesser in scale than, those of the proposed Redevelopment Plan. This alternative would result in less future demand for police, fire, emergency medical services, parks and schools, than would the proposed Redevelopment Plan. However, fewer infrastructure improvements would be made than with the Redevelopment Plan.

9.4.3 Reasons for Rejecting This Alternative

This alternative was rejected because it would effectively nullify the intended goals of the proposed Redevelopment Plan, which would be to retain, revitalize and expand business and housing activity in the study area, creating jobs for disadvantaged individuals, providing housing, reducing blight, and reducing industrial/residential conflicts. Although it is likely that development within the study area will still take place, it is projected that employment

would be reduced by about 5,000 new jobs. There would be about 700 fewer new housing units and blight and industrial/residential conflicts would continue. Overall, because this alternative would not meet the program's Redevelopment Plans's objectives, this alternative would be considered less desirable than the proposed Redevelopment Plan and thus is rejected by the City.

9.5 NO RESIDENTIAL DEVELOPMENT

9.5.1 Description

This Alternative would be identical to the Redevelopment Plan except that strategies and actions to remove blight from residential neighborhoods would not be adopted or implemented. The following strategies to remove blight would not be included in this Alternative: to provide capital to support Mortgage Assistance and First Time Homebuyers Assistance Programs, provide capital to support infill construction of ownership housing; provide capital to support new residential development; provide capital to support Home Maintenance and Improvement Program; Provide capital for acquisition and rehabilitation of existing substandard housing, and some rezoning strategies; provide capital for landscaping and buffering the residential/industrial edge (except along 81st Avenue).

9.5.2 Environmental Impacts

Land Use

There would be no net new housing units due to the No Residential Development Alternative compared to 700 new housing units with the Redevelopment Plan. There would be the same amount of net new retail, office and industrial space as with the Redevelopment Plan. Additional housing could be created within the study area; however, it would not be due to implementation of the Redevelopment Plan.

Employment, Population and Housing

Under the No Residential Development Alternative, job growth would be the same as with the Redevelopment Plan and new housing units would decrease by about 700 units resulting in fewer residents than with the Redevelopment Plan. No beneficial effects due to housing development would occur as would with the Redevelopment Plan. Conflicts of new housing with existing industrial uses would not occur.

Transportation

Traffic due to commercial and industrial development would be the same as with the Redevelopment Plan under the No Residential Development Alternative. There would be about seven percent fewer total and p.m. peak hour trips in the study area due to no new residential units. Impacts along Fruitvale Avenue, East 14th Street, 98th Avenue and 105 Avenue would have the greatest traffic reductions compared to the Redevelopment Plan. There would also be reductions along other connector streets between East 14th Street and I-880, and on I-880 with this Alternative compared to the Redevelopment Plan.

Air Quality

There would be about four percent fewer emissions of carbon monoxide, hydrocarbons, nitrogen oxides and other air pollutants with the No Residential Development Alternative compared to the Redevelopment Plan. This Alternative would still be considered to contribute to significant regional ozone effects, as would the Redevelopment Plan, although to a lesser extent. As with the Redevelopment Plan, this Alternative would contribute to less-than-significant local carbon monoxide impacts along local roadways.

Noise

The No Residential Development Alternative would result in a four percent reduction in trips and a corresponding decrease in noise effects compared to the Redevelopment Plan. There would be a higher percent reduction along Fruitvale Avenue, East 14th Street, 98th Avenue and 105 Avenue compared to other streets in the study area and also along other connector

streets between East 14th Street and I-880. As with the Redevelopment Plan, there would be no significant noise effects with this Alternative.

Energy

There would be about 15 percent less energy consumed for construction with the No Residential Development Alternative compared to the Redevelopment Plan because no residential construction would occur. There would be about 25 percent less energy consumed for operation of this Alternative compared to the Redevelopment Plan because there would be no new residential units or residential-related trips with this Alternative.

Drainage and Water Quality

The hydrologic impacts of the No Residential Development Alternative would be similar to, but possibly lesser in scale than, those of the Redevelopment Plan. No residential units would be constructed which could reduce the amount of surface and groundwater pollution, and the amount of surface exposed during construction. However, there are no open creek or slough channels in the areas in which residential development would be anticipated to occur. The extent of pollutant runoff and siltation would be less under this Alternative than with the proposed Redevelopment Plan.

Hazardous Materials

The potential to encounter additional hazardous materials sites due to development or expansion of businesses within the study area would be same as with the Redevelopment Plan because business expansion would be the same as with the Plan under the No Residential Development Alternative. There would be the same improvements for handling hazardous materials as with the Redevelopment Plan. There would be no residential development with this Alternative compared with the Redevelopment Plan. This could possibly result in some reduction of developing a site with hazardous materials, although the difference between the effects for this Alternative and the Redevelopment Plan would be negligible because most hazardous material sites are in industrial areas.

Biotic Resources

Because there are no open creek channels or sloughs in the areas that would be developed with residential uses under the Redevelopment Plan, there would be no expected change in impacts of the No Residential Development Alternative compared to impacts of the Redevelopment Plan.

Cultural Resources

Impacts to archaeological resources would be expected to be less under the No Residential Development Alternative than with the proposed Redevelopment Plan because there would be less new development with subsurface excavation that would be expected to occur.

Impacts to historic and architectural resources that could occur under the No Residential Development Alternative would be similar to those of the proposed Redevelopment Plan. There would be less development expected to occur around the sensitive Fruitvale BART Station Target Area, and other historically sensitive areas, so impacts to historic structures would be anticipated to be less under this Alternative than with the Redevelopment Plan.

Public Utilities

Development under the No Residential Development Alternative would be less than with the Redevelopment Plan because there would be no residential development. Thus this alternative would generate less demand for potable water supplies, and generate smaller quantities of wastewater and solid waste than would the proposed Redevelopment Plan.

Public Services

Development under the No Residential Development Alternative would be less than with the Redevelopment Plan because there would be no residential development. Thus this alternative would generate less future demand for police, fire, emergency medical services, parks and schools than would the proposed Redevelopment Plan.

9.5.3 Reasons for Rejecting This Alternative

This Alternative was rejected because it would not provide for the rehabilitation or new construction of residential units. Blighted conditions would be anticipated to continue in residential areas. There would be anticipated to be 700 fewer housing units and some industrial/residential conflicts would continue. This Alternative is rejected by the City because it would not remove blight from residential areas.

9.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Based on the above discussion, the No Residential Development Alternative in conjunction with mitigation measures identified for the Coliseum Area Redevelopment Plan would be the Environmentally Superior Alternative. It should be noted that the No Residential Development Alternative would not reduce any significant effects of the project to a less-than-significant level and that blight conditions would be worse in the study area with this Alternative.

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11.0 Draft EIR Distribution List

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Community Services Division

OGS
James Ashley

Office of Finance
Gary Breaux

Fire Department
Jerry Blueford, Fire Marshal

Office of the Mayor
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Oakland Public Library
Main
125 14th Street

Oakland Public Library
Brookfield Branch
9600 Edes Avenue

Oakland Public Library
Martin L. King, Jr. Branch
6833 East 14th Street

Oakland Public Library
Melrose Branch
4805 Foothill Boulevard

Oakland Public Library
Elmhurst Branch
1427 88th Avenue

Oakland Public Library
Latin American Branch
1900 Fruitvale Avenue

Office of Parks & Recreation
Cleve Williams, Director
1520 Lakeside Drive

Landmarks Preservation Advisory Board
Helaine K. Prentice

Councilmember Nate Miley
Oakland City Council

Councilmember Natalie Bayton
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Councilmember Desi Woods-Jones
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Councilmember Sheila Jordon
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11.0 Draft EIR Distribution List

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President
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Waste Management of Alameda County

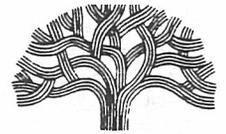
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William Johnson, Division Vice President

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Ron Foster, Senior Transportation Planner

APPENDIX A
NOTICE OF PREPARATION



OFFICE OF PLANNING & BUILDING • 1330 BROADWAY • OAKLAND, CALIFORNIA 94612

City Planning Services

**NOTICE OF PREPARATION
OF DRAFT ENVIRONMENTAL IMPACT REPORT**

(510) 238-3941
TDD 839-6451
FAX: 238-6538

The Oakland Office of Planning and Building is preparing an Environmental Impact Report (EIR) for the project identified below, and we are requesting your comments on the scope and content of the EIR. We have prepared an "Initial Study" that identifies areas of probable environmental effects. These probable environmental effects are summarized below. The Initial Study is available at the Planning Division of the Office of Planning and Building.

The City of Oakland is the Lead Agency for this project, which means that we are the public agency with the greatest responsibility for either approving it or carrying it out. We are sending this notice to Responsible Agencies and other interested parties. Responsible Agencies are those public agencies, besides the City of Oakland, that also have a role in approving or carrying out the project. Responsible Agencies will need to use the EIR that we prepare when considering approvals related to the project.

When the Draft EIR is published, it will be sent to all Responsible Agencies and to others who respond to this Notice of Preparation or who otherwise indicate that they would like to receive a copy.

Please send us any response you may have within 30 days from the date you receive this notice. Your response, and any questions or comments, should be directed to Stanley Muraoka, Oakland Office of Planning and Building, Planning Division, 421 14th Street, Oakland, CA 94612, telephone 273-3940. Please reference case number ER93-22 in your response.

PROJECT TITLE: Coliseum Area Redevelopment Plan

PROJECT LOCATION: Bounded by Fruitvale Avenue on the north, the rear property lines of those properties with frontage on the northern (or eastern) side of East 14th Street on the east, the Oakland/San Leandro city boundary on the south, and the Oakland International Airport and the Oakland/Alameda city boundary on the west. (See map on reverse.)

PROJECT SPONSOR: Redevelopment Agency of the City of Oakland

PROJECT DESCRIPTION: The proposed Coliseum Area Redevelopment Plan includes industrial land assembly, infrastructure improvements, housing activity, and environmental improvements for a 6,500 acre area in the City of Oakland, consisting of seven planning districts. Some redevelopment actions would occur throughout the Coliseum Area, while other actions would focus on identified "target areas" or nodes within each planning district.

PROBABLE ENVIRONMENTAL EFFECTS: Increases in traffic and related noise and air quality effects; temporary traffic circulation, air quality, and noise impacts during construction; increased demand for public services and utilities; effects on land use and policy conformity; effects on population and employment; increases in housing resources; effects of hazardous materials; effects on surface hydrology, drainage, and water quality; seismicity; effects on biotic resources; effects on cultural and historic resources; increased demand for energy from nonrenewable resources; cumulative effects; and growth inducement.

DATE: March 24, 1994

File No. ER93-22

ANU RAUD

Environmental Review Coordinator

COLISEUM REDEVELOPMENT PLAN AREA

north 



APPENDIX B
INITIAL STUDY

City of Oakland
Oakland, California

File No. ER93-22
Ref. No. _____

INITIAL STUDY AND ENVIRONMENTAL REVIEW CHECKLIST
California Environmental Quality Act (CEQA)

- I. PROJECT PROPONENT: Redevelopment Agency of the City of Oakland
- I. PROJECT NAME: Coliseum Area Redevelopment Plan
- III. PROJECT ADDRESS AND LOCATION: Bounded by Fruitvale Avenue on the north, the rear property lines of those properties with frontage on the northern (or eastern) side of East 14th Street on the east, the Oakland/San Leandro city boundary on the south, and the Oakland International Airport and the Oakland/Alameda city boundary on the west.
- IV. LEAD AGENCY: City of Oakland
Office of Planning and Building
421 14th Street, Room 100
Oakland, CA 94612
Agency Contact: Stanley Muraoka Telephone No. (510) 238-3940

V. ENVIRONMENTAL DETERMINATION:

On the basis of this initial environmental evaluation:

- I find that the proposed project *could not* have a significant effect on the environment, and a Negative Declaration will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the attached *mitigation measures* have been incorporated into the project. Therefore, a **Mitigated Negative Declaration** will be prepared.
- I find that the proposed project *may* have a significant effect on the environment, and an **Environmental Impact Report (EIR)** is required to assess the effects on the environment.

ALVIN D. JAMES
Deputy Director for City Planning

By: ANU RAUD
Environmental Review Coordinator



3/24/94

Signature

Date

VI. DESCRIPTION OF THE PROJECT: The main goals of the proposed Coliseum Area Redevelopment Plan are to: upgrade the Coliseum Area's overall economic and physical climate; retain existing businesses and industries; attract new firms to the area; increase job opportunities in the industrial and commercial areas; provide opportunities for Oakland residents to participate in the financial gain of real estate development projects in the area; expand the City's tax base; upgrade existing blighted housing; expand the City's supply of low- and moderate-income housing; enhance the revitalization of the East 14th Street commercial corridor; improve the compatibility of adjacent, diverse land uses; improve accessibility to industrial and commercial uses; improve traffic safety throughout the area; and to capitalize on opportunities for joint development mixed-use projects. To these ends, the proposed redevelopment plan will include industrial land assembly, infrastructure improvements, housing activity, and environmental improvements for a 6,500 acre area in the City of Oakland, consisting of seven planning districts. Some redevelopment actions would occur throughout the Coliseum Area, while other actions would focus on identified "target areas" or nodes within each planning district.

VII. DESCRIPTION OF THE ENVIRONMENTAL SETTING: The proposed Coliseum redevelopment area is approximately 6,500 areas. Most of the area's residential neighborhoods are concentrated along East 14th Street, with the exception of Brookfield Village, which is near the intersection of 98th and Edes Avenues. Retail business activity is concentrated along East 14th Street. Industrial and commercial businesses are generally found along San Leandro Boulevard, or near the Oakland airport on the south side of Interstate 880. The area also includes the Fruitvale and Coliseum BART stations.

There are several natural or open creeks within or adjacent to the proposed redevelopment area, including the Peralta, Courtland, Seminary, Lion, Stonehurst, and San Leandro creeks, and the Arroyo Viejo. In addition, San Leandro Bay is identified as having major plant and animal communities. San Leandro Bay is also the location of the Martin Luther King, Jr. Regional Shoreline Park, administered by the East Bay Regional Park District.

VIII. ENVIRONMENTAL EFFECTS

Earth. Will the proposal result in:

1. Unstable earth conditions, including mudslides, landslides or changes in geologic substructures either on or off-site?

Yes No Maybe

Comment: According to the U.S. Soils Conservation Service Soils Classification, the majority of the soils within the redevelopment area are characterized as unconsolidated deposits of fine sand, silt, silt with gravel, and silty clay. These soils have certain development limitations that should be recognized by the proposed engineering and structural design prior to construction. With these soils characteristics kept in mind, the development of the proposal should not have a significant adverse effect on the site.

The redevelopment area is located outside of the geographical areas of the City that are most susceptible to landslides and severe erosion as delineated in the Environmental Hazards Element of the Oakland Comprehensive Plan. Therefore, the proposal should not have a significant adverse effect.

Source: Environmental Hazards Element of the Oakland Comprehensive Plan; U.S. Soils Conservation Service Soils Maps, Western Alameda County

2. Any increase in wind or water erosion of soils, either on or off-site, due to increased water runoff caused by conversion of pervious to impervious surfaces or to other factors? X
Yes No Maybe

Comment: For individual redevelopment projects, onsite erosion caused by wind or by increases in water runoff may be temporarily increased due to construction period activities. Appropriate erosion control measures will be included as part of the proposed project. Long-term erosion potentials would be addressed through installation of project landscaping and storm drainage facilities, both of which would be designed to meet all applicable regulations.

Source: Oakland Redevelopment Agency.

3. Changes in deposition or erosion that result in changes in siltation, deposition or erosion which may modify the channel of a creek, inlet, lake, or any other waterway? X
Yes No Maybe

Comment: For individual redevelopment projects, onsite erosion by wind or water may be temporarily increased due to construction period activities. Appropriate erosion control measures will be included as part of the proposed project. Long-term erosion potentials would be addressed through installation of project landscaping and storm drainage facilities, both of which would be designed to meet all applicable regulations.

Source: Oakland Redevelopment Agency.

4. Major changes in topography or ground surface relief features, or disruptions, displacements, compaction or overcovering of the soil? X
Yes No Maybe

Comment: New construction will require grading, excavation, or other ground disturbance. The extent of the disturbance will depend on the nature, location and specific circumstances of each project.

Source: Site visits on 2/94 and 3/94.

5. Construction on loose fill or other unstable land that might expose people or property to geologic hazards, such as earthquakes, liquefaction or ground failure, or similar seismic hazards? X
Yes No Maybe

Comment: That part of the proposed redevelopment area within the Port of Oakland's jurisdiction is located on fill material over bay mud or former marshland. The majority of the redevelopment area is composed of unconsolidated deposits of fine sand, silt, silt with gravel, and silty clay which depending on site-specific conditions of soils compaction and composition is considered generally stable; however, the soils might be subject to possible liquefaction. These inherent adverse potentials would be addressed through foundation design, which could include use of subsurface piles.

Source: Environmental Hazards Element of the Oakland Comprehensive Plan; Site visits on 2/94 and 3/94.

6. Construction within one-quarter mile of an earthquake fault?
 Yes No Maybe

Comment: The redevelopment area is located between 1 to 3 miles from the Hayward fault, and is outside of the Alquist-Priolo Geologic Hazards Zone Act Special Studies Zone. Therefore, the project will not be required to meet the development standards and criteria within the Special Studies Zone.

Source: Alquist-Priolo Special Studies Zone Map.

7. Substantial depletion of a nonrenewable natural resource or inhibition of its extraction?
 Yes No Maybe

Comment: The City of Oakland is generally a built out, urban community. The nature of development in Oakland is typically in-fill. Therefore, this proposal will not significantly deplete a nonrenewable resources or inhibit its extraction.

The proposed redevelopment area will not include nor encourage any on-site quarrying, mining, dredging, or extraction activity. Therefore, the redevelopment plan will not substantially deplete or inhibit the extraction of a nonrenewable natural resource.

Source: Open Space, Conservation and Recreation (OSCAR) Element of the Oakland Comprehensive Plan; Redevelopment Plan Description.

Air and Water. Will the project result in:

8. Substantial air emissions, deterioration of ambient air quality or the creation of objectionable odors?
 Yes No Maybe

Comment: Construction of individual redevelopment projects could result in temporary but substantial dust emissions. Such potentials would be addressed by implementation of dust control measures. Some of the manufacturing activities permitted or conditionally permitted by the Zoning Regulations may have the potential to produce adverse effects on air quality. Appropriate use permit criteria, performance standards, and standard conditions of approval would be expected to reduce potential impacts to the extent possible.

Source: Bay Area Air Quality Management District (BAAQMD) Air Quality and Urban Development; Plan description.

9. Alteration of air movement, moisture, temperature, or any change in climate, either locally or regionally?
 Yes No Maybe

Comment: The scale of individual projects within the proposed redevelopment area will not result in any significant alteration in air movement or changes in climate.

Source: Staff field visits on 2/94 and 3/94; Plan description.

10. Discharge into surface waters resulting in substantial degradation of surface water quality, including but not limited to turbidity, absorption rates, drainage patterns, or the rate or amount of surface runoff?
 Yes No Maybe

Comment: The Oakland Comprehensive Plan identifies several natural or open creeks within or adjacent to the proposed redevelopment area. The Open Space, Conservation & Recreation Element identifies the Peralta, Courtland, Seminary, Lion, Stonehurst, and San Leandro Creeks and the Arroyo Viejo as traversing the redevelopment area before draining into San Leandro Bay. Development in proximity to these areas could result in adverse effects on water quality, drainage patterns, and water runoff. Temporary discharges into surface waters could occur due to construction period activities. Appropriate drainage control measures will be included as part of proposed redevelopment projects. During project operation, discharges would be precluded through installation of storm drainage facilities designed to meet all applicable regulations.

Source: Oakland Redevelopment Agency.

11. Alterations to the course of flood waters, or the exposure of people or property to water related hazards such as flooding or tidal waves?

_____	_____	_____
Yes	No	X Maybe

Comment: Most of the proposed redevelopment area is located in Zones B and C as shown on the Federal Insurance Rate Map (FIRM floodplain maps). In addition, the Environmental Hazards Elements indicates that most of the redevelopment area is not in an area of potential inundation by tsunamis.

Some areas of inundation are mapped within proximity of the network of open creeks in the redevelopment area; however, few locations are expected to have flood depths that would exceed one to two feet. Therefore, the most serious damage resulting from a 100-year flood would be potential damage to property. Redevelopment activities for new construction would be required to prepare engineered designs for the estimated flood elevations.

Source: Fire Insurance Rate Map (FIRM) Floodplain Maps, Federal Emergency Management Administration (FEMA); Environmental Hazards Element of the Oakland Comprehensive Plan.

12. Change in groundwater quantity, through direct addition or withdrawal, or interception of an aquifer by cuts or excavation?

_____	_____	_____
Yes	No	X Maybe

Comment: The source of potable water for the City is supplied by EBMUD. In this built out, urban area, no groundwater under the City is used as potable water.

Some redevelopment activities may involve cuts or excavations to depths that might intercept an aquifer. Such effects could be mitigated by applicable use permit criteria, performance standards, and standard conditions of approval.

Source: Project description; "Updated Water Supply Management Program EIR," EBMUD, September 1993.

Biotic. Will the project result in:

13. Reduction in quantity or diversity of plant and animal species in the project vicinity, interfere with migratory or other natural movement patterns, degrade existing habitats or require extensive vegetation removal?

_____	_____	_____
Yes	No	X Maybe

Comment: Although the proposed redevelopment area is within an essentially built out, urbanized area where former biotic habitat and natural vegetation has been replaced with wildlife that have adapted to the urban setting and with non-native vegetation, some individual activities may disrupt migratory or other natural movement patterns.

Source: OSCAR Element of the Oakland Comprehensive Plan; Site visits on 2/94 and 3/94.

14. Reduce the numbers of any unique, rare or endangered species of plants or animals? Yes No X
Maybe

Comment: San Leandro Bay includes major grassland, salt marsh, and tidal mudflat habitats. Rare and endangered species which have been sighted in these habitats include the California Clapper Rail, the Brown Pelican, and the Least Tern. The activities permitted and conditionally permitted by the Zoning Regulations and proposed by the redevelopment plan may have the potential to adversely affect the plant and animal communities of San Leandro Bay. Adverse effects could be mitigated by applicable use permit criteria, performance standards, and standard conditions of approval.

Source: OSCAR Element of the Oakland Comprehensive Plan; California Department of Fish and Game (CDFG), Natural Diversity Database; Site visits on 2/94 and 3/94.

15. Introduction of new species of plants or animals into an area, or result in a barrier to the replenishment of existing plant species, or the migration or movement of animals? Yes No X
Maybe

Comment: The creeks within and adjacent to the proposed redevelopment area and San Leandro Bay provide habitat for major plant and animal communities. The activities permitted and conditionally permitted by the Zoning Regulations and proposed by the redevelopment plan may have the potential to adversely affect the plant and animal communities of natural or open creeks in or near the individual projects, or of San Leandro Bay. Adverse effects could be mitigated by applicable use permit criteria, performance standards, and standard conditions of approval.

Source: Site visits on 2/94 and 3/94 .

16. Deterioration to existing aquatic or wildlife habitat? Yes No X
Maybe

Comment: Due to the locations of natural and open creeks and parts of San Leandro Bay within the proposed redevelopment area, development in proximity to these areas could result in adverse effects on water quality, drainage patterns, and water runoff. Temporary discharges into surface waters could occur due to construction period activities. Appropriate drainage control measures will be included as part of proposed redevelopment projects. During project operation, discharges would be precluded through installation of storm drainage facilities designed to meet all applicable regulations.

Source: OSCAR Element of the Oakland Comprehensive Plan; Site visits on 2/94 and 3/94.

Noise. Will the project result in:

17. Increase in existing ambient noise levels near sensitive noise receptors? Yes No X
Maybe

Comment: Some of the commercial and manufacturing activities resulting from the proposed redevelopment plan may have the potential to introduce substantial increases in ambient noise levels in the area, particularly during construction periods. Such effects might be mitigated by applicable use permit criteria and performance standards, and appropriately sensitive site design. On the other hand, redevelopment efforts to introduce mixed-use developments near transportation nodes, and improvements to circulation and traffic patterns may serve to mitigate existing areas of noise conflict between incompatible land uses.

Source: Noise Element of the Oakland Comprehensive Plan; Plan description; Site visits on 2/94 and 3/94.

18. Exposure of people to severe noise levels? Yes No Maybe

Comment: Some redevelopment activities may result in substantial increases in ambient noise levels in the area, particularly during construction periods. Such effects might be mitigated by applicable use permit criteria and performance standards, and appropriately sensitive site design. On the other hand, redevelopment efforts to introduce mixed-use developments near transportation nodes, and improvements to circulation and traffic patterns may serve to mitigate existing areas of noise conflict between incompatible land uses.

Source: Site visits on 2/94 and 3/94; Oakland Redevelopment Agency.

Light and Glare. Will the project result in:

19. Produce new light or glare in areas sensitive to light and glare (i.e., residents near industrial and commercial uses, freeways, and parks)? Yes No Maybe

Comment: Individual redevelopment projects may introduce light and glare to a sensitive area. Such effects would be mitigated by applicable use permit criteria and performance standards, and appropriately sensitive site design.

Source: Site visits on 2/94 and 3/94.

20. Produce shade and shadow, or otherwise diminish sunlight or solar access? Yes No Maybe

Comment: Individual redevelopment projects could result in building heights, setbacks and bulk that are not consistent with surrounding buildings. Such effects would be mitigated by applicable use permit criteria and performance standards, and appropriately sensitive site design.

Source: Plan description; Site visits on 2/94 and 3/94.

Land Use and Socioeconomic Factors. Will the project result in:

21. Conflict with approved plans for the area or the Oakland Comprehensive Plan or alter the present or planned land use of an area? Yes No Maybe

Comment: Although redevelopment plans are required by statute to conform to the general plan, an analysis would be required to determine the degree of consistency between redevelopment activities and goals and policies of the Oakland Comprehensive Plan.

Source: Land Use Element of the Oakland Comprehensive Plan

22. Require relocation of residents and/or businesses, or affect existing housing or create a demand for additional housing? Yes No Maybe

Comment: Some businesses will be displaced and relocated by redevelopment activities in the area. The preparation of the area redevelopment plan includes feasible provisions for relocation.

Source: Site visits on 3/14/94.

23. Cause a substantial alteration in neighborhood land use, density or character? Yes No Maybe

Comment: The purpose of the proposed redevelopment plan is to alter the land use, density, and character of the Coliseum area by improving business, employment, and residential opportunities.

Comment: Some of the residential, commercial, and manufacturing activities resulting from the redevelopment plan, may have the potential to generate substantial volumes of vehicular traffic which might adversely affect circulation patterns. These impacts could be mitigated by use permit criteria and conditions of approval, and by circulation improvement projects. Major transportation issues include freeway access, access to property, and pedestrian and bicycle access. It is expected that individual redevelopment projects will be designed to reduce associated adverse effects to the extent possible.

Source: OPW, Traffic Engineering Division; Plan description.

28. Have a substantial impact on existing transportation systems or circulation patterns?

 Yes No X
 Maybe

Comment: Some of the residential, commercial, and manufacturing activities resulting from the redevelopment plan, may have the potential to generate substantial volumes of vehicular traffic which might adversely affect existing streets, transit hubs, and circulation patterns. These impacts could be mitigated by use permit criteria and conditions of approval, and by circulation improvement projects. It is expected that individual redevelopment projects will be designed to reduce associated adverse effects to the extent possible. Individual redevelopment projects may necessitate improvements to local area streets and intersections.

Source: OPW, Traffic Engineering Division; Plan description.

Public Services and Utilities: Will the project have an effect upon, or result in a need for new or altered public services in any of the following areas:

29. Impose a burden on public services or facilities including fire, solid waste disposal, police, schools or parks?

 Yes No X
 Maybe

Comment: The redevelopment plan would result in significant new demands on public services and facilities. Individual redevelopment projects would coordinate with affected service providers to ensure continued adequate service to the project and vicinity.

Source: Site visits on 2/94 and 3/94; Plan description.

30. Impose a burden on existing utilities including roads, electricity, gas, water and sewers?

 Yes No X
 Maybe

Comment: The redevelopment plan would result in significant new demands on public utilities. Improvements to antiquated infrastructure would serve to minimize some adverse effects on infrastructure capacity. Individual redevelopment projects would coordinate with affected utilities to ensure continued adequate service to the project and vicinity.

Source: Site visits on 2/94 and 3/94; Plan description.

Cultural Resources. Will the project:

31. Destroy, deface or alter a structure, object, natural feature or site of prehistoric historic, architectural, archeological or aesthetic significance?

 Yes No X
 Maybe

Comment: There are a number of structures and districts in the proposed redevelopment area that are listed on the Landmarks Preservation Advisory Board's study list of potential City landmarks. Further, initial findings of the Oakland Cultural Heritage Survey indicate several potential historic properties. Following standard City design review procedures, individual redevelopment projects would be coordinated with the Landmarks Preservation Advisory Board and the Oakland Cultural Heritage Survey, and warranted recommendations and design refinements would be included in the projects.

Source: Oakland Cultural Heritage Survey; Preliminary Citywide Historical and Architectural Inventory; Site visits on 2/14 and 3/94.

32. Result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object? X
Yes No Maybe

Comment: Following standard City design review procedures, individual redevelopment projects would be coordinated with the Landmarks Preservation Advisory Board and the Oakland Cultural Heritage Survey, and warranted recommendations and design refinements would be included in the projects.

Source: Oakland Cultural Heritage Survey; Site visits on 2/94 and 3/94.

Aesthetics. Will the project result in:

33. Involve an increase of 100 feet or more in the height of any structure over any previously existing adjacent structure? X
Yes No Maybe

Comment: Individual redevelopment projects could result in excessive heights. Such effects would be mitigated by applicable use permit criteria and performance standards.

Source: Site visits on 2/94 and 3/94; Plan description.

34. The obstruction of any scenic vista or view open to the public? X
Yes No Maybe

Comment: Individual redevelopment projects could obstruct scenic vistas and views. Such effects would be mitigated by applicable use permit criteria and performance standards, and appropriately sensitive site design.

Source: Scenic Highways Element of the Oakland Comprehensive Plan; OSCAR Element of the Oakland Comprehensive Plan; Land Use Element of the Oakland Comprehensive Plan; Site visits on 2/94 and 3/94.

Energy. Would the project:

35. Use or encourage use of substantial quantities of fuel or energy? X
Yes No Maybe

Comment: Full build out of the redevelopment area under the Zoning Regulations would likely result in the consumption of substantial quantities of fuel and energy.

The proposal will be required to comply with the Title 24: Energy Conservation requirements of the Uniform Building Code. In addition, scale of the proposal is within the capacity of fuel and energy resources, both available now and planned for by Pacific Gas and Electric Company (PG & E).

IX. MANDATORY FINDINGS OF SIGNIFICANCE (An EIR is required if the answer to any of the following questions is "yes" or "maybe".)

- | | | <u>Yes</u> | <u>No</u> | <u>Maybe</u> |
|----|---|------------|--------------|--------------|
| a. | Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of an aquatic or wildlife species, cause a aquatic or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal species, or eliminate important examples of the major periods of California history or prehistory? | — | — | <u> X </u> |
| | <p>Comment: Some of the uses permitted in the proposed redevelopment area by the Zoning Regulations may have the potential to substantially degrade the environment. There may also be some adverse impacts on natural plant and animal communities of creeks running through the area or of San Leandro Bay, although these effects are not likely to seriously threaten or eliminate such communities.</p> | | | |
| b. | Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one that occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future. | — | <u> X </u> | — |
| c. | Does the project have impacts that are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant). | — | — | <u> X </u> |
| | <p>Comment: Individual developments in the redevelopment area might have limited impacts, but if the area is built out to its fullest potential under the Zoning Regulations, the cumulative effect of the redevelopment plan could be significant.</p> | | | |
| d. | Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly? | — | — | <u> X </u> |
| | <p>Comment: Some of the uses permitted in the proposed redevelopment area by the Zoning Regulations may have the potential to cause substantial adverse effects on human beings either directly, such as from noise, air pollution, or relocation, or indirectly such as from traffic generation, or loss of bio-diversity along the open creeks.</p> | | | |

X. DETERMINATION

On the basis of this initial environmental evaluation:

- I find that the proposed project *will not* have a significant effect on the environment, and a Negative Declaration will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the attached *mitigation measures* have been incorporated into the project. Therefore, a **Mitigated Negative Declaration** will be prepared.
- I find that the proposed project *may* have a significant effect on the environment, and an **Environmental Impact Report** is required to assess the effects on the environment.

Name Stanley Muraoka Date March 24, 1994

Title Planner II

APPENDIX C
LAND USE AND ZONING

COLISEUM REDEVELOPMENT AREA - MAJOR LAND USE SENSITIVE RECEPTORS

PARKS AND OPEN SPACE	LOCATION
Brookfield Village Park	Edes Avenue and Jones, one block east of I-880
Coliseum Gardens	66th Avenue and East 14th
Columbian Gardens	Hesket and Empire Roads, south of 98th Avenue
Curt Floor Field	66th Avenue, off of Oakport Drive
Elmhurst Plaza	98th and B Street
Fruitvale Bridge Park	Fruitvale and Alameda Avenues
Galbraith Soccer Field	Doolittle Drive, between Airport and Davis Street
Greenman Recreation Field	66th and 69th Avenues, west of East 14th
John F. Galbraith Municipal Golf Course	Doolittle Drive, between Airport and Davis Street
Martin Luther King, Jr. Shoreline	Doolittle and Swan Way
Rainbow Recreation Center and Park	1500 East 14th
Sobrante Park	470 El Paso Drive
Stonehurst Recreation Center	10314 E Street, near San Leandro Street
Tassafaronga Recreation Center and Park	85th and E Street

SCHOOLS	LOCATION
Brookfield Village Elementary	401 Jones Avenue
Highland Year Round Elementary	8521 A street
Lockwood Year Round Elementary	6701 East 14th
Melrose Elementary	1325 53rd Avenue
St. Louis Bertrand	1445 101st Avenue
Sobrante Park Elementary	470 El Paso Drive
Stonehurst Elementary	10315 E Street
Havenscourt Junior High	1390 66th Avenue
Madison Middle School	400 Capistrano Drive

CHILD CARE CENTERS	LOCATION
Highland Child Care Center	1322 86th Avenue
Lockwood Child Development Center	1125 69th Avenue
Maria's Child Development Center	1358 95th Avenue
Operation Kick-Off	6118 East 14th
Purvoir Family Day Care	1135 75th Avenue
Spanish Speaking Unity Council	1237 37th Avenue
Stonehurst Child Care Center	910 105th Avenue

SENIOR CITIZEN HOMES/CENTERS	LOCATION
Allen Temple Arms	8135 East 14th
Palo Vista Gardens	1100 64th Avenue

HOSPITALS/CONVALESCENT HOMES	LOCATION
None identified within Redevelopment Area	

TABLE C-1 COLISEUM REDEVELOPMENT AREA - ZONING CLASSIFICATIONS

Zoning District (Ordinance Section)	General Description	Major Permitted Uses	Density/FAR/ Height Limit	Parking Requirements
Residential				
R-30 One-Family Residential (Sections 3550-3574)	Single-family dwellings in desirable settings for urban living; typically appropriate in developed lower density residential areas.	Single-Family Dwellings	One unit per 5,000 square foot lot.	2 spaces/unit
R-40 Garden Apartment (Sections 3600-3624)	Mixture of single or two-family dwellings and garden apartments, typically in areas of existing lower medium density residential development.	Multi-Family Dwellings	Up to two units per 5,000 square foot lot.	1.5 spaces/unit
R-50 Medium Density Residential (Sections 3650-3674)	Medium density apartments, typically appropriate to areas of existing medium density residential development.	Multi-Family Dwellings (Apartments and Townhouses)	One unit per 1,500 to 2,000 square foot lot.	1.5 spaces/unit
R-60 Medium-High Density Residential (Sections 3750-3774)	Apartments at relatively high densities, typically appropriate to areas with good access to transportation, shopping and community centers.	Multi-Family Dwellings and Apartments	1 unit per 800 square foot. Density bonus of up to 50% from adjacent development rights.	1.5 spaces/unit
R-70 High Density Residential (Sections 3800-3804)	Apartments at high densities, typically appropriate for areas with good access to transportation, major shopping and community centers.	One-, Two- and Multi-Family Dwellings and Apartment Buildings	2.25 FAR; may be exceeded by 10% for lots abutting public parks. 50% density bonus.	1.5 spaces/unit

Zoning District (Ordinance Section)	General Description	Major Permitted Uses	Density/FAR/ Height Limit	Parking Requirements
Commercial				
C-10 Local Retail Commercial (Sections 4400-4424)	Small-scale retail establishments serving frequent recurring needs in convenient locations, typically in small shopping clusters in residential communities.	General food sales, convenience sales and service, medical service, general retail sales, general personal Sales	5,000 square feet per establishment.	Varies, depending on specific activity. (See Section 7513)
C-30 District Thoroughfare Commercial (Sections 4450-4474)	Wide range of retail establishments serving both short and long term needs in convenient locations, typically appropriate along major thoroughfares.	C-10 uses, and consumer laundry and repair service, administrative, business and communication; retail; business supply; automotive fee parking;	Maximum FAR of 3.0 on lots containing residential and non-residential uses. 45 foot height limit.	Varies, depending on specific activity. (See Section 7513)
C-36 Boulevard Service Commercial (Sections 4525-4549)	Variety of office, travel accommodations, and related consumer and business service activities needing visually prominent locations with vehicular access, typically appropriate for wide, landscaped boulevards. Zone is intended to encourage airport related retail and businesses along Hegengberger Road.	C-30 activities, and research service and transient habitation	Maximum FAR of 2.5, may be exceeded by 10% for lots abutting public parks. 50% density bonus.	Varies, depending on specific activity. (See Section 7513)
C-40 Community Thoroughfare (Sections 4550-4574)	Areas with a wide range of retail and wholesale establishments serving short and long term needs in convenient locations, typically appropriate for major thoroughfares.	C-36 activities, plus general wholesale sales, construction sales and service, automotive sales, rental and delivery, automotive servicing, repair and cleaning, automotive fee parking, custom manufacturing activities.	Maximum Floor Area Ratio of 3.0, may be exceeded by 10% for lots abutting public parks. Density Bonus of up to 50% from adjacent development rights.	Varies, depending on specific activity. (See Section 7513)

Zoning District (Ordinance Section)	General Description	Major Permitted Uses	Density/FAR/ Height Limit	Parking Requirements
Industrial				
M-20 Industrial (Sections 5600-5624)	Manufacturing and related establishments with limited external impact in an open and attractive setting, typically appropriate to locations with adjacent residential communities.	C-36 activities, plus custom and light manufacturing.	45 ft. height limit.	1 space/1,500 sq. ft. of floor area
M-30 General Industrial (Sections 5700-5724)	Manufacturing and related establishments, typically appropriate to areas providing sites with good rail and highway access.	C-36 commercial Activities, plus transport and warehousing, custom, light and general manufacturing, and agricultural and extractive activities.	Not applicable	1 space/1,500 sq. ft. of floor area
M-40 Heavy Industrial (Sections 5800-5824)	Manufacturing or related establishments which are potentially incompatible with most other establishments, and is typically appropriate to areas which are distant from residential areas and have extensive rail and shipping facilities.	Scrap Operations, custom, light and general manufacturing, agricultural and extractive activities.	Not Applicable.	1 space/1,500 sq. ft. of floor area
S-4 Design Review Combining District (Section 6250)	Areas which require special treatment and the consideration of relationships between facilities, typically appropriate to areas of special community, historical or visual significance.	Design review required for residential projects of five or more units in R-60, R-70, C-30 and C-36 zones.	Not Applicable	Not Applicable.

APPENDIX D

POPULATION, EMPLOYMENT AND HOUSING

Methodology

Population, employment and housing projections for the proposed Redevelopment Plan were developed in the following manner. First, baseline conditions were established for 1995 without the proposed Redevelopment Plan based on ABAG forecasts for the City of Oakland and the Coliseum Redevelopment Area. The 1995 baseline conditions were established to determine projected employment and population growth that would occur regardless if the Redevelopment Plan were to be implemented. Second, baseline conditions were established for the year 2010, which corresponds to the 15 year analysis period for the EIR. Again, the 2010 baseline conditions were established to estimate growth that would occur by 2010 without implementation of the Redevelopment Plan. Baseline conditions for 2010 relied heavily on ABAG Projections '94 forecasts. In addition, growth accounted for in the Enterprise Zone EIR was also included in the 2010 baseline conditions. The cities of San Leandro and Alameda were also contacted to determine major projects that should be included in the Redevelopment Plan EIR. No major projects were identified, or were defined in sufficient detail (i.e, reuse of the Alameda Naval Air Station) for inclusion in the EIR analysis. Finally, the year 2010 was analyzed with implementation of the Redevelopment Plan to determine the increment of change and growth solely attributable to the Redevelopment Plan.

Under a forecasting approach, population, employment and housing created by the Redevelopment Plan would exceed ABAG and Enterprise Zone projections for the study area. Thus, Redevelopment Area growth represents a net new increment to ABAG growth and Enterprise zone forecasts.

Population, employment and housing estimates that were derived for the Redevelopment Plan are based on land-use changes that are anticipated to occur within the Redevelopment Area by the year 2010. As such, all population, employment and housing estimates are land-use driven. For example, employment estimates were determined by applying standard factors of employment per square footage of land use by category. To the extent possible all

TRANSPORTATION LEVELS OF SERVICE

TABLE E-1
DESCRIPTION
OF TRAFFIC LEVELS OF SERVICE

- *Level-of-service A:* represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.
 - *Level-of-service B:* is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. There is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A.
 - *Level-of-service C:* is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The general level of comfort and convenience declines noticeably at this level.
 - *Level-of-service D:* represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and drivers experience a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
 - *Level-of-service E:* represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver frustration is generally high.
 - *Level-of-service F:* is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion.
-

From: *Highway Capacity Manual*, Special Report No. 209, Transportation Research Board, Washington, DC, 1985.

TABLE E-2

DAILY TRAFFIC-CARRYING CAPACITIES

Type & Group	Signals /mile	Lanes				
		2	3	4		
Type 1 - One-Way Arterials						
Group D	<3.6	24,300	36,720	49,005		
Group E	3.6-4.5	23,760	35,910	48,060		
Group F - not CBD	>4.5	23,895	36,180	48,465		
Group G - CBD	>4.5	24,705	37,395	50,085		
Type & Group	Signals /mile	Lanes/Divided				
		2 undiv	4 div	6 div	8 div	
Type 2 - Two-Way Arterials						
Group A	<0.75	20,880	44,040	66,240		
Group B	0.75-1.5	19,320	40,800	61,440		
Group C	1.6-2.5	18,840	40,080	60,360		
Group D	2.6-3.5	18,480	39,840	60,240	79,680	
Group E	3.6-4.5	17,520	38,520	58,560	77,760	
Group F - not CBD	>4.5	17,520	38,520	58,800	78,000	
Group G - CBD	>4.5	18,480	40,440	61,440	79,680	
Type & Group		Lanes				
			4	6	8	
Type 3 - Freeways						
Group 1 - urban large			88,023	132,090	176,157	218,004
Group 2 - urban small			67,821	101,787	135,753	169,719
Group 3 - non-urban			54,168	81,252	108,225	
Type & Group		Lanes				
		2	4	6		
Type 4 - Two-Way Collectors & Local Streets						
		15,480	31,680	48,120		

Adjustments to Two-Way Arterials (Type 2)

Lanes	Divided	Left Turn Bays	Adjustment Factor
2	Yes	Yes	+5%
2	No	No	-15%
Multi	No	Yes	-5%
Multi	No	No	-20%

Based on Florida Department of Transportation tables with adjustment for observed local peak hour percentages.

TABLE E-3

**LEVEL OF SERVICE SCALE
BASED ON VOLUME/CAPACITY RATIO**

Level of Service	Volume to Capacity Ratio
A	0 - 0.60
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	< 1.00

Source: *Highway Capacity Manual*, Transportation Research Circular 212, Transportation Research Board, 1980

APPENDIX F CRITERIA AIR POLLUTANTS

OZONE (O₃)

Ozone is not emitted directly, but is a secondary pollutant produced through a complex series of photochemical reactions involving hydrocarbons (HC) and nitrogen oxides (NO_x). Significant ozone production generally requires that hydrocarbons and nitrogen oxides are present for about 3 hours in a stable atmosphere with strong sunlight. Ozone is a regional air pollutant because it is transported and diffused by wind concurrently with the photochemical reaction process. Motor vehicles are the major source of ozone precursors in the Bay Area.

Ozone causes eye and respiratory irritation, reduces resistance to lung infection, and may aggravate pulmonary conditions in persons with lung disease. These health effects are particularly acute in children and elderly people exposed to these pollutants.

CARBON MONOXIDE (CO)

Carbon monoxide is an odorless, invisible gas usually formed as the result of incomplete combustion of organic substances. Over 80 percent of the carbon monoxide emitted in the Bay Area comes from motor vehicles. Ambient carbon monoxide concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Carbon monoxide concentrations are also influenced by wind speed and atmospheric mixing. Under inversion conditions, carbon monoxide concentrations may be distributed more uniformly over an area out to some distance from vehicular sources.

High levels of carbon monoxide can impair the transport of oxygen in the bloodstream, thereby aggravating cardiovascular disease and causing fatigue, headaches, and dizziness. Carbon monoxide does not irritate the respiratory tract.

INHALABLE PARTICULATE MATTER (PM₁₀)

Atmospheric particulates are made up of finely divided solids or liquids such as soot, dust, aerosol, fumes, and mists. The largest sources of inhalable particulates in Alameda County include demolition and construction activities, and road dust disturbed from vehicular traffic. On a local basis, inhalable particulate matter standards are violated in the Bay Area.

Inhalable particulate consists of inhalable particulates that can cause adverse health effects, including lung damage.

NITROGEN DIOXIDE (NO₂)

Nitrogen dioxide is the "whiskey brown" colored gas readily visible during periods of heavy air pollution. The major sources of nitrogen dioxide are vehicular, residential, and industrial combustion. The standards for nitrogen dioxide are being met in the Bay Area, and the BAAQMD does not expect these standards to be violated in the future.

Nitrogen dioxide may increase the risk of acute and chronic respiratory disease.

SULFUR DIOXIDE (SO₂)

Sulfur dioxide is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. The major source of sulfur dioxide in the Bay Area is combustion of high-sulfur fuels. Ambient standards for sulfur dioxide are being met throughout the Bay Area, and it is expected that these standards will be violated in the future.

Sulfur dioxide causes aggravation of chronic obstructive lung disease and increased risk of acute and chronic respiratory illness.

LEAD (PB)

Gasoline-powered automobile engines are a major source of airborne lead, although the use of leaded fuel is being reduced. Ambient lead levels have dropped dramatically as leaded

fuels have been phased out for motor vehicles use. Lead concentrations in the Bay Area are below the ambient standard.

Lead can cause hematological (blood-related) effects, such as anemia (iron-deficient blood) and inhibition of enzymes involved in blood synthesis. Lead also may affect the central nervous and reproductive systems.

HAZARDOUS SUBSTANCES REGULATORY FRAMEWORK

Hazardous materials and hazardous wastes are extensively regulated by various federal, state, regional, and local regulations, with the major objective of protecting public health and the environment. The major regulations are presented below.

Federal Regulations

The U.S. Environmental Protection Agency (U.S. EPA) is the lead agency responsible for enforcing federal regulations that affect public health or the environment. The primary federal laws and regulations include: the *Resource Conservation and Recovery Act of 1976 (RCRA)*; the *Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)*; and the *Superfund Act and Reauthorization Act of 1986 (SARA)*. Federal statutes pertaining to hazardous materials and wastes are contained in the *Code of Federal Regulations (40 CFR)*.

These laws require that responsible parties report any known hazardous waste contamination of soil or groundwater as defined in 40 CFR to the U.S. EPA. State and local agencies must also be informed. Any contamination that threatens the public health or environment must be remediated by the responsible party according to standards set by the U.S. EPA. *RCRA* also contains regulations for the safe storage, transportation and disposal of hazardous wastes.

The federally published lists of sites which trace the status of suspected hazardous materials sites or identify sites permitted to generate hazardous wastes include:

- the National Priority List (NPL), which prioritizes sites with significant risk to human health and the environment;

- the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), which tracks contaminated properties identified under *CERCLA* and *SARA*;
- the toxic chemical release inventory which identifies sites which have reported a chemical release to the air, water, or land as required by Title III of the *Superfund Amendments and Reauthorization Act of 1986 (SARA)*;
- the Federal Superfund Liens list (LIENS) which identifies properties where the U.S. EPA has placed a lien because the U.S. EPA has spent money for remedial action or notified the potential of liability for remedial action. This list is compiled by the Office of Enforcement and Compliance Monitoring of the U.S. EPA; and
- the list of facilities permitted to generate hazardous wastes under *RCRA*.

State and Regional Regulations

The USEPA has delegated much of its regulatory authority to the individual states. The Department of Toxic Substance Control (DTSC) of the California Environmental Protection Agency (Cal EPA), formerly a division of the Department of Health Services, enforces hazardous materials and waste regulations in California, in conjunction with the U.S. EPA. The DTSC is responsible for regulating the management of hazardous substances including the remediation of sites contaminated by hazardous substances. California hazardous materials laws incorporated federal standards, but are often more strict than federal laws. The primary state laws include: the *California Hazardous Waste Control Law (HWCL)*, the state equivalent of *RCRA*; and the *California Hazardous Substance Account Act*, the state equivalent of *CERCLA*. State hazardous materials and waste laws are contained in the *California Code of Regulations*, Titles 22 and 26.

The published lists of sites which trace remediation progress within the state include:

- CALSITES, which was previously referred to as the Abandoned Sites Program Information System (ASPIS), and identifies potential hazardous waste sites, which

are then screened by the DTSC. Sites on this list which are designated for no further action by the DTSC were not identified by the database review;

- the Annual Work Plan, formerly known as the Bond Expenditure Plan (BEP), which is a site-specific expenditure plan for the appropriation of *California Hazardous Substance Cleanup Bond Act* of 1984 funds; this list is no longer updated.
- the CORTESE List, which is a compilation of information from various sources listing potential and confirmed hazardous waste of hazardous substance sites, previously maintained by the State Office of Planning and Research. This list is no longer updated.

The Regional Water Quality Control Board (RWQCB) is authorized by the State Water Resources Control Board to enforce provisions of the *Porter - Cologne Water Quality Control Act* of 1969. This act gives the RWQCB authority to require groundwater investigations when the quality of groundwater or surface waters of the state are threatened and to require remediation of the site, if necessary. Both of these agencies are part of the Cal EPA.

The RWQCB maintains the following lists identifying hazardous waste sites that were reviewed:

- the Leaking Underground Storage Tanks (LUST) list, which is required by the Health and Safety Code and tracks remediation status of known leaking underground tanks;
- the Waste Management Unit Discharge System (WMUDS) list of sites which tracks waste management units. The list contains sites identified on the Toxic Pits List, which is required by the *Toxic Pits Cleanup Act* (Katz Bill), and places relatively strict limitations on the discharge of hazardous wastes into surface impoundments, toxic ponds, pits and lagoons (the RWQCB is required to inspect all surface impoundments annually). The WMUDS list also identifies sites targeted by the Solid Waste Assessment Program where there is a possible risk of solid waste disposal sites (landfills) discharging hazardous wastes, threatening either water or air quality.

The RWQCB also maintains other lists of sites that were not reviewed as part of this program level EIR. These lists should be reviewed to identify potential hazardous waste sites before development of a specific area. The lists include:

- the Non-Tank or Unauthorized Toxic Releases List, which traces the status of other hazardous releases to the environment;
- the Toxic Pits List, which is required by the Toxic Pits Cleanup Act (Katz Bill), and places relatively strict limitations on the discharge of hazardous wastes into surface impoundments, toxic ponds, pits and lagoons (the RWQCB is required to inspect all surface impoundments annually); and
- the Solid Waste Assessment Program targets sites and maintains a list of where there is a possible risk of solid waste disposal sites (landfills) discharging hazardous wastes, threatening either water or air quality.

The Bay Area Air Quality Management District (BAAQMD) may impose specific requirements on remediation activities to protect ambient air quality from dust or other airborne contaminants.

The California Waste Management Board maintains a list of active, inactive or closed solid waste disposal sites and transfer facilities, as legislated under the *Solid Waste Management and Resource Recovery Act* of 1972. The list is referred to as the Solid Waste Information System (SWIS).

The California Environmental Affairs Agency Office of Hazardous Material Data Management produces a database containing information on sites which have been issued waste discharge requirements (NPDES permits). These sites are allowed to discharge specified levels of chemicals under their waste discharge requirements. This list is referred to as the Waste Discharge Systems (WDS).

The State Water Resources Control Board (SWRCB) also requires permitting of all underground storage tanks (USTs) containing hazardous substances. The California laws regulating USTs are primarily found in the *Health and Safety Code*; combined with

regulations adopted by the State Water Board, these laws comprise the requirements of the state UST program. The laws contain requirements for UST permitting, construction, installation, leak detection monitoring, repairs and upgrades, corrective actions and closures. In accordance with state laws, counties are required to implement a UST program and in some cases, the county requirements are more stringent than those of the State. Cities are also given the option to implement a UST program. The Regional Water Quality Control Board may also oversee corrective actions.

Local Regulations

The Alameda County Health Care Services Agency, Department of Environmental Health (ACDEH) is the county agency responsible for implementing the UST program in the City of Oakland. They are responsible for issuing operating and closure permits for USTs and overseeing such tasks as UST design plans, construction, monitoring, leak reporting and UST closure. They also oversee remediation of contaminated soil and groundwater at leaking underground storage tank sites and hazardous waste sites in coordination with Cal EPA. The Oakland Fire Department also responds to hazardous materials incidents; permits underground tank installations, repairs and removals; and reviews closure plans for USTs prior to removal. The Oakland Office of Public Works is apprised of hazardous materials sites and remediation activities on properties owned by the City of Oakland, but defers oversight to the state and county agencies.

The ACDEH maintains three lists of ongoing remediation or inspection efforts on facilities in the areas of: Local Oversight Program (LOP), which lists leaking underground storage tanks; the Deposit/Refund List, which includes sites with other remediation efforts (not underground tanks) and tank installations; and properties where inspections are performed or there is regulatory interaction with the facility. These local lists were not reviewed for the program level EIR, but should be reviewed before development occurs in a specific area.

HAZARDOUS MATERIALS WORKER SAFETY REQUIREMENTS

The Federal Occupational Safety and Health Administration (Fed/OSHA) and the California Safety and Health Administration (Cal/OSHA) are the agencies responsible for assuring worker safety in the handling and use of chemicals in the workplace. The federal regulations

pertaining to worker safety are contained in the *Code of Federal Regulations*, Title 29 (29 CFR) as authorized in the Occupational Safety and Health Act of 1970. They provide standards for safe workplaces and work practices, including standards relating to hazardous materials handling. In California, Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations; Cal/OSHA standards are generally more stringent than federal regulations.

The state regulations concerning the use of hazardous materials in the workplace are included in Title 8 of the *California Code of Regulations*, which contain requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA also enforces hazard communication program regulations, which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information relating to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous waste sites.

TABLE G-1

**SUMMARY OF DATABASES REVIEWED
COLISEUM AREA REDEVELOPMENT PLAN EIR**

Name of List	Responsible Agency	Acronym	Date of List	Number of Sites Identified
National Priority List	USEPA	NPL	June 1993	0
Potentially Contaminated Sites	USEPA	CERCLIS	Sept. 1993	28
Toxic Chemical Release Inventory	USEPA	SARA	Aug. 1992	8
Federal Superfund Liens	USEPA	LIENS	Nov. 1992	1
USEPA Hazardous Waste Generators	USEPA	RCRA	Oct. 1993	192
Abandoned Sites Program	DTSC	CAL-SITES	Oct. 1991	16
California Bond Expenditure Plan	DTSC	BEP	Aug. 1993	4
Hazardous Waste and Substances Site List	CA Office of Planning and Research	CORTESE	Nov. 1990	85
Leaking Underground Storage Tanks	Regional Water Quality Control Board	LUST	Oct. 1993	171
Waste Management Unit Discharge Systems	Regional Water Quality Control Board	WMUDS	Oct. 1993	2
Solid Waste Information System	CA Integrated Waste Management Board	SWIS	March 1993	0
Waste Discharge System	CA Environmental Affairs Agency	WDS	Dec. 1993	10
Underground Storage Tanks	State Water Resources Control Board	UST	Aug. 1993	184

Source: Orion Environmental Associates; NATEC Environmental Reporting Service March 14, 1994

TABLE G-2
SITES IDENTIFIED BY DATABASE SEARCH
COLISEUM AREA REDEVELOPMENT PLAN EIR
 (Page 1 of 11)

Target Area	Map No.	Site Name	Site Address	CERCLIS	SARA	LIENS	SITES	BEP	CORTESE	LUST	WMUDS	WDS
1	34	Dougeo, Inc.	1073 34th Avenue							X		
1	33	August Manufacturing	1466 36th Avenue							X		
1	C64	Tony's Express Auto Service	3609 E. 14th Street							X		
1	C64	Shell	3750 E. 14th Street						X	X		
1	C73	State Shingle Co.	880 Fruitvale Avenue							X		
1	C73	American Contracting Service	3229 San Leandro Street					X				
1	C68	Chevron	3616 San Leandro Street					X		X		
2	C69	American Can Company	3801 E. 8th Street					X		X		
3	C58	PG&E	4801 Oakport Street					X		X		
3	C67	California Stevedore & Balle	4500 Tidewater Avenue							X		
3	C67	ABF Freight Systems	4575 Tidewater Avenue					X		X		
3	32	White Brothers	4801 Tidewater Avenue							X		
3	C62	Reliable Roofing Co.	4905 Tidewater Avenue							X		
3	C62	Disalvo Trucking	4919 Tidewater Avenue					X		X		
4	C45	City of Oakland	7101 Edgewater Drive					X		X		
4	C42	Grand Auto Distribution Center	7200 Edgewater Drive							X		
4	C42	Hooton Property	7307 Edgewater Drive					X		X		
4	16	Goodyear Tire & Rubber	7727 Oakport Street							X		
4	C36	Superior Tiles	7801 Oakport Street					X		X		

See last page of table for explanation of abbreviations

TABLE G-2

SITES IDENTIFIED BY DATABASE SEARCH
COLISEUM AREA REDEVELOPMENT PLAN EIR
(Page 2 of 11)

Target Area	Map No.	Site Name	Site Address	CERCLIS	SARA	LIENS	CAL-SITES	BEP	CORTESE	LUST	WMUDS	WDS
4		Oakport Development Site	South of Oakport Street	x								
5	C11	City of Oakland/Unknown	98th Avenue					x		x		
6	3	Hardchrome/Anderson	107th Avenue							x		
6	C5	Former Gerber Products	98th Avenue							x		
6	C5	City of Oakland	98th Avenue					x		x		
6	C5	Fleischmanns Yeast, Inc./Nabisco Brands, Inc.	98th Avenue		x					x		
6	C7	Abdo Allen Co.	Douglas Avenue							x		
6	C7	Action Plating	Edes Avenue	x		x						
6	5	Art Craft	Edes Avenue							x		
6	C4	Melrose Metal Finishing, Inc.	Pearmain Street						x	x		
6	C4	K & L Plating	Pearmain Street	x								
6	C5	City of Oakland	San Leandro Street						x	x		
6	C5	Wells Fargo Bank	San Leandro Street						x	x		
7	C22	Western Exterminator	76th Avenue						x	x		
7	C26	County Recycling Services, Inc.	77th Avenue						x	x		
7	C26	R & A Trucking	77th Avenue							x		
7	C22	Schroeder Refrigeration	77th Avenue							x		
7	C22	Chip Steak Co.	77th Avenue						x	x		
7	9	Casper's Industries, Inc.	77th Avenue		x							

See last page of table for explanation of abbreviations

TABLE G-2
SITES IDENTIFIED BY DATABASE SEARCH
COLISEUM AREA REDEVELOPMENT PLAN EIR
 (Page 3 of 11)

Target Area	Map No.	Site Name	Site Address	CERCLIS	SARA	LIENS	CAL-SITES	BEP	CORTESE	LUST	WMUDS	WDS
7	8	Safeway, Inc.	1100 77th Avenue		x							
7	C21	Mothers Cookies	810 81st Avenue							x		
7	C21	Sunshine Biscuits	851 81st Avenue							x		
7	C21	Wells Fargo Bank Agent	860 81st Avenue							x		
7	C21	Samura Property	860 81st Avenue							x		
7	C19	The Ordway/Broadway Building	910 81st Avenue							x		
7	C19	Pepsi Cola Co.	940 81st Avenue		x							
7	C17	George M. Robinson & Co.	825 85th Avenue							x		
7	C17	Dreisbach Associates	8410 Amelia Street						x	x		
7	C18	Longview Fiber Co.	8511 Blaine Street						x	x		
7	C18	Ritchie Property	8522 Blaine Street							x		
7	12	Chevron Training Center	7616 San Leandro Street							x		
7	C28	American Brass and Foundry	7825 San Leandro Street			x				x		x
7	C20	Unocal/San Leandro Street Site	8255 San Leandro Street				x			x		
7	C20	L.E. Myers	8261 San Leandro Street		x							
7	C20	Monterey Mechanical	8275 San Leandro Street						x	x		
7	C20	A & B Auto Company	8451 San Leandro Street							x		
8	C34	Silva Associated Roofing Co.	814 69th Avenue							x		
8	C34	Ace Recyclers Enterprises	830 - 69th Avenue 844				x			x		x
8	C35	Aero Quality Plating	710 73rd Avenue		x					x		
8	15	Cypress Steel Corporation	7001 San Leandro Street		x							

See last page of table for explanation of abbreviations

TABLE G-2

SITES IDENTIFIED BY DATABASE SEARCH
COLISEUM AREA REDEVELOPMENT PLAN EIR
(Page 4 of 11)

Target Area	Map No.	Site Name	Site Address	CERCLIS	SARA	LIENS	CAL-SITES	BEP	CORTESE	LUST	WMUDS	WDS
9	C29	Budget Rent a Car	121 98th Avenue							x		
9	C29	Oakland Scavenger	156 98th Avenue						x	x		
10	C37	Paramount Pest Control	20 Hegenberger Place							x		
10	C37	General Tire	240 Hegenberger Road						x	x		
10	C37	Marriot Courtyard	265 Hegenberger Road							x		
10	C38	United Parcel Service	8400 Pardee Drive							x		
10	C38	Federal Express	8455 Pardee Drive						x	x		
		Maj-Storm Drains in A										x
		Rohn & Haas, Inc.										
		National Lead Co.		x							x	
C57		Unknown	1033 4th Avenue							x		
C60		Pressure Cast Products Co.	4210 E. 12th Street		x							
C27		Unknown	E. 14th Street & Haven Court						x			
C61		Continental Volvo	4030 E. 14th Street						x	x		
C56		UNOCAL	4251 E. 14th Street						x	x		
C44		General Electric Company	5441 E. 14th Street				x		x	x		
C39		Quaker Oats	5625 E. 14th Street						x	x		
C39		Fordham Properties/Fordom Park	5725 E. 14th Street						x	x		
C27		Exxon	6630 E. 14th Street							x		
C10		Shell	7915 E. 14th Avenue						x	x		
C6		Independent Texaco	8124 E. 14th Street							x		

See last page of table for explanation of abbreviations

TABLE G-2
SITES IDENTIFIED BY DATABASE SEARCH
COLISEUM AREA REDEVELOPMENT PLAN EIR
 (Page 5 of 11)

Target Area	Map No.	Site Name	Site Address	CERCLIS	SARA	LIENS	CAL-SITES	BEP	CORTESE	LUST	WMUDS	WDS
C6		East Oakland Youth Center	8200 E. 14th Street						X	X		
C6		Jones Property	8332 E. 14th Street							X		
2		Texaco	9331 E. 14th Street						X			
1		ARCO	9800 E. 14th Street							X		
C2		Lloyd Wise Oldsmobile	10440 E. 14th Street							X		
C2		Lloyd Wise Nissan	10500 E. 14th Street							X		
C2		Bartase Property	10550 E. 14th Street							X		
C2		General Motors Parts Division	10626 E. 14th Street	X								
C1		General Motors Parts Division	10800 E. 14th Street	X								
31		Motor Partners	1234 40th Avenue							X		
C60		Motor Partners I	1236 41st Avenue							X		
			& 1238									
C63		Clorox Co. Oakland Plant	850 42nd Avenue	X				X				X
C57		Everett Stern Property	1033 44th Avenue						X	X		
25		West Coast Floor Covering	1468 44th Avenue							X		
C59		Pacific Galvanizing	715 46th Avenue		X					X		
C59		Learner	768 46th Avenue						X	X		
		Continental Baking Co.	1010 46th Avenue							X		
C54		Peterson Properties	1066 47th Avenue						X	X		
C53		Cohn Warehouse	1212 47th Avenue						X	X		
C53		Norcal	1234 47th Avenue						X	X		
C51		F & K Investment Co.	1259 48th Avenue						X	X		

See last page of table for explanation of abbreviations

TABLE G-2

SITES IDENTIFIED BY DATABASE SEARCH
COLISEUM AREA REDEVELOPMENT PLAN EIR
(Page 6 of 11)

Target Area	Map No.	Site Name	Site Address	CERCLIS	SARA	LIENS	CAL-SITES	BEP	CORTESE	LUST	WMUDS	WDS
	22	Bayview Federal Bank	1437 48th Avenue							x		
C51		Mepaco	1226 49th Avenue							x		
C55		AAA Equipment Co.	745 50th Avenue						x			
C50		L & M Plating Co.	920 54th Avenue	x			x	x				
		&										
		930										
C47		Ferro Enameling Co.	1100 57th Avenue	x								
C47		Sinclair & Valentine	1104 57th Avenue	x								
C47		Armor Equipment Sales	1137 57th Avenue							x		
C43		Peck and Hills Co.	701 66th Avenue							x		
C43		Allied Crane Maintenance	727 66th Avenue							x		
C41		McGuire & Hester	796 66th Avenue						x			
C40		UNOCAL	845 66th Avenue						x			
14		A.A. Johnson and Son	1164 66th Avenue							x		
10		Mary Sims Property	1091 71st Avenue				x					
C24		Transamerica De Laval Inc. Eng.	550 85th Avenue	x					x			
C24		IMO Industries, Inc.	550 85th Avenue						x			x
C23		West Coast Wire Rope & Rigging	597 85th Avenue						x			
C23		Ran-Rob, Inc.	631 85th Avenue	x								
C14		Acker and Guerrero Roof	923 87th Avenue							x		
C14		Unknown	925 87th Avenue							x		
6		Lanador	925 89th Avenue							x		
C8		Fiesta Beverage	966 89th Avenue							x		
C8		Continental Plating Co., Inc.	995 89th Avenue	x								

See last page of table for explanation of abbreviations

TABLE G-2
SITES IDENTIFIED BY DATABASE SEARCH
COLISEUM AREA REDEVELOPMENT PLAN EIR
 (Page 7 of 11)

Target Area	Map No.	Site Name	Site Address	CERCLIS	SARA	LIENS	CAL- SITES	BEP	CORTESE	LUST	WMUDS	WDS
C8	C8	Rodrigues Manuel	1009 89th Avenue						X	X		
C8	C8	Lidell Iron Craft	1000 90th Avenue							X		
C13	C13	Paco Pumps	845 92nd Avenue				X		X	X		
C3	C3	Pioneer Packing	1025 98th Avenue						X	X		
C3	C3	Pioneer Packing Co./Pacific Bell	1031 98th Avenue						X	X		
C3	C3	Peterson Property	1083 98th Avenue							X		
C9	C9	Turrini	342 105th Avenue							X		
C9	C9	Veri's Construction, Inc.	344 105th Avenue						X	X		
C1	C1	United Acoustics	1433 105th Avenue							X		
		FAA ALS # 2 Facility/ Hertz Rent a Car	1 Airport Drive						X	X		
C74	C74	United Airlines Maintenance	1100 Airport Drive							X		
		Owens Illinois/Owens Brockway Glass	3600 Alameda Avenue		X				X	X		
C74	C74	Learner Company	3675 Alameda Avenue						X	X		
C72	C72	US Cold Storage	3925 Alameda Avenue						X	X		
C70	C70	Bayside Oil Company	4200 Alameda Avenue	X						X		
C70	C70	Eko-Tek	4200 Alameda Avenue				X		X	X		
		FAA Airway Facility	ASR #9 Facility					X		X		
11	11	Morris Transportation, Inc.	8300 Baldwin Street							X		
C25	C25	Dwyer Construction	8401 Baldwin Street							X		
18	18	Holmes Property	8383 Capwell Drive							X		
		Sanchez Trucklines/Sebring Transport	2100 Carden Street							X		

See last page of table for explanation of abbreviations

TABLE G-2

SITES IDENTIFIED BY DATABASE SEARCH
COLISEUM AREA REDEVELOPMENT PLAN EIR
(Page 8 of 11)

Target Area	Map No.	Site Name	Site Address	CERCLIS	SARA	LIENS	CAL-SITES	BEP	CORTESE	LUST	WMUDS	WDS
C55/27		PG&E Encon Gas	4930 Coliseum Way						x	x		
C55		White GMC Trucks of Oakland	5050 Coliseum Way							x		
C55		Volvo White Truck	5050 Coliseum Way	x								
23		Independent Construction Co.	5900 Coliseum Way							x		
C48		Schwartz Property	6345 Coliseum Way						x	x		
		Ferma Corporation	Davis						x			
		Alameda City Landfill	Doolittle Drive								x	
		Polvorosa Business Park	Doolittle Drive						x			
35		Oakland International Airport	Doolittle Drive and Airport Boulevard				x					
C31		Airborne Express/Unknown	100 Doolittle Drive						x	x		
C31		Rec - Galbraith Golf Course	10085 Doolittle Drive									x
C31		West Coast Tank Testing	390 Doolittle Drive						x	x		
		National Airmotive	Earhart Road						x			
26		Port of Oakland	Earhart Road							x		
C52		Port of Oakland Building L-615	Earhart Drive						x	x		
		Metal Handling	Eastbrook							x		
		Port of Oakland	Embarcadero CV	x								
			Marina Site									
C14		Brockway Glass	8717 G Street						x	x		
4		Beretta Property	Gould Street							x		
28		Hangar L827, Oakland Airport	Grumman Street							x		
C33		David Property	Hegenberger Road							x		
			&									
			110									

See last page of table for explanation of abbreviations

TABLE G-2
SITES IDENTIFIED BY DATABASE SEARCH
COLISEUM AREA REDEVELOPMENT PLAN EIR
 (Page 9 of 11)

Target Area	Map No.	Site Name	Site Address	CERCLIS	SARA	LIENS	CAL-SITES	BEP	CORTESE	LUST	WMUDS	WDS
C33	Dolby Hard Chrome	124	Hegenberger Loop	x								
C33	Shell	285	Hegenberger Road						x	x		
C33	Rollins Truck Leasing	295	Hegenberger Road							x		
C32	UNOCAL	449	Hegenberger Road							x		
C32	Union Bank	460	Hegenberger Road							x		
C30	ARCO	566	Hegenberger Road						x	x		
13	Oakland International Trade	625	Hegenberger Road							x		
C71	Big B Lumbereria	301 & 411	High Street									x
C71	Gallagher & Burke	344	High Street							x		
C71	Itel Container	400	High Street						x	x		
C71	UNOCAL Chemicals Division	401	High Street									x
C66	Cobbledick-Kibbe, Inc.	500	High Street									
C65	Shell	630	High Street						x	x		
C63	Exxon	720	High Street						x	x		
C63	Southern Pacific Transportation	744	High Street							x		
C63	Eds Auto Wreckers/Hatten Property	752	High Street						x	x		
29	Oakland Unified School District	900	High Street							x		
C66	El Monte RV Center	4341	Howard Street							x		
19	Maak Sheet Metal	755	Independent Road							x		
24	Yandell Trucking	563	Julie Ann Way							x		
C49	Penske Leasing	725	Julie Ann Way						x	x		
C49	Independent Construction Co.	740	Julie Ann Way							x		

See last page of table for explanation of abbreviations

TABLE G-2

SITES IDENTIFIED BY DATABASE SEARCH
COLISEUM AREA REDEVELOPMENT PLAN EIR
(Page 10 of 11)

Target Area	Map No.	Site Name	Site Address	CERCLIS	SARA	LIENS	CAL-SITES	BEP	CORTESE	LUST	WMUDS	WDS
	20	Western Union Corp.	732 Kevin Court							x		
		FAA Airway Facilities	L-827 Tracon							x		
C25		West Coast Wire Rope & Rigging	608 McClary Avenue						x			
		Normandy Project	Mecartney Road						x			
	1	Alameda Golf Course	Memorial Clubhouse Drive						x			
		Old Corporation Yard	North Perimeter Road				x					
		Business Aircraft Distr	Oakland Airport	x								
		FAA ASR #9	Oakland Airport							x		
		Golden Gate Automotive	Oakland Airport	x								
		Pacific Airmotive	Oakland Airport	x								
30		Bauer Property	4701 Oakport Street							x		
C36		Ryder Truck Rental	8001 Oakport Street							x		
		Oakland Inner Harbor	Port of Oakland									x
		Maintenance Dredging	Port of Oakland									x
		Ford Wholesale Company	Railroad Avenue							x		
C30		Malibu Grand Prix	8000 S. Coliseum Way							x		
C54		Chevron Asphalt Terminal	4525 San Leandro Street						x			
C54		NL Inds Inc, Pigments & Chem	4701 San Leandro Street	x								
C50		Campanella Demolition	5401 San Leandro Street						x			
21		Pamco	5601 San Leandro Street							x		
C40		Economy Lumber	6233 San Leandro Street							x		
C40		7-Up	6505 San Leandro Street							x		
17		Frank Collins	6701 San Leandro Street							x		

See last page of table for explanation of abbreviations

TABLE G-2
SITES IDENTIFIED BY DATABASE SEARCH
COLISEUM AREA REDEVELOPMENT PLAN EIR
 (Page 11 of 11)

Target Area	Map No.	Site Name	Site Address	CERCLIS	SARA	LIENS	CAL-SITES	BEP	CORTESE	LUST	WMUDS	WDS
	7	Lockup Self Storage	San Leandro Street							x		
	C16	Alameda Chemical Company	9029 San Leandro Street					x		x		
	C16	American Tractor/Transaction Financial Corporation	9131 San Leandro Street					x		x		
	C15	Pacific Pumping Co. Manufacturing Site/Paco Pumps, Inc. Baltimore Air Coil Co.	9201 San Leandro Street	x						x		
	C12	San Leandro Street Plant	9315 San Leandro Street									x
3	C12	Quikrete	9315 San Leandro Street					x		x		
	C12	Gerber Product Company	9401 San Leandro Street					x		x		
	C46	AC Transit	1100 Seminary Avenue					x		x		
		Tidewater Business Park	Tidewater Avenue									
		Tidewater Sand and Gravel	5401 Tidewater Avenue									x

Abbreviations:

- CERCLIS = Comprehensive Environmental Response, Compensation, and Liability Information System
- LIENS = Federal Superfund Liens List
- SARA = Toxic Chemical Release Inventory of Title III of the *Superfund Amendments and Reauthorization Act*
- CORTESE = Listing of potential and confirmed hazardous waste sites, previously maintained by the Office of Planning and Research
- CAL-SITES = Listing of potential hazardous waste sites maintained by the Department of Toxic Substances Control
- LUST = Leaking Underground Storage Tank List
- BEP = Site specific expenditure plan for appropriation of funds from the *California Hazardous Substance Cleanup Bond Act*
- WDS = Waste Discharge System, list of sites with NPDES permits
- WMUDS = Waste Management Unit Discharge System, identifies waste management units

Notes:

See text of Appendix G-2 for explanation of each database identified

Source:

Orion Environmental Associates; NATEC Environmental Reporting Service, March 14, 1994.

TABLE G-3

**SUMMARY OF SITES IDENTIFIED WITHIN TARGET AREA
COLISEUM REDEVELOPMENT PLAN EIR
(Page 1 of 7)**

Target Area	Map No.	Site Name	Source	Soil Contamination	Groundwater Contamination	Off Site Contamination	Comments
1	34	Dougco, Inc. 1073 34th Avenue	UST	Petroleum products, lead	Petroleum products	Unknown	Additional site characterization required
1	33	August Manufacturing 1466 36th Avenue	UST	Metals, cyanide	Petroleum products, metals, cyanide, solvents	Unknown	
1	C64	Tony's Express Auto Service 3609 E. 14th Street	UST	Petroleum products	Petroleum products	Unknown	Vapor extraction system installed. Additional site characterization required
1	C64	Shell 3750 E. 14th Street	UST	Petroleum products	Petroleum products	Unknown	
1	C73	State Shingle Co. 880 Fruitvale Avenue	UST	Petroleum products	Petroleum products	Likely	Additional site characterization required
1	C73	American Contracting Service 3229 San Leandro Street					No agency files available
1	C68	Chevron 3616 San Leandro Street	UST	Unknown	Petroleum products	Unknown	Additional site characterization required
2	C69	American Can Company 3801 E. 8th Street	UST, pipelines	Petroleum products, solvents	Petroleum products, solvents, PCBs	Unknown	Much of site has already been remediated; remediation of two additional areas planned. Off site source of chemicals to the groundwater in one area indicated. UST was closed in place at site. Product was previously identified on groundwater.
3	C58	PG&E 4801 Oakport Street	UST	Petroleum products	Petroleum products	Yes	

TABLE G-3
SUMMARY OF SITES IDENTIFIED WITHIN TARGET AREA
COLISEUM REDEVELOPMENT PLAN EIR
 (Page 2 of 7)

Target Area	Map No.	Site Name	Source	Soil Contamination	Groundwater Contamination	Off Site Contamination	Comments
3	C67	California Stevedore & Balle 4500 Tidewater Avenue	UST	Petroleum products	Petroleum products	Unknown	Files not available for review at ACDEH
3	C67	ABF Freight Systems 4575 Tidewater Avenue	UST	Petroleum products	Petroleum products	Unknown	
3	32	White Brothers 4801 Tidewater Avenue	UST	Petroleum products	Unlikely	Unlikely	Final round of sampling scheduled 1/94
3	C62	Reliable Roofing Co. 4905 Tidewater Avenue	UST	Petroleum products	Unlikely	Unlikely	
3	C62	Disalvo Trucking 4919 Tidewater Avenue	UST	Petroleum products	Unknown	Unknown	Product observed on groundwater in 1991. Recovery system installed. No further data available in files
4	C45	City of Oakland 7101 Edgewater Drive	UST, pipelines	Petroleum products, SOCs, lead	Petroleum products, SOCs, metals	Unknown	Additional site characterization required
4	C42	Grand Auto Distribution Center 7200 Edgewater Drive	UST, hydraulic c lift	Petroleum products, SOCs, PCBs, lead	Petroleum product, chlorobenzenes	Unlikely	Additional site characterization required
4	C42	Hooton Property 7307 F Edgewater Drive	UST	Petroleum products	Unlikely	Unlikely	Low levels of petroleum products identified in soil from UST excavation
4	16	Goodyear Tire & Rubber 7727 Oakport Street	UST	Petroleum products	Unlikely	Unlikely	
4	C36	Superior Tile 7801 Oakport Street					File not available for review at ACDEH
4		Oakport Development Site South of Oakport Street	Fill Material	Lead	Unlikely	Unlikely	Remediation planned 6/94

See last page of table for notes

TABLE G-3

SUMMARY OF SITES IDENTIFIED WITHIN TARGET AREA
COLISEUM REDEVELOPMENT PLAN EIR
(Page 3 of 7)

Target Area	Map No.	Site Name	Source	Soil Contamination	Groundwater Contamination	Off Site Contamination	Comments
5	C11	City of Oakland/Unknown 670 and 692 98th Avenue	UST	Petroleum products	Petroleum products/solvents	Yes	Free product observed on groundwater in off-site well
6	3	Hardchrome/Anderson 750 107th Avenue					Files not available for review at ACDEH
6	C5	Former Gerber Products 801 98th Avenue	UST	Petroleum products	Petroleum products/solvents	Unknown	Site under consideration for closure
6	C5	City of Oakland 816 98th Avenue	UST	Petroleum products	Petroleum products	Unknown	Site under consideration for closure
6	C5	Fleischmanns Yeast, Inc./Nabisco Brands, Inc. 921 98th Avenue	UST	Petroleum products	Unknown	Unknown	DNAPLs present, intermittent recovery conducted 1991 to 1993
6	C7	Abdo Allen Co. 718 Douglas Avenue	UST	Petroleum products	Unknown	Unknown	Site characterization underway, monitoring well required
6	C7	Action Plating 10132 Edes Avenue	Site operations	Unlikely	Unlikely	Unlikely	Site was abandoned and materials left on site were removed during a removal action by the U.S. EPA in 1992
6	5	Art Craft 10441 Edes Avenue					No agency files available
6	C4	Melrose Metal Finishing, Inc. 10222 Pearmain Street	UST	Petroleum products	Unlikely	Unlikely	Soil contamination removed at time of UST removal
6	C4	K & L Plating 10306 Pearmain Street	Unknown	Unknown	Unknown	Unknown	Preliminary assessment has not been completed by the U.S. EPA
6	C5	City of Oakland 9801 San Leandro Street	UST	Petroleum products	Petroleum products/solvents	Unknown	

See last page of table for notes

TABLE G-3
SUMMARY OF SITES IDENTIFIED WITHIN TARGET AREA
COLISEUM REDEVELOPMENT PLAN EIR
 (Page 4 of 7)

Target Area	Map No.	Site Name	Source	Soil Contamination	Groundwater Contamination	Off Site Contamination	Comments
6	C5	Wells Fargo Bank 9999 San Leandro Street	UST	Unlikely	Unlikely	Unlikely	Acceptable levels of petroleum products left in UST excavation
7	C22	Western Exterminator 901 76th Avenue	UST	Petroleum products	Unlikely	Unlikely	
7	9	Casper's Industries, Inc. 1047 77th Avenue	UST	Petroleum products	Unlikely	Unlikely	329 lbs per year of copper released to the air (1992 data)
7	8	Safeway, Inc. 1100 77th Avenue	UST, pipeline	Petroleum products	Unlikely	Unlikely	No agency files available
7	C26	County Recycling Services, Inc. 800 77th Avenue	UST, pipeline	Petroleum products	Unlikely	Unlikely	Case closure under consideration
7	C26	R & A Trucking 865 77th Avenue	UST	Petroleum products	Petroleum products	Unknown	
7	C22	Schroeder Refrigeration 947 77th Avenue	UST	Petroleum products	Petroleum products, chlorobenzene, lead	Unknown	No agency files available
7	C22	Chip Steak Co. 958 77th Avenue	UST	Petroleum products	Petroleum products, chlorobenzene, lead	Unknown	
7	C21	Mothers Cookies 810 81st Avenue	UST, hydraulic lifts	Petroleum products	Petroleum products, solvents, SOCs	Unknown	Soil contamination left in place. Case closure requested
7	C21	Sunshine Biscuits 851 81st Avenue	UST	Petroleum products	Solvents	Unknown	Soil containing petroleum products left in place
7	C21	Wells Fargo Bank Agent 860 81st Avenue	UST	Petroleum products	Unlikely	Unlikely	Soil removal conducted
7	C21	Samura Property 860 81st Avenue					See above site

See last page of table for notes

TABLE G-3

SUMMARY OF SITES IDENTIFIED WITHIN TARGET AREA
COLISEUM REDEVELOPMENT PLAN EIR
(Page 5 of 7)

Target Area	Map No.	Site Name	Source	Soil Contamination	Groundwater Contamination	Off Site Contamination	Comments
7	C19	The Ordway/Broadway Building 910 81st Avenue	UST	Petroleum products, lead	Petroleum products	Unknown	Soil removal conducted; quarterly groundwater monitoring required
7	C19	Pepsi Cola Co. 940 81st Avenue					No agency files available
7	C17	George M. Robinson & Co. 825 85th Avenue	UST	Petroleum products	Unknown	Unknown	Additional site characterization required
7	C17	Dreisbach Associates 8410 Amelia Street	UST	Petroleum products	Petroleum products	Likely	
7	C18	Longview Fiber Co. 8511 Blaine Street	5 sumps UST	Petroleum products	Unlikely	Unlikely	Sumps contain liquid wastes, soil and groundwater impacts from sumps have not been evaluated
7	C18	Ritchie Property 8522 Blaine Street					Files not available for review at ACDEH
7	12	Chevron Training Center 7616 San Leandro Street					No agency files available
7	C28	American Brass and Foundry 7825 San Leandro Street	UST	Petroleum products, solvents, organic lead	Petroleum products, solvents, SOCs, lead	Unknown	617,380 lbs per year of 1,1-trichloroethane released to air (1992 data)
7	C20	Unocal/San Leandro Street Site 8255 San Leandro Street	UST	Unlikely	Unlikely	Unlikely	
7	C20	L.E. Myers 8261 San Leandro Street	Gasoline pump, drumme d materials	Petroleum products, lead	Unknown	Unknown	Small area of stained soil observed near creek. No longer observed in 1988. UST suspected at site
7	C20	Monterey Mechanical 8275 San Leandro Street	UST	Petroleum products	Unlikely	Unlikely	Quarterly groundwater monitoring required

TABLE G-3
SUMMARY OF SITES IDENTIFIED WITHIN TARGET AREA
COLISEUM REDEVELOPMENT PLAN EIR
 (Page 6 of 7)

Target Area	Map No.	Site Name	Source	Soil Contamination	Groundwater Contamination	Off Site Contamination	Comments
7	C20	A & B Auto Company 8451 San Leandro Street	UST	Petroleum products	Unlikely	Unlikely	Groundwater monitoring wells to be installed
8	C34	Silva Associated Roofing Co. 814 69th Avenue	UST	Petroleum products	Unknown	Unknown	Additional site characterization may be required
8	C34	Ace Recyclers Enterprises 830-844 69th Avenue	Improper Storage	Petroleum products	Unknown	Unknown	Owner was required to evaluate extent of petroleum products in soil but there is no indication in the files that this has been done
8	C35	Aero Quality Plating 710 73rd Avenue	Site usage	Solvents, metals, cyanide	Solvents, metals	Unknown	Site demolished; shallow soil removed; solvents and lead also identified in adjacent slough
8	15	Cypress Steel Corporation 7001 San Leandro Street					No agency files identified for this site
9	C29	Budget Rent a Car 121 98th Avenue	UST	Petroleum products	Petroleum products	Unknown	Soil removal conducted
9	C29	Oakland Scavenger 156 98th Avenue	UST	Petroleum products	Unknown	Unknown	
10	C37	Paramount Pest Control 20 Hegenberger Road	UST	Petroleum products	Unlikely	Unlikely	Soil removal conducted
10	C37	General Tire 240 Hegenberger Road	UST	Unlikely	Unlikely	Unlikely	Petroleum products identified at very low levels during UST removal
10	C37	Marriot Courtyard 265 Hegenberger Road					Files not available for review at ACDEH
10	C38	United Parcel Service 8400 Pardee Drive	UST	Petroleum products	Petroleum products	Likely	Product observed on groundwater

See last page of table for notes

TABLE G-3

SUMMARY OF SITES IDENTIFIED WITHIN TARGET AREA
 COLISEUM REDEVELOPMENT PLAN EIR
 (Page 7 of 7)

Target Area	Map No.	Site Name	Source	Soil Contamination	Groundwater Contamination	Off Site Contamination	Comments
10	C38	Federal Express 8455 Pardee Drive	UST	Petroleum products	Unlikely	Unlikely	Impacted soil left in place; case has been closed

Abbreviations:

ACDEH = Alameda County Health Care Services Agency, Department of Environmental Health
 DNAPL = Dense Nonaqueous Phase Liquid
 PCBs = Polychlorinated Biphenyls
 SOCs = Semivolatile Organic Compounds
 U.S. EPA = United States Environmental Protection Agency
 UST= Underground storage tank (s)

Notes:

Ranking of unknown under soil contamination, groundwater contamination, and off-site contamination indicate that sampling has not been conducted to evaluate the potential for contamination.
 Ranking of unlikely under soil contamination or groundwater contamination indicates that sampling has been conducted but contamination was not identified.
 Ranking of unlikely under off-site contamination indicates that the potential for off-site contamination is unlikely, although sampling may have not been performed to evaluate this.

Source:

Orion Environmental Associates, based on file review information obtained from regulatory agencies.

TABLE G-4

**SITES WITH PERMITTED UNDERGROUND STORAGE TANKS AND
PERMITTED TO STORE HAZARDOUS WASTES
COLISEUM AREA REDEVELOPMENT PLAN EIR
(Page 1 of 18)**

Map No.	Site Name		Site Address	RCRA	UST
C69	American Can Company	3801	E. 8th Street	x	
	Western Stucco & Supply	5209	E. 8th Street		x
	Matson's Enterprises	5321	E. 8th Street	x	
	Kallista, Inc.	4218	E 12th Street	x	
	Friendly Cab	4635	E. 12th Street		x
	Gamco, Inc.	4726	E. 12th Street	x	x
	Oakland Fabricating Corporation/Gardco Lighting	4901	E. 12th Street	x	
	Shepherd & Son, Inc.	5117	E. 12th Street	x	
	Customer Service & Distribution	5420	E. 12th Street		x
	C64	Tony's Express Auto Service	3609	E. 14th Street	
C64	Shell	3750	E. 14th Street	x	x
	Trans-matic Transmissions	3905	E. 14th Street		x
	Automotive Engineering	3934	E. 14th Street	x	
	GRT Book Printing	3960	E. 14th Street	x	
	Automotive Engineering	4028	E. 14th Street	x	x
	C61	Continental Volvo	4030	E. 14th Street	
C61	F. H. Dailey Motor Company	4117	E. 14th Street	x	x
	Grand Auto, Inc.	4240	E. 14th Street	x	x
	C56	UNOCAL	4251	E. 14th Street	x
C56	Grand Auto, Inc.	4256	E. 14th Street	x	
	Family 1 Hr Cleaners	4330	E. 14th Street	x	
	Kelly Moore Paint Company	4917	E. 14th Street		x
	Oakland RERS 120	5216	E. 14th Street	x	

See last page of table for explanation of acronyms used.

TABLE G-4

SITES WITH PERMITTED UNDERGROUND STORAGE TANKS AND
 PERMITTED TO STORE HAZARDOUS WASTES
 COLISEUM AREA REDEVELOPMENT PLAN EIR

(Page 2 of 18)

Map No.	Site Name		Site Address	RCRA	UST
	U-Haul Center of Oakland	5330	E. 14th Street	x	x
C44	General Electric Company	5441	E. 14th Street	x	
	General Electric Company	5555	E. 14th Street	x	
C39	Quaker Oats	5625	E. 14th Street	x	x
	Rube & Dan's Body Shop	6017	E. 14th Street	x	
	Jimmy's Station	6210	E. 14th Street		x
C27	Exxon	6630	E. 14th Street		x
	Manor Clean	7202	E. 14th Street	x	
C10	Shell	7915	E. 14th Avenue	x	x
	Superior Auto Body	7933	E. 14th Street	x	x
	Time Cleaners	8815	E. 14th Street	x	
	Not Supplied	9000	E. 14th Street		x
1	ARCO	9800	E. 14th Street		x
	UNOCAL	10151	E. 14th Street	x	x
	AAMCO Transmissions	10214	E. 14th Street	x	
	J & M Paint	10320	E. 14th Street	x	
C2	Lloyd Wise Oldsmobile	10440	E. 14th Street		x
C2	Oakland Mitsubishi	10500	E. 14th Street		x
C2	Lloyd Wise, Inc.	10550	E. 14th Street	x	x
C2	General Motors Parts Division	10626	E. 14th Street	x	
	AC Transit Central Maintenance	10626	E. 14th Street		x
C1	General Motors Parts Division	10800	E. 14th Street	x	
	Crescent Western Warehouse	10800	E. 14th Street		x

See last page of table for explanation of acronyms used.

TABLE G-4

**SITES WITH PERMITTED UNDERGROUND STORAGE TANKS AND
PERMITTED TO STORE HAZARDOUS WASTES
COLISEUM AREA REDEVELOPMENT PLAN EIR
(Page 3 of 18)**

Map No.	Site Name		Site Address	RCRA	UST
	Kallista, Inc.	929	38th Avenue	x	
	New Genico Corporation	1237	40th Avenue	x	
	Swedish Auto, Inc.	1236	41st Avenue	x	
C63	Clorox Co. Oakland Plant	850	42nd Avenue	x	
	YYK Enterprises, Inc.	1020	44th Avenue	x	
	Parkmead Products	930	45th Avenue	x	
	Arrow Sign Company	1046	45th Avenue	x	
	Continental Body Shop	1231	45th Avenue	x	
	East Oakland Yard	711	46th Avenue		x
C59	Pacific Galvanizing	715	46th Avenue	x	
C53	Cohn Warehouse	1212	47th Avenue		x
C53	Norcal	1234	47th Avenue	x	
	Heat Well Company	1276	48th Avenue	x	
	California Steel Processing	848	49th Avenue	x	
C51	Mepaco	1226	49th Avenue		x
	RW Johnston & Son	801	53rd Avenue		x
	Custom Printing Inks LTD	909	53rd Avenue	x	

See last page of table for explanation of acronyms used.

TABLE G-4

**SITES WITH PERMITTED UNDERGROUND STORAGE TANKS AND
PERMITTED TO STORE HAZARDOUS WASTES
COLISEUM AREA REDEVELOPMENT PLAN EIR**

(Page 4 of 18)

Map No.	Site Name		Site Address	RCRA	UST
	Miller West Manufacturing	1362	53rd Avenue	x	
	Shape Products	1127	57th Avenue	x	
	Pacific Bell	1189	58th Avenue	x	x
	Cruise America	796	66th Avenue		x
C40	UNOCAL	845	66th Avenue	x	x
	Fruitvale Business Center	915	66th Avenue		x
	Pacific Electric Motor Company	1009	66th Avenue		x
	General Electric Wire and C.	1034	66th Avenue	x	
C34	Silva Associated Roofing Co.	814	69th Avenue		x
	George E. Masker, Inc.	887	71st Avenue	x	
	L & M Plating, Inc.	902	72nd Avenue	x	
C35	Aero Quality Plating	710	73rd Avenue	x	
	Omega Termite Control, Inc.	807	75th Avenue	x	
	R&A Trucking Company	865	75th Avenue		x
	Damert Co.	900	75th Avenue	x	
C22	Western Exterminator	901	76th Avenue	x	x

See last page of table for explanation of acronyms used.

TABLE G-4

**SITES WITH PERMITTED UNDERGROUND STORAGE TANKS AND
PERMITTED TO STORE HAZARDOUS WASTES
COLISEUM AREA REDEVELOPMENT PLAN EIR
(Page 5 of 18)**

Map No.	Site Name		Site Address	RCRA	UST
	Engs Lease Plan	800	77th Avenue		x
	Ocean Shore Iron Works	850	77th Avenue		x
	Gourmet Express	860	77th Avenue		x
	Creative Wood, Inc.	900	A 77th Avenue	x	
C22	Schroeder Refrigeration	947	77th Avenue		x
C22	Chip Steak Co.	958	77th Avenue		x
8	Safeway, Inc.	1100	77th Avenue		x
C21	Mothers Cookies	810	81st Avenue		x
C21	Sunshine Biscuits	851	81st Avenue		x
	Bay Area Crane-Hoist Co.	873	81st Avenue	x	
	Storage Warehouse	880	81st Avenue		x
	Open Lot	910	81st Avenue		x
C24	Transamerica De Laval Inc.	550	85th Avenue	x	
C23	West Coast Wire Rope & Rigging	597	85th Avenue		x
C23	Ran-Rob, Inc.	631	85th Avenue	x	
C17	George M. Robinson & Co.	852	85th Avenue	x	
	Porcelain Patch & Glaze	966	86th Avenue	x	
	Safety Line, Inc.	973	86th Avenue	x	
	Emerick Sheet Metal	934	87th Avenue	x	
	R.W. Thayer Food Products	962	87th Avenue		x
	Scientific Platers of N. C.	963	87th Avenue	x	

See last page of table for explanation of acronyms used.

1900 B.C., at least one Utian group had settled on the east bayshore at Ala-307. Subsequently, Utian populations identifiable as ancestral Costanoans spread southward and by circa 1500 they occupied lands in the South Bay and on up the Peninsula (Moratto, 1984).

Around A.D. 300 to 500, the Berkeley Pattern gradually developed into the Augustine Pattern. The Augustine Pattern is identified by new cultural traits such as the bow and arrow, harpoon, tubular tobacco pipe and pre-interment grave cremation; these are traits that diffused into the Bay region that were probably caused by population shifts taking place in the lower Sacramento Valley.

Compared to the Berkeley Pattern, the Augustine Pattern exhibited larger populations; a greater number of settlements and more evidence of status differentiation among them; a greater emphasis on gathering vegetal foods, especially acorns; more intensive trade and highly developed exchange systems; the spread of secret societies and cults together with their associated architectural features and ceremonial traits; and in late prehistoric times, the appearance of clamshell disk beads as currency for exchange (Moratto, 1984). This was the cultural pattern that early Europeans encountered, and anthropologists identified as Costanoan.

Ethnography

The California Indians who occupied the Coliseum Redevelopment Area lands at the time of European contact are referred to as the Costanoan. "Costanoan" is a linguistic term and designates a language family consisting of eight languages; it derived from the Spanish word "Costanos" meaning coast people. No native name for the Costanoan people as a whole is known to have existed in prehistoric (or early historic) times. Anthropologists believe that the Costanoans were neither a single ethnic group nor a political entity (Levy, 1978). Native Americans living in the Bay Area today prefer the term "Ohlone" when referring to their ancestral identity.

The Coliseum Redevelopment Area is located in a region that was controlled by the Wekemnayon tribal group according to Bennyhoff (1977); according to Levy (1978) the area would fall within Chochenyo-controlled terrain with as many as three tribal groups in close proximity to the study area. No specifically identified ethnographic village location can be associated with the Coliseum Redevelopment Area.

Tribelet territories were probably defined by geographic features and usually had one or more permanent village surrounded by a number of temporary camps. These temporary camps were used to exploit seasonally available flora and faunal resources (Levy, 1978).

Costanoan/Ohlone structures included thatched houses, sweathouses or temescals, dance houses and storage structures. The domed-shaped, earth-covered, semi-subterranean sweathouses as well as the large, similarly-constructed dance or assembly houses, often capable of accommodating the entire village population, were located at major settlements. The most visible dwellings, however, were the relatively small, domed, earth-covered living quarters constructed on a bent-pole framework (Levy, 1978).

Costanoan/Ohlone technology included woven items such as baskets, fish nets, mats, cradles, balsas (boats), traps and snares made of natural fibers and materials including tule, milkweed and strips of animal skins. Ground stone tools, fashioned from sedimentary and metamorphic rocks, consisted of manos, metates, mortars, pestles, net sinkers, anchors and pipes. Chipped stone tools of obsidian and chert included projectile points, scrapers and blades. Lacing and weaving awls, scrapers and whistles were constructed of bone, while wood was fashioned into mortars, pestles, boat paddles, cooking utensils and sewing awls.

Trade with neighboring groups and excursions into neighboring territories was a common practice. For detailed discussions regarding Costanoan/ Ohlone culture, subsistence practices, social and political organization and region, see Kroeber (1925), Levy (1978), Bennyhoff (1977) and Milliken (1983).

TABLE I-1
SPECIAL STATUS SPECIES OCCURRING IN THE VICINITY OF COLISEUM REDEVELOPMENT AREA
 (Page 1 of 8)

Common Name	Scientific Name	Status Federal/State/CNPS	General Habitat	Project/Potential Occurrence
FEDERALLY AND STATE LISTED SPECIES				
Plants				
Alameda manzanita	<i>Arctostaphylos pallida</i>	FC1, CE, 1B	Chaparral	No suitable habitat.
Robust spineflower	<i>Chorizanthe robusta</i> var. <i>robusta</i>	FPE, 1B	Coastal dunes and scrub	No suitable habitat.
Presidio clarkia	<i>Clarkia franciscana</i>	FC1, CE, 1B	Coastal scrub and grasslands underlain by ultramafic soils	No suitable habitat.
Soft bird's-beak	<i>Cordylanthus mollis</i> sp. <i>mollis</i>	FC1, CR, 1B	Coastal salt marsh	Suitable habitat at marshes around San Leandro Bay.
Santa Cruz tarplant	<i>Holocarpha macradenia</i>	FC1, CE, 1B	Coastal prairie and native grasslands underlain by clay soils	No suitable habitat.
Mason's lilaepsis	<i>Lilaeopsis masonii</i>	FC2, CR, 1B	Protected areas of brackish water marshes	Suitable habitat, but not observed during surveys.
Adobe sanicle	<i>Sanicula maritima</i>	FC2, CR, 1B	Meadows and grasslands underlain by clay or ultramafic soils	No suitable habitat.
Large flowered fiddleneck	<i>Ansinckia grandiflora</i>	FE	Coastal woodlands, grasslands	No suitable habitat.
Palmate-bracted bird's-beak	<i>Cordylanthus palmatus</i>	TE	Chaparral, grasslands	No suitable habitat.
Mammals				
Salt marsh harvest mouse	<i>Reithrontomys raviventris</i>	FE, CE	Forages and breeds in saltmarshes in the Bay Area	Suitable habitat at Arrowhead Marsh.
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	FE	Valley foothills, grasslands	No suitable habitat.
Riparian brush rabbit	<i>Sylvilagus bachmani riparius</i>	FC1, CSC	Limited to valley riparian woodland	No suitable habitat.
San Joaquin Valley woodrat	<i>Neotoma fuscipes riparia</i>	FC2	Valley woodlands	No suitable habitat.

TABLE I-1

SPECIAL STATUS SPECIES OCCURRING IN THE VICINITY OF COLISEUM REDEVELOPMENT AREA
(Page 2 of 8)

Common Name	Scientific Name	Status Federal/State/CNPS	General Habitat	Project/Potential Occurrence
San Francisco dusky-footed woodrat	<i>Neotoma fuscipes annectens</i>	FC2	Oak woodlands	No suitable habitat.
Birds				
Western snowy plover	<i>Charadrius alexandrius nivosus</i>	FT, CSC	Breeds in isolated dunes and sand accumulations	No suitable habitat, presumed absent from the site.
Peregrine falcon	<i>Falco peregrinus anatum</i>	FE, CE	Nests on cliffs and forages on shorebirds and passerines	No suitable nesting habitat, foraging for residents and during migration (occasional visitor)
Bald eagle	<i>Haliaeetus leucocephalus</i>	FE	Nests in mature trees, forested areas	No nesting habitat.
Aleutian canada goose	<i>Branta canadensis leucopareia</i>	FT	Lakes, large ponds, agricultural areas	No suitable habitat.
California black rail	<i>Laterallus jamaicensis coturniculus</i>	FE, CE	Nests and forages in dense pickleweed	Suitable habitat in marshes around San Leandro Bay.
California brown pelican	<i>Pelecanus occidentalis californicus</i>	FE, CE	Nests in islands off the coast of California and forages in open bay and ocean waters	No suitable habitat.
California clapper rail	<i>Rallus longirostris obsoletus</i>	FE, CE	Nests and forages in dense pickleweed	Suitable habitat at Arrowhead Marsh.
California least tern	<i>Sterna antillarum browni</i>	FE, CE	Nests and forages in sandy beaches and coastal wetlands	No suitable habitat.
Invertebrates				
Bay checkerspot butterfly	<i>Euphydryas editha bayensis</i>	FT	Native grasslands	No suitable habitat.

TABLE I-1

SPECIAL STATUS SPECIES OCCURRING IN THE VICINITY OF COLISEUM REDEVELOPMENT AREA
(Page 3 of 8)

Common Name	Scientific Name	Status Federal/State/CNPS	General Habitat	Project/Potential Occurrence
CANDIDATE FOR LISTING SPECIES				
Plants				
Pt. Reyes birds-beak	<i>Cordylanthus maritimus ssp. palustris</i>	FC2, 1B	Coastal salt marsh	Suitable habitat at marshes around San Leandro Bay.
Diable helianthella	<i>Helianthella castanea</i>	FC2, 1B	Oak woodlands and chaparral	No suitable habitat.
Wedge-leaved horkelia	<i>Horkelia cuneata ssp. sericea</i>	FC2, 1B	Coniferous forests and coastal scrub	No suitable habitat.
California black walnut	<i>Juglans hindsii</i>	FC2, 1B	Riparian forests and woodlands (extant native stands occur in Contra Costa and Napa counties)	No suitable habitat.
Contra Costa goldfields	<i>Lasthenia conjugens</i>	FC1, 1B	Valley grasslands and vernal pools	No suitable habitat.
Delta tule pea	<i>Lathyrus jepsonii ssp. jepsonii</i>	FC2, 1B	Brackishwater marshes	Suitable habitat at marshes around San Leandro Bay.
Hairless allocarya	<i>Plagiobothrys glaber</i>	FC2, CNPS 3	Alkaline meadows and coastal salt marsh	No suitable habitat.
Mt. Hamilton thistle	<i>Cirsium fontinale var. campylon</i>	FC1	Chaparral, coastal mountains	No suitable habitat.
South Bay clarkia	<i>Clarkia concinna ssp. automixa</i>	FC2	Coastal scrub	No suitable habitat.
Northcoast bird's-beak	<i>Cordylanthus maritimus ssp. palustris</i>	FC2	Coastal salt marsh	Suitable habitat at marshes around San Leandro Bay.
Interior California larkspur	<i>Delphinium californicum ssp. interius</i>	FC2	Coastal mountains	No suitable habitat.
Contra Costa buckwheat	<i>Eriogonum truncatum</i>	FC2*	Chaparral, coastal scrub, grasslands	No suitable habitat.
Diamond-petaled poppy	<i>Eschscholzia rhombipetala</i>	FC2	Valley and foothill grasslands	No suitable habitat.

TABLE I-1
SPECIAL STATUS SPECIES OCCURRING IN THE VICINITY OF COLISEUM REDEVELOPMENT AREA
(Page 4 of 8)

Common Name	Scientific Name	Status Federal/State/CNPS	General Habitat	Project/Potential Occurrence
Fragrant fritillary	<i>Fritillaria liliacea</i>	FC2	Coastal scrub, valley and foothill grasslands	No suitable habitat.
Kellogg's (wedge-leaved) horkelia	<i>Horkelia cuneata ssp. sericea</i>	FC2	Coastal mountains	No suitable habitat.
Mt. Diablo phacelia	<i>Phacelia phacelioides</i>	FC2	Open rocky slopes	No suitable habitat.
Showy Indian clover	<i>Trifolium amoenum</i>	FC2*	Valley and foothill grasslands	No suitable habitat.
Caper-fruited tropidocarpum	<i>Tropidocarpum capparideum</i>	FC2*	Alkaline hills in valley and foothill grasslands	No suitable habitat.
Invertebrates				
California brackishwater snail	<i>Tryonia initiator</i>	FC2	Slow moving brackishwater streams, tidal influenced marshes and drainages along the coast	Potential habitat occurs adjacent to the area in Damon Slough.
San Francisco forktailed damselfly	<i>Ischnura gemina</i>	FC3c	Freshwater and brackishwater ditches and drainages supporting emergent vegetation	Potential habitat occurs adjacent to the area in Damon Slough.
Curved-foot hygrotus diving beetle	<i>Hygrotus curvipes beetle</i>	FC2	No information available	
Amphibians				
California tiger salamander	<i>Ambystoma tigrinum californica</i>	FC1, CSC	Breeds in freshwater ponds in association with upland areas with small mammals burrows	No suitable habitat.
California red-legged frog	<i>Rana aurora draytonii</i>	FC1, CSC	Freshwater ponds and streams with emergent vegetation	No suitable habitat.
Western spadefoot toad	<i>Scaphiopus hammondi hammondi</i>	FC2R, CSC	Freshwater ponds and streams	No suitable habitat.
Foothill yellow-legged frog	<i>Rana boylei</i>	FC2, CSC	Rocky streams	No suitable habitat.

TABLE I-1
SPECIAL STATUS SPECIES OCCURRING IN THE VICINITY OF COLISEUM REDEVELOPMENT AREA
 (Page 5 of 8)

Common Name	Scientific Name	Status Federal/State/CNPS	General Habitat	Project/Potential Occurrence
Reptiles				
Northwestern pond turtle				
Southwestern pond turtle	<i>Clemmys marmorata marmorata</i>	FC2, CSC	Freshwater ponds and streams	No suitable habitat.
Birds				
Tricolored blackbird	<i>Clemmys marmorata pallida</i>	FC2, CSC	Freshwater ponds and streams	No suitable habitat.
California horned lark	<i>Agelaius tricolor</i>	FC2, CSC	Nests in emergent plants or thickets adjacent to freshwater source	No suitable habitat.
Saltmarsh yellowthroat	<i>Eremophila alpestris acuta</i>	FC2, CSC	Breeds and winters in open grasslands and pastures	No suitable habitat.
Loggerhead shrike	<i>Geothlypis trichas</i>	FC2, CSC	Nests in freshwater willows and forages in saltmarshes	No suitable habitat.
Ferruginous hawk	<i>Lanius ludovicianus</i>	FC2, CSC	Nests in open fields and woodlands	Suitable habitat for foraging.
Mountain plover	<i>Buteo regalis</i>	FC2	Grasslands, not known to nest in California	No suitable habitat.
Alameda song sparrow	<i>Charadrius montanus</i>	FC2	Alkali flats, grassy areas	No suitable habitat.
Long-billed curlew	<i>Melospiza melodia pusillula</i>	FC2, CSC	Nests on ground near freshwater	No suitable habitat.
Elegant tern	<i>Numenius americanus</i>	FC3, CSC	Nests near water in prairies and grassy meadows	No suitable habitat.
	<i>Sterna elegans</i>	FC2, CSC	Nests on salt marsh dikes and sand beaches	No suitable habitat.

TABLE I-1

SPECIAL STATUS SPECIES OCCURRING IN THE VICINITY OF COLISEUM REDEVELOPMENT AREA
(Page 6 of 8)

Common Name	Scientific Name	Status Federal/State/CNPS	General Habitat	Project/Potential Occurrence
Mammals Salt marsh wandering shrew	<i>Sorex vagrans halicoetes</i>	FC1, CSC	Breeds in dense canopy of pickleweed with upland areas to escape tides	Suitable habitat at marshes around San Leandro Bay.
CALIFORNIA SPECIES OF SPECIAL CONCERN				
Birds American white pelican	<i>Pelecanus erythrorhynchos</i>	CSC	Nests on ground near bays and inland rivers	No suitable nesting habitat, potential foraging habitat for migrants.
Osprey	<i>Pandion haliaetus</i>	CSC	Nests on tall snags and hunts over open water	No suitable nesting habitat, potential foraging habitat for migrants.
Sharp-shinned hawk	<i>Accipiter striatus</i>	CSC	Nests in hardwood and conifers or coastal scrub	No suitable nesting habitat, potential foraging habitat for migrants.
Cooper's hawk	<i>Accipiter cooperi</i>	CSC	Nests in hardwood and conifer	No suitable nesting habitat, potential foraging habitat for migrants.
Northern harrier	<i>Circus cyaneus</i>	CSC	Nests in scrubby vegetation on edges of marshes	No suitable nesting habitat, potential foraging habitat for migrants.
Black-shouldered kite	<i>Elanus caeruleus</i>	CP	Nests in dense topped trees in vicinity of marshes and grasslands	No suitable nesting habitat, potential for foraging habitat for migrants.
Merlin	<i>Falco columbarius</i>	CSC	Nests in oak savannah	No suitable nesting habitat, potential foraging habitat for migrants.

TABLE I-1

SPECIAL STATUS SPECIES OCCURRING IN THE VICINITY OF COLISEUM REDEVELOPMENT AREA
(Page 7 of 8)

Common Name	Scientific Name	Status Federal/State/CNPS	General Habitat	Project/Potential Occurrence
California gull	<i>Larus californicus</i>	CSC	Nests on ground near bays and inland rivers	Abundant, not nesting on-site.
Black skimmer	<i>Rynchops niger</i>	CSC	Nests in coastal beaches or sandbars	No suitable nesting habitat, potential foraging habitat for migrants.
Short-eared owl	<i>Asio flammeus</i>	CSC	Nests in open grassland	No suitable nesting habitat, potential foraging habitat for migrants.
California warbler	<i>Dendroica petechia brewsteri</i>	CSC	Nests in riparian woodlands	No suitable nesting habitat. Migrant yellow warblers occur on-site.
Burrowing owl	<i>Speotyto cunicularia</i>	CSC	Nests in burrows of ground squirrels in grassland	Suitable habitat occurs within the redevelopment area, although not likely in any of the target areas.
Mammals				
Harbor seal	<i>Phoca vitulina</i>	MPA, CP	Uses gently sloping gravel areas for nesting areas	No suitable nesting habitat.
CALIFORNIA NATIVE PLANT SOCIETY				
Small spikerush	<i>Eleocharis parvula</i>	CNPS 4	Coastal salt marsh	Suitable habitat may exist in marshland areas.
Salt marsh gumplant	<i>Grindelia humilis</i>	CNPS 4	Coastal salt marsh	Suitable habitat may exist in marshland areas.
Pappose spikeweed	<i>Hemizonia parrii</i> ssp. <i>congdonii</i>	?	Valley and foothill grasslands	No suitable habitat.
Sea blite	<i>Suaeda californica</i>	CNPS 3	Coastal salt marsh	Suitable habitat.

TABLE I-1

SPECIAL STATUS SPECIES OCCURRING IN THE VICINITY OF COLISEUM REDEVELOPMENT AREA
(Page 8 of 8)

STATUS CODES:

Federal Status

- FE = Species in danger of extinction throughout all or significant portion of its range.
- FT = Species likely to become endangered within foreseeable future throughout all or significant portion of its range.
- PE = Species proposed endangered.
- FC1 = Candidate information now available indicates that listing may be appropriate with supporting data currently on file.
- FC1* = Candidate information now available indicates that listing may be appropriate with supporting data currently on file; species presumed extinct.
- FC2 = Candidate information now available indicates that listing may be appropriate but supporting data are not currently on file.
- FC2* = Candidate information now available indicates that listing may be appropriate but supporting data are not currently on file; species presumed extinct.
- FC2R = Recommended for Federal Candidate 2 listing.
- FC3 = Species that are more abundant or widespread than previously believed and/or those that are not subject to any identifiable threat.
- MPA = Marine mammal species which are protected under the Marine Protection Act.

California State Status

- CE = Species whose continued existence in California is jeopardized.
- CT = Species, although not presently threatened with extinction, is likely to become endangered in the foreseeable future.
- CR = Plant species, although not presently threatened with extinction, may become endangered in the foreseeable future.
- CRC = Animal species with California breeding populations that may face extinction in the near future.
- CP = Fully Protected by the State of California under Sections 3511 and 4700 of the Fish and Game Code.
- CSC = California Species of Concern.

CNPS Status

- 1A = Plants presumed Extinct in California.
- 1B = Plants Rare, Threatened, or Endangered in California and elsewhere.
- 2 = Plants Rare, Threatened, or Endangered in California, but more common elsewhere.
- 3 = Plants about which more information is needed.
- 4 = Plants of limited distribution.

Source: Environmental Science Associates, Inc. and Woodward-Clyde Consultants.

APPENDIX H EARTHQUAKE MAGNITUDE SCALES

Several scales have been devised for measuring earthquake magnitude since 1935, when Charles Richter first developed a scale for southern California earthquakes. All magnitude scales are attempts to quantify the size of an earthquake through the use of a single parameter, usually by measuring the largest peak amplitude of a seismic wave on a seismograph. Because earthquakes can vary considerably in terms of their source characteristics and geographic locations and because they are recorded on a variety of different seismographs, five scales or variations of scales are in common use today, as described below. (These descriptions are based upon information presented by dePolo and Slemmons [1990].) However, in some cases no specific magnitude scale may be cited or used, especially in data compilations such as Guter (1988) and in projections derived from data compilations such as those by the Working Group on California Earthquake Probabilities (1988). As the numerical values of the various scales may be similar through certain ranges of earthquake energy release, and as some values commonly used (such as 8.25 for the San Francisco earthquake of 1906) are estimated rather than instrumentally measured, the lack of a reference to a specific scale is irrelevant for most purposes.

Moment Magnitude (MW) - The moment magnitude scale was developed by Hanks and Kanamori (1979) to represent the energy release of large and great earthquakes (earthquakes with magnitudes greater than 7 or 7.5). It is based on the seismic moment, which is a parameter that requires either spectral analysis of the recorded event or, in the absence of seismic records, reliable earthquake recurrence and ground displacement data from detailed geologic studies in exploratory trenches across the causative fault. Currently, it is the scale most favored by seismologists because it best represents the size of an earthquake.

Richter Local Magnitude (ML) - Richter magnitude, now referred to as local magnitude, is based upon on the largest peak amplitude of the seismic waves (usually the shear wave) as recorded on a Wood-Anderson seismograph at a distance of 100 kilometers from the causative fault. This scale has been adopted worldwide for other types of seismographs. It correlates quite closely with moment magnitude up to a magnitude of about 6.5, after which point it diverges from a direct relationship to energy release.

Surface Wave Magnitude (MS) - Surface wave magnitudes are based upon the largest peak amplitude of 20 second surface waves, and generally recorded at very long (teleseismic) distances. This scale is generally used only for large shallow earthquakes. Surface wave magnitudes correlate quite closely with moment magnitudes up to a magnitude of about 8.

Body Wave Magnitude - Body wave magnitudes are based upon the largest peak amplitude of seismic waves that have traveled through the center of the earth, as recorded at stations of the Worldwide Standardized Seismograph Network. Two types of body wave magnitudes are used: a long period magnitude (mB) and a short period magnitude (mb). The latter type is used principally in the central and eastern United States. The numerical values of both types of body wave magnitude differ significantly from those of the other common magnitude scales.

References - Earthquake Magnitude Scales

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APPENDIX I
BIOTIC RESOURCES

APPENDIX J PREHISTORIC ARCHAEOLOGY

Study Methods

A literature search was conducted at the California Archaeological Inventory Northwest Information Center at Sonoma State University in Rohnert Park (File No. 94-75). Maps, site records and reports were reviewed for information regarding prehistoric archaeological sensitivity of the Coliseum Redevelopment Area. Supplemental documentation was accomplished by reviewing in-house materials for the East Bay.

The following sources were also reviewed: the *National Register of Historic Places*, the *California Inventory of Historic Resources*, the *California Historical Landmarks* and *Five Views: An Ethnic Sites Survey for California*.

Field reconnaissance procedures were limited to a windshield survey of the Coliseum Redevelopment Area, with some cursory inspection of accessible vacant lots and open space terrain. It was difficult to locate known archaeological resources due to access problems, prohibitive land use situations (i.e., presence of structures, pavement and fences) and poorly defined site locations for some resources.

East Bay Prehistory

The archaeological discoveries and studies described above provide a foundation for establishing prehistoric lifeways in the region. East Bay prehistory appears to have its origins approximately 4,500 years ago. Evidence indicates that widespread but relatively sparse populations of hunters and gathers lived in the region circa 4,000 years before the present. Their settlements were located on Bay and ocean shores as well as on inland drainages within valleys. Shellfish were part of their diet but were not prominent as in later times; consequently, archaeological sites from this period contain less shell than is found in later cultural middens. The abundance of projectile points and millingstones indicate that hunting and vegetal food processing were the main subsistence strategies. D. Fredrickson (1974) defined this early stage as the Archaic Period (Moratto, 1984).

Following the Archaic Period, bayshore and marsh-adapted people representing a new and distinctive culture appear at locations such as Ala-307 (West Berkeley Site), CCo-295 (Ellis Landing Site) and Ala-328 (Newark Site). These cultural developments are identified as the Berkeley Pattern (Middle Horizon), which is characterized as follows:

- a. Technological skills and devices. The minimally-shaped cobble mortar and cobble pestle are employed as the virtually exclusive milling implements. Manos and metates (millingstones)...are rare. The dart and atlatl are present... Chipped stone projectile points are less frequent than in the Windmill Pattern, and non-stemmed forms predominate. There is a growing emphasis (through time) upon the bone industry... The polished stone industry does not appear to be as highly developed as it is with the Windmill Pattern.
- b. Economic modes. As indicated by a high proportion of grinding implements in relation to projectile points and by the regional accumulation of large shell heaps, the Berkeley Pattern has a collecting emphasis. The acorn is probably the dominant staple. The larger number of sites and great depths of deposit suggest a larger population than that supported by the Windmill Pattern... The use of local materials predominates. Trade goods, when they appear, are finished specimens, rather than raw material.
- c. Burial and ceremonial practices. The mortuary complex is rarely elaborated. Flexed burials with variable orientation occur in village sites. Burial goods are restricted to a few utilitarian items or ornamental objects... Ceremonialism is indicated predominantly by shamanism, that is, by the presence of single graves with objects compatible with known ethnographic "shaman's kits," e.g., quartz crystals, charmstones, bone whistles. Graves are sometimes accompanied by bird and animal bones, occasionally by articulated portions of skeletons. Birds and animals sometime(s) are found as ceremonial burials (Fredrickson, 1973).

The Berkeley Pattern marks the replacement of Hokan populations with Utian (Costanoan) people and their culture in the East Bay. Based on radiocarbon-dated Berkeley Pattern components, it would appear that Utian populations first occupied eastern Contra Costa County at circa 2500 to 200 B.C., then expanded westward to San Francisco Bay. By circa