Coliseum Area Specific Plan




Draft Environmental Impact Report, Volume I

SCH # 2013042066
Lead Agency: City of Oakland
August, 2014

City Case #ER13-0004

LAMPHIER-GREGORY

CITY OF OAKLAND

250 FRANK H. OGAWA PLAZA, SUITE 3315 • OAKLAND, CALIFORNIA 94612-2032

Planning and Building Department
Strategic Planning Division

(510) 238-3941
FAX (510) 238-6538
TDD (510) 839-6451

NOTICE OF AVAILABILITY/ RELEASE OF DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) FOR THE COLISEUM AREA SPECIFIC PLAN AND NOTICE OF PUBLIC HEARINGS ON DEIR, SPECIFIC PLAN AND RELATED ACTIONS

TO: All Interested Parties

SUBJECT: Notice of Availability/Release of Draft Environmental Impact Report (DEIR) for the Coliseum Area Specific Plan, and Notice of Public Hearing on the same.

REVIEW/COMMENT PERIOD: August 22, 2014 through October 6th, 2014

CASE NO.: ZS13-103, ER13-0004 (CEQA State Clearing House Number 2013042066)

PROJECT SPONSOR: City of Oakland

PROJECT LOCATION: The Coliseum Area Specific Plan area ("Plan Area") is located in the City of Oakland, and covers an area of approximately 800 acres bounded by 66th Avenue to the north, San Leandro Street on the east, Hegenberger Road on the south, and San Leandro Bay and the Oakland International Airport to the west. The Plan Area includes the Oakland Alameda County Coliseum and Arena and the Oakland Airport Business Park. The Plan Area is located between Downtown Oakland and Oakland International Airport, proximate to the cities of Alameda and San Leandro, and easily reachable by train and car by millions of people from all over the Bay Area. The Plan Area is uniquely served by regional transit, including the Coliseum BART station, Capitol Corridor Amtrak station, AC transit bus service and the future BART Oakland Airport Connector, as well as two I-880 freeway interchanges.

PROJECT DESCRIPTION: The Coliseum Area Specific Plan will be a 25-year planning document that provides a transformative new vision for the Oakland Coliseum complex, the area around the Coliseum/Airport BART station, and the adjacent lands stretching toward the Oakland International Airport located between San Leandro Bay and Hegenberger Road. The Specific Plan provides a comprehensive vision for the Plan Area with goals, policies and development regulations. This development vision will require coordination with the Port of Oakland, Bay Conservation and Development Commission, and Federal Aviation Administration, among other outside agencies. The Specific Plan vision calls for up to three new sports venues (a new football stadium, baseball park, basketball arena and multi-purpose events center), an intermodal transit hub adjacent to the current Coliseum BART station, and an elevated pedestrian concourse that runs from the BART station to the sports-related entertainment district (with retail, restaurants, and hotels) and mixed-use residential

neighborhood, residential transit-oriented development to the east of San Leandro Road, and extends to the west side of I-880 and the Oakland Airport Business Park area near the San Leandro Bay waterfront.

The remainder of the Project Area (the "Plan Buildout Area") is envisioned to be developed over the longer term and could include a residential mixed-use district; a science and technology district that includes from office to research and development to production and support to logistics and airport-related uses; a possible new bay inlet along the waterfront; a potential transit link from the Coliseum BART station; and habitat restoration.

The Specific Plan requires General Plan and Planning Code amendments (text and map changes) along with Design Guidelines (collectively called "Related Actions") to achieve the Plan goals.

For more information on the project, including draft documents, please visit the project website at: www.oaklandnet.com/coliseumcity.

ENVIRONMENTAL REVIEW: A Notice of Preparation of an EIR was issued by the City of Oakland's Planning and Building Department on April 19, 2013. A Draft Environmental Impact Report (DEIR) has now been prepared for the project under the requirements of the California Environmental Quality Act (CEQA), pursuant to Public Resources Code Section 21000 et seq. The DEIR analyzes potentially significant environmental impacts in all environmental categories/topics. The Draft EIR identifies significant unavoidable environmental impacts related to: Air Quality; Biological Resources; Cultural and Historic Resources; Land Use and Planning; Noise; Transportation.

The City of Oakland's Planning and Building Department is hereby releasing this DEIR, finding it to be accurate and complete and ready for public review. **Starting on Friday, August 22, 2014**, copies of the DEIR, Specific Plan and Related Actions will be available for review or distribution to interested parties at no charge at the Planning and Building Department, 250 Frank H. Ogawa Plaza, Suite 3315, Oakland, CA 94612, Monday through Friday, 8:30 a.m. to 5:00 p.m. Additional copies are available for review at the Oakland Public Library, Social Science and Documents, 125 14th Street, Oakland CA 94612. The DEIR may also be reviewed at the City's "Current Environmental Review Documents" webpage: http://www2.oaklandnet.com/Government/o/PBN/OurServices/Application/DOWD009157 and the Specific Plan and Related Actions may be reviewed on the project website: www.oaklandnet.com/coliseumcity.

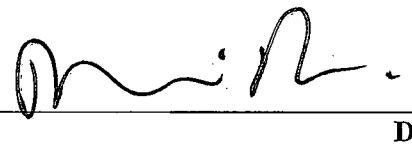
TWO PUBLIC HEARINGS WILL BE HELD BY THE CITY ON THE DEIR, SPECIFIC PLAN AND RELATED ACTIONS:

LANDMARKS PRESERVATION ADVISORY BOARD PUBLIC HEARING	CITY PLANNING COMMISSION PUBLIC HEARING
Monday, September 8, 2014, 6:00 p.m. **Oakland City Hall** **Hearing Room 1** **One Frank H. Ogawa Plaza** **Oakland, CA 94612**	**Wednesday, October 1, 2014, 6:00 p.m.** **Oakland City Hall** **Hearing Room 1** **One Frank H. Ogawa Plaza** **Oakland, CA 94612**

Members of the public are welcome to attend these two public hearings, and provide comments on the DEIR, Specific Plan and Related Actions. Comments on the DEIR should focus on whether the DEIR is

sufficient in discussing possible impacts to the physical environment, ways in which potential adverse effects may be avoided or minimized through mitigation measures, and alternatives to the Specific Plan in light of the EIR's purpose to provide useful and accurate information about such factors. Comments may be made at the public hearings described above or in writing. Please address all written comments to Devan Reiff, City of Oakland Strategic Planning Division, 250 Frank H. Ogawa Plaza, Suite 3315. Oakland, California 94612; (510) 238-3550 (phone); (510) 238-6538 (fax); or e-mailed to dreiff@oaklandnet.com. Comments on the DEIR, Specific Plan and Related Actions **must be received no later than 5:00 p.m. on October 6, 2014.**

After all comments have been received, a Final EIR will be prepared and the Planning Commission will consider certification of the EIR and make a recommendation to the City Council on the Specific Plan and Related Actions at a public hearing, date yet to be determined. All comments received will be considered by the City prior to finalizing the EIR and taking any further action pertaining to this EIR. If you challenge the environmental document or other actions pertaining to this Project in court, you may be limited to raising only those issues raised at the public hearings described above or in written correspondence received by **October 6, 2014**. For further information please contact Devan Reiff at (510) 238-3550 or via email to dreiff@oaklandnet.com.



Darin Ranelletti
Environmental Review Officer

August 18, 2014

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #2013042066

Project Title: Oakland Coliseum Area Specific Plan

Lead Agency: City of Oakland, Strategic Planning Division | Contact Person: Devan Reiff
Mailing Address: 250 Frank Ogawa Plaza, Suite 3315 | Phone: (510) 238-3550
City: Oakland, CA | Zip: 94612 | County: Alameda

Project Location: County: Alameda | City/Nearest Community: Oakland
Cross Streets: Oakland Coliseum Planning Area, center approx. at I-880 and Hegenberger Road | Zip Code: 94621
Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W | Total Acres: 800
Assessor's Parcel No.: numerous | Section: ____ | Twp.: ____ | Range: ____ | Base: ____
Within 2 Miles: State Hwy #: I-580, I-880, I-980 | Waterways: SF Bay, Oakland Estuary
Airports: ____ | Railways: BART, Amtrak, others | Schools: ____

Document Type:

CEQA: ☐ NOP ☒ Draft EIR | NEPA: ☐ NOI | Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR | ☐ EA | ☐ Final Document
☐ Neg Dec (Prior SCH No.) ____ | ☐ Draft EIS | ☐ Other: ____
☐ Mit Neg Dec Other: ____ | ☐ FONSI

Local Action Type:

☐ General Plan Update | ☒ Specific Plan | ☒ Rezone | ☐ Annexation
☒ General Plan Amendment | ☐ Master Plan | ☐ Prezone | ☐ Redevelopment
☐ General Plan Element | ☐ Planned Unit Development | ☐ Use Permit | ☐ Coastal Permit
☐ Community Plan | ☐ Site Plan | ☐ Land Division (Subdivision, etc.) | ☒ Other: Design Guides

Development Type:

☒ Residential: Units 5,750 Acres ____
☒ Office: Sq.ft. 84.5k Acres ____ Employees 630
☒ Commercial: Sq.ft. 467.9k Acres ____ Employees 1,330
☒ Industrial: Sq.ft. 6.86m Acres ____ Employees 18,255
☐ Educational: ____
☒ Recreational: 3 new professional sports venues
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☒ Other: Hotels: 875 rooms, employment: 755

Project Issues Discussed in Document:

☒ Aesthetic/Visual | ☐ Fiscal | ☒ Recreation/Parks | ☒ Vegetation
☒ Agricultural Land | ☒ Flood Plain/Flooding | ☒ Schools/Universities | ☒ Water Quality
☒ Air Quality | ☒ Forest Land/Fire Hazard | ☒ Septic Systems | ☒ Water Supply/Groundwater
☒ Archeological/Historical | ☒ Geologic/Seismic | ☒ Sewer Capacity | ☒ Wetland/Riparian
☒ Biological Resources | ☒ Minerals | ☒ Soil Erosion/Compaction/Grading | ☒ Growth Inducement
☒ Coastal Zone | ☒ Noise | ☒ Solid Waste | ☒ Land Use
☒ Drainage/Absorption | ☒ Population/Housing Balance | ☒ Toxic/Hazardous | ☒ Cumulative Effects
☒ Economic/Jobs | ☒ Public Services/Facilities | ☒ Traffic/Circulation | ☐ Other: ____

Present Land Use/Zoning/General Plan Designation:

General Plan designations: primarily Regional Commercial and Business Mix, with several corresponding zoning districts

Project Description: *(please use a separate page if necessary)*

The Specific Plan calls for development of the Coliseum District with up to three new professional sports venues; an inter-modal transit hub adjacent to the current Coliseum BART station; an elevated pedestrian concourse with retail, restaurants, and hotels; and mixed-use, transit-oriented residential neighborhoods. Plan Build-out is also envisioned to include a new waterfront residential mixed-use development; a science and technology district that includes office and research and development uses; logistics and airport-related business uses; a potential transit link from the Coliseum BART station; and habitat restoration.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

X	Air Resources Board	X	Office of Historic Preservation
	Boating & Waterways, Department of		Office of Public School Construction
	California Emergency Management Agency		Parks & Recreation, Department of
	California Highway Patrol		Pesticide Regulation, Department of
X	Caltrans District #4		Public Utilities Commission
X	Caltrans Division of Aeronautics	X	Regional WQCB #SF Bay Region
	Caltrans Planning	X	Resources Agency
	Central Valley Flood Protection Board		Resources Recycling and Recovery, Department of
	Coachella Valley Mtns. Conservancy	X	S.F. Bay Conservation & Development Comm.
	Coastal Commission		San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
	Colorado River Board		San Joaquin River Conservancy
	Conservation, Department of		Santa Monica Mtns. Conservancy
	Corrections, Department of	X	State Lands Commission
	Delta Protection Commission		SWRCB: Clean Water Grants
	Education, Department of		SWRCB: Water Quality
	Energy Commission		SWRCB: Water Rights
X	Fish & Game Region #3		Tahoe Regional Planning Agency
	Food & Agriculture, Department of	X	Toxic Substances Control, Department of
	Forestry and Fire Protection, Department of		Water Resources, Department of
	General Services, Department of		
	Health Services, Department of		Other:
	Housing & Community Development		Other:
X	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date August 22, 2014 Ending Date October 6, 2014

Lead Agency (Complete if applicable):

Consulting Firm: Lamphier-Gregory
Address:
City/State/Zip:
Contact:
Phone:

Applicant: City of Oakland
Address: 250 Frank Ogawa Plaza, Suite 3315
City/State/Zip: Oakland, Ca 94612
Phone: (510) 238-3550

Signature of Lead Agency Representative: _____ **Date:** 8-18-14

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

Coliseum Area Specific Plan




Draft Environmental Impact Report

SCH # 2013042066
Lead Agency: City of Oakland
August, 2014

City Case #ER13-0004

Prepared by:
Lamphier-Gregory, in association with:

BKF Engineers
ENVIRON International
Fehr & Peers Transportation Consultants
Garcia and Assocaites
Hausrath Economics Group
Rosen Goldberg Der and Lewitz
SLR Enviornmental Consultants

Coliseum Area Specific Plan, Draft EIR

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Appendices

(Appendices are included on a Compact Disk in the back cover of the Draft EIR document.)

1

Introduction

This Draft Environmental Impact Report (Draft EIR) has been prepared by the City of Oakland in accordance with the California Environmental Quality Act (CEQA)[1] and associated CEQA Guidelines[2] to describe the potential environmental consequences of the proposed Coliseum Area Specific Plan. This Draft EIR is intended to serve as an informational document for use by public agency decision makers and the public in their consideration of the proposed Specific Plan.

Proposed Project

The City of Oakland is considering adoption of the Coliseum Area Specific Plan (the ***Project***). The Project envisions transformation of the Oakland Coliseum, the area around the Coliseum/Airport BART station, and surrounding properties (the ***Coliseum District***) into a new sports and entertainment district with new residential neighborhoods and space for new science and technology businesses. The Project includes a detailed, specific and clearly defined development program representing one scenario for implementation of the Specific Plan (i.e., the ***Coliseum City Master Plan***), but also provides flexibility for other potential land use outcomes. The Project also includes buildout assumptions for development and redevelopment throughout the remaining portions of the Planning Area, including the lands on the westerly side of I-880, stretching toward the Oakland International Airport and located between Hegenberger Road and East Creek Slough (***Plan Buildout***).

The Project seeks to retain Oakland's three major professional sports franchises with three new venues and an accompanying mixed-use residential, retail and hotel district, plus a science and technology district which transitions to airport-related uses. The Project establishes a land use and development framework, identifies needed transportation and infrastructure improvements and recommends implementation strategies.

Planning Area and Subareas

The Coliseum Area Specific Plan's Planning Area (the Project Area) is located in East Oakland and covers 800 acres bounded by 66th Avenue to the north, San Leandro Street on the east, Hegenberger Road on the south, and San Leandro Bay and the Oakland International Airport to the west. The Project Area is located in the heart of Alameda County and the East Bay, between Downtown Oakland and Oakland International Airport, proximate to the cities of Alameda and San Leandro, and easily reachable by train and car by millions of people from all over the Bay Area. The Project Area is uniquely served by regional

[1] The California Environmental Quality Act (CEQA) is codified in section 21000, et seq., of the California Public Resources Code

[2] The CEQA Guidelines are set forth in sections 15000 through 15387 of the California Code of Regulations, Title 14, Chapter 3

transit, including the Coliseum BART station, Capitol Corridor Amtrak station, AC transit bus service and the future BART Oakland Airport Connector, as well as two I-880 freeway interchanges.

The Project Area is divided into five sub-areas:

- Sub-Area A, located entirely to the east of I-880, consists primarily of the 200-acre Coliseum Complex and additional private properties to the east along both sides of San Leandro Street, the Coliseum BART Station and its associated parking lot.
- Sub-Area B, located to the west of I-880 from 66th Avenue to Elmhurst Creek, is approximately 125 acres, and contains the northerly portion of the Oakland Airport Edgewater Business Park as well as the City of Oakland Public Works Department's corporation yard.
- Sub-Area C—located between Elmhurst Creek, I-880, Hegenberger Road, and San Leandro Creek—is approximately 190 acres, and contains the southerly portion of the Oakland Airport Edgewater Business Park as well as the existing Wal-Mart store and adjacent retail shopping center off Hegenberger Road at Edgewater Drive.
- Sub-Area D is approximately 135 acres, and includes the most westerly portion the Oakland Airport Edgewater Business Park nearest to the Oakland International Airport as well as light industrial, hotel, and retail and restaurant uses along Hegenberger Road.
- Sub-Area E consists of largely undeveloped open space north of the Oakland Airport Edgewater Business Park, between East Creek Slough and Damon Slough. Measuring approximately 105 acres, a little more than half of this Sub-Area is owned and used by the East Bay Municipal Utility District, with an operating water treatment facility, open storage and a corporation yard. The City of Oakland owns the remaining parcels in this Sub-Area, including a large site used primarily as a soccer facility.

Land Use and Development

The development of Sub-Area A and a portion of Sub-Area B (the "Coliseum District") is based on the Coliseum City Master Plan, which calls for three new sports venues (a new football stadium and a new baseball park in Sub-Area A plus a new basketball arena and multi-purpose events center in Sub-Area B), an intermodal transit hub at the current BART station, an elevated pedestrian concourse that runs from the BART station and across I-880, a sports-related entertainment district (with retail, restaurants, and hotels) and mixed-use residential neighborhood, residential transit-oriented development to the east of San Leandro Road, an office-oriented science and technology district along I-880, and expanded open space and enhancements to existing waterways.

The remainder of the Project Area (the "Plan Buildout Area") would be developed over the longer term and would include a residential mixed-use district in Sub-Area B; a science and technology district that arcs from Sub-Area A through Sub-Areas B, C, and D, transitioning from office to research and development to production and support to logistics and airport-related uses; a possible new bay inlet along the Sub-Area B waterfront; a transit link from the BART station to Sub-Areas B and C; and habitat restoration in Sub-Area E.

Overall, the proposed Project would create three new sports venues, 5,750 housing units, and almost 8 million square feet of net new commercial and business uses. The Coliseum Area would have around 7,000 residents and 20,000 new jobs by the time of project buildout in the year 2035.

This development vision will require the adoption of amendments to the City's General Plan land use designations and Zoning Ordinance, establishment of a development application and review system based on the City's Planned Unit Development process, and coordination with the Port of Oakland, Bay

Conservation and Development Commission, and Federal Aviation Administration, among other agencies.

Scope of the EIR

The City of Oakland has determined that an Environmental Impact Report (EIR) will be prepared for the proposed Project. The City circulated a Notice of Preparation (NOP) on April 19, 2013 (see **Appendix 1A**). The public comment period on the scope of the EIR lasted through May 20, 2013. The NOP was sent to responsible agencies, neighboring cities, interested organizations and individuals, and to the State Clearinghouse.

A scoping session was held before the City Planning Commission on May 1, 2013, and a second scoping session was held before the City Landmarks Preservation Advisory Board on May 13, 2013. Both written and oral comments received by the City on the NOP and scoping sessions were taken into account during the preparation of this EIR. The written comments received are included in **Appendix 1B**.

The following environmental topics are addressed in this EIR:

Chapter 4.1: Aesthetics, Shadow and Wind

Chapter 4.2: Air Quality

Chapter 4.3: Biological Resources

Chapter 4.4: Cultural and Historic Resources

Chapter 4.5: Geology and Soils

Chapter 4.6: Greenhouse Gas Emissions and Climate Change

Chapter 4.7: Hazards and Hazardous Materials

Chapter 4.8: Hydrology and Water Quality

Chapter 4.9: Land Use and Planning

Chapter 4.10: Noise

Chapter 4.11: Population, Housing and Employment

Chapter 4.12: Public Services and Recreation

Chapter 4.13: Transportation, Circulation and Parking

Chapter 4.14: Utilities and Service Systems

Impacts on agriculture and forest resources and mineral resources are not anticipated, and consequently are not analyzed in the EIR.

Level of Analysis

The degree of specificity in an EIR corresponds to the degree of specificity in the underlying activity described in the EIR. As CEQA specifies, a Program EIR is appropriate for a Specific Plan, under which there will be future development proposals that are related geographically, logical parts in a chain of contemplated actions, connected as part of a continuing program, and carried out under the same authorizing statute or regulatory authority and have similar environmental impacts that can be mitigated in similar ways (CEQA Guidelines Section 15168).

One of the purposes of this EIR is to comprehensively assess the entirety of potential environmental impacts of the proposed Coliseum Area Specific Plan. This environmental review is used to analyze the series of actions pursuant to the Plan that can be characterized as one large project, and focuses on broad policy alternatives and mitigation measures, as well as regional influences, secondary effects, cumulative impacts and other factors that apply to the Plan as a whole. (CEQA Guidelines Section 15168(b) (4) and (d) (2)). This approach provide the City and other responsible agencies with the ability to consider program-wide mitigation measures and cumulative impacts that might be slighted in a case-by-case analysis approach, and to carry out an entire program without having to prepare additional site-specific environmental documents. Preparation of this broader-level document simplifies the task of preparing subsequent project-level environmental documents for future projects under the Specific Plan, for which the details may be currently unknown. This EIR presents an analysis of the environmental impacts of adoption and implementation of the Specific Plan. Specifically, it evaluates the physical and land use changes from potential development that could occur with adoption and implementation of the Specific Plan. Such impacts are described at a level of detail consistent with the level of detail provided in the Specific Plan.

Where feasible and where an adequate level of detail is available such that the potential environmental effects may be understood and analyzed, this EIR also provides a project-level analysis to eliminate or minimize the need for subsequent CEQA review of subsequent projects that could occur under the Specific Plan. Although not required under CEQA, "project-level" impacts of reasonably foreseeable developments are analyzed, to the extent that such impacts are known. The Coliseum City Master Plan provides one vision or example of a detailed development program for the Coliseum District. The Coliseum City Master Plan includes physical development plans that provide density and intensity, height and bulk, and location of specific anticipated future development and public infrastructure and transportation improvements. The Coliseum Area Specific Plan also provides a prescribed development envelope (defined in terms of a "Trip Budget"), which governs the maximum amount of development which may occur within the Coliseum District based on the number of PM peak hour vehicle trips that such development would generate. These physical development plans and the Trip Budget's maximum development envelope have been used, where available, to provide "project-level" assessments.

Where these specific details are not available, the analysis of potential physical environmental impacts is based on reasonable assumptions about future development that could occur in the Plan Area. The assumed future development is described in Chapter 3: Project Description.

Effects of the Environment

CEQA requires the analysis of potential adverse effects of a project on the environment. Potential effects of the environment on a project are legally not required to be analyzed or mitigated under CEQA. However, this EIR nevertheless analyzes potential effects of "the environment on the project" in order to provide information to the public and decision-makers. Where a potential significant effect of the environment on the project is identified, the document, as appropriate, identifies City Standard Conditions of Approval and/or project-specific non-CEQA recommendations to address these issues.

Report Organization

The EIR is organized into the following chapters:

- *Chapter 1 – Introduction*: Discusses the overall EIR purpose; provides a summary of the proposed Specific Plan; describes the EIR scope; and summarizes the organization of the EIR.

- *Chapter 2 – Summary*: Provides a summary of the significant environmental impacts that would result from implementation of the proposed Specific Plan, and describes Standard Conditions of Approval and recommended mitigation measures that would avoid or reduce significant impacts.
- *Chapter 3 – Project Description*: Provides a description of the Project Area, Specific Plan objectives and assumptions, overarching planning strategies, expected buildout under the proposed Project, and required approval process.
- *Chapter 4 – Setting, Impacts, and Mitigation Measures*: Describes the following for each environmental topic: existing physical setting, applicable regulatory setting including relevant City of Oakland Standard Conditions of Approval; thresholds of significance; potential environmental impacts and their level of significance; Standard Conditions of Approval relied upon to ensure significant impacts would not occur; mitigation measures recommended when necessary to mitigate identified impacts; and resulting level of significance following implementation of mitigation measures, when necessary.

  Potential impacts are identified by level of significance, as follows:

  - **No Impact** - No noticeable adverse effect on the environmental would occur.
  - **Less than Significant** (**LTS**) – The proposed Project would cause an environmental effect, but that effect would not exceed the City's threshold of significance.
  - **Less than Significant with Standard Condition of Approval (LTS with SCA)** – The proposed Project would not result in an adverse impact due to the required implementation of City of Oakland SCAs. Because these SCAs are mandatory City requirements, the impact analysis assumes that these will be imposed and implemented by the Project. Where implementation of a required Standard Condition of Approval would reduce an otherwise potentially significant impact to less than significant, the impact will be determined to be less than significant.
  - **Less than Significant with Mitigation Measures (LTS with MM)**– The proposed Project would cause an adverse impact, but that impact can be reduced to a less than significant level with implementation of recommended mitigation measures as identified in this EIR.
  - **Significant and Unavoidable (SU)** – The proposed Project would cause an adverse impact that exceeds the threshold of significance and cannot be avoided or reduced through implementation of SCAs or recommended mitigation measures.
- *Chapter 5 – Alternatives*: Evaluates a reasonable range of alternatives to the proposed Specific Plan and identifies an environmentally superior alternative.
- *Chapter 6 – CEQA-Required Assessment Conclusions*: Provides the required analysis of growth-inducing impacts, significant irreversible changes, effects found not to be significant and significant unavoidable impacts.
- *Chapter 7 – Report Preparation*: Identifies preparers of the EIR, references used, and the persons and organizations contacted.
- *Appendices*: The appendices contain the NOP and written comments submitted on the NOP, as well as other technical studies and reports relied upon in the EIR.

Public Review

This Draft EIR is available for public review and comment during the period identified on the Notice of Release/Availability of a Draft EIR accompanying this document. This Draft EIR and all supporting technical documents and referenced documents are available for public review at the offices of the City of Oakland Planning and Building Department, located at 250 Frank H. Ogawa Plaza, Suite 3315, Oakland, under Case ER #ER13-0004.

During the public review period, written comments on the Draft EIR may be submitted to the City of Oakland Planning and Building Department at the address indicated on the notice. Oral comments on the Draft EIR may be stated at the public hearings which shall be held as indicated on the notice.

Following the public review and comment period, the City will prepare responses to comments received on the environmental analysis in this Draft EIR. The responses and any other revisions to the Draft EIR will be prepared as a Response to Comments document. The Draft EIR and its appendices, together with the Response to Comments document will constitute the Final EIR for the proposed Specific Plan.

Intended Uses of this EIR

Adoption of the Specific Plan

Under CEQA, the City of Oakland is the Lead Agency for the proposed Coliseum Area Specific Plan (the "Project").[3] As the Lead Agency, the City intends that this EIR serve as the CEQA-required environmental documentation for consideration of the Project by City decision-makers, the public, and other responsible agencies and trustee agencies.[4] This EIR is intended to serve as a public information and disclosure document for use by governmental agencies and the public to identify and evaluate potential environmental consequences of the proposed Specific Plan, to evaluate and recommend mitigation measures that would substantially lessen or eliminate adverse impacts, and to examine a range of feasible alternatives to the proposed Specific Plan. The information contained in this EIR is subject to review and consideration by the City of Oakland, prior to the City's decision to approve, reject or modify the proposed Specific Plan. In accordance with CEQA Guidelines Section 15146 (Degree of Specificity), such impacts and mitigations are discussed in this EIR to the level of detail necessary to allow reasoned decisions about the Project.

The City must ultimately certify that it has reviewed and considered the information in the EIR and that the EIR has been completed in conformity with the requirements of CEQA before making any decision on the proposed Specific Plan. This EIR identifies significant effects that would result from the proposed Specific Plan. Pursuant to CEQA Guidelines Section 15091, the City cannot approve the Specific Plan unless it makes one or more of the following findings:

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[3] CEQA Guidelines section 15367 defines the "Lead Agency" as the public agency that has the principal responsibility for carrying out or approving a project. The City of Oakland is the Lead Agency for the proposed Coliseum Area Specific Plan, ultimately responsible for adopting the Plan and all associated approvals.

[4] Under the CEQA Guidelines, the term "Responsible Agency" includes all public agencies, other than the Lead Agency, that have discretionary approval power over aspects of the project for which the Lead Agency has prepared an EIR. Under the CEQA Guidelines, the term "trustee agency" means a state agency having jurisdiction by law over natural resources affected by the project that are held in trust by the people of California, such as the Department of Fish and Game.

- That changes or alterations have been required in, or incorporated into the Specific Plan which avoid or substantially lessen the significant environmental effects as identified in the EIR,
- That such changes or alterations are within the responsibility and jurisdiction of another public agency (not the City of Oakland), and that such changes have been adopted by such other public agency, or can and should be adopted by such other agency.
- Specified economic, legal, social, technological or other considerations make infeasible the mitigation measures or alternatives identified in the EIR.

This EIR presents an analysis of the environmental impacts of adoption and implementation of the Specific Plan. Specifically, it evaluates the physical and land use changes from potential development that could occur with adoption and implementation of the Specific Plan.

Subsequent General Plan and Zoning Actions

The Coliseum Area Specific Plan proposes a number of General Plan amendments and re-zonings throughout the Project Area (as more fully described in the Project Description) in order to allow residential uses, new sports venues, local-serving retail uses, greater and more precisely defined building heights, further differentiation among business and industrial land uses, more accurate representations of open space areas, and different design standards than are allowed under current policies and regulations. This EIR provides the environmental review necessary for City decision-makers to consider these General Plan amendments and re-zoning actions.

Individual Projects

For some site-specific purposes, this EIR may provide sufficient detail to enable the City to make informed site-specific decisions within the Planning Area. This approach provides the City with the ability to consider Planning Area-wide mitigation measures and cumulative impacts that might be slighted in a case-by-case analysis approach, and to carry out all or portions of the Specific Plan without having to prepare additional site-specific environmental documents. Preparation of this EIR is intended to simplify the task of preparing subsequent project-level environmental documents for future projects under the Specific Plan, as applicable.

The City intends to use the streamlining and tiering provisions of CEQA to the maximum feasible extent, so that future environmental review of specific private development projects and public improvement projects carried out in furtherance of the Coliseum Area Specific Plan are expeditiously undertaken, without the need for repetition and redundancy. Specifically, pursuant to CEQA Guidelines Sections 15162-15164, 15168, 15183 and 15183.5, future environmental analyses may be tiered from this EIR:

- CEQA Guidelines Section 15183 mandates that projects which are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. This streamlines the review of such projects and reduces the need to prepare repetitive environmental studies;
- Public Resources Code section 21094.5 and CEQA Guidelines Section 15183.3 provides for streamlining of certain qualified, infill projects. Under this provision, CEQA would not apply to the effects of an eligible infill project if the effect was addressed as a significant effect in a prior EIR for a

planning level decision, and an effect need not be analyzed if uniformly applied development standards apply to the infill project and would substantially mitigate that effect;

- CEQA Guidelines Sections 15162-15164 allow for the preparation of a Supplemental or Subsequent EIR, and/or an Addendum to a certified EIR when certain conditions are satisfied;
- California Government Code section 65457 and CEQA Guidelines Section 15182 provide that, once an EIR is certified and a Specific Plan is adopted, any residential development project, including any subdivision or zoning change that implements and is consistent with the Specific Plan, is generally exempt from additional CEQA review under certain circumstances.

The above are examples of possible streamlining/tiering mechanisms that the City may pursue, and do not dictate the City's approach to future environmental review of specific projects.

This EIR is intended to provide for the streamlined environmental review necessary for subsequent consideration of project-level approvals necessary for the following individual project types:

- each of the three new sports and event venues (the Stadium, the Ballpark and the new Arena) as contemplated in the Specific Plan,
- the approximately 4,000 new residential units contemplated within Sub-Area A, at the densities and of the types of housing as fully contemplated in the Specific Plan,
- the 875 new hotel rooms within Sub-Area A, at the approximate locations and intensities of use as fully contemplated in the Specific Plan,
- the more than 1.9 million square feet of new retail, commercial, and business-type development projects within Sub-Area A, consistent with the intensities and types of uses fully contemplated in the Specific Plan;
- improvements to public infrastructure systems (i.e., water, sewer and storm drains, electrical and power utilities, etc.);
- improvements to the public roadway and transportation systems, including roadway and sidewalk repairs and improvements, new bike lanes, and other similar transportation improvements specifically contemplated in the Specific Plan;
- development of public parks and open space as specifically contemplated in the Specific Plan; and
- to the extent reasonable and feasible, this EIR will also be used to streamline the environmental review of other subsequent development and environmental enhancement projects located within Sub-Areas B, C, D and E.

In some cases, the formulation of site-specific issues will not be known until subsequent design occurs, leading to the preparation of later, project-level environmental documentation. When considering the applicability of the streamlining provisions of CEQA, the City of Oakland intends to limit the examination of environmental effects of these later projects to those effects that are peculiar to the project or parcel on which the project would be located, whether subsequent projects may result in impacts that were not analyzed as significant effects in this EIR, or which may result in impacts that are identified in this EIR but which may be determined to have a more severe adverse effect than discussed in this EIR (per CEQA Guidelines, section 15183).

At such time as individual actions (i.e., development proposals and public infrastructure and transportation improvements) contemplated under the proposed Project are proposed for implementation, the City will consider whether the action's environmental effects were fully disclosed,

analyzed, and as needed, mitigated within this EIR; whether the action is exempt from CEQA; whether the action warrants preparation of a subsequent or supplemental environmental document; or whether the action warrants preparation of focused environmental review limited to certain site-specific issues.

2

Executive Summary

Project Overview

The City of Oakland is considering adoption of the Coliseum Area Specific Plan (***the Project***). The Project envisions transformation of the Oakland Coliseum, the area around the Coliseum/Airport BART station, and surrounding properties (***the Coliseum District***) into a new sports and entertainment district with new residential neighborhoods and space for new science and technology businesses. The Project includes a detailed, specific and clearly defined development program representing one scenario for implementation of the Specific Plan (***the Coliseum City Master Plan***), but also provides flexibility for other potential land use outcomes. The Project also includes buildout assumptions for development and redevelopment throughout the remaining portions of the Planning Area, including the lands on the water-side of I-880 stretching toward the Oakland International Airport and located between Hegenberger Road and East Creek Slough (***Plan Buildout***). The Project seeks to retain Oakland's three major professional sports franchises with three new venues and an accompanying mixed-use residential, retail and hotel district, plus a science and technology district which transitions to airport-related uses. The Project establishes a land use and development framework, identifies needed transportation and infrastructure improvements and recommends implementation strategies.

On April 19, 2013, the City of Oakland determined that an Environmental Impact Report (EIR) will be prepared for the proposed Project, and circulated a Notice of Preparation (NOP) for this Draft EIR. The public comment period on the NOP, which requested comments on the scope of this EIR, lasted through May 20, 2013. The NOP was sent to responsible agencies, neighboring cities, interested organizations and individuals, and to the State Clearinghouse. Additionally, a scoping session was held before the City Planning Commission on May 1, 2013 and a second scoping session was held before the City Landmarks Preservation Advisory Board on May 13, 2013. Both written and oral comments received by the City on the NOP and scoping sessions were taken into account during the preparation of this EIR.

The following environmental topics are addressed in this EIR:

- Aesthetics, Shadow and Wind
- Air Quality
- Biological Resources
- Cultural and Historic Resources
- Geology and Soils
- Greenhouse Gas Emissions and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning

- Noise
- Population, Housing and Employment
- Public Services and Recreation
- Transportation, Circulation and Parking
- Utilities and Service Systems

Impacts on agriculture and forest resources and mineral resources are not anticipated, and consequently are not analyzed in the EIR.

Project Location

The Coliseum Area Specific Plan's Planning Area (the Project Area) is located in Alameda County between Downtown Oakland and Oakland International Airport, proximate to the cities of Alameda and San Leandro (see **Figure 2-1**). The Project Area is extensively served by the interstate freeway (I-880), rail and regional transit, including the Coliseum BART station, Capitol Corridor Amtrak station, AC transit bus service and the BART Oakland Airport Connector.

The Project Area is more specifically located in East Oakland and covers approximately 800 acres bounded by East Creek Slough and 66th Avenue to the north, San Leandro Street on the east, Hegenberger Road on the south, and San Leandro Bay and the Oakland International Airport to the west. The Project Area is divided into five Sub-Areas (see **Figure 2-2**), which include:

- the Coliseum District, which includes the Oakland-Alameda County Coliseum complex (the Coliseum Stadium and Arena and associated surface parking lots), other City-owned land, additional private properties to the east along both sides of San Leandro Street, and the existing Coliseum BART Station and associated parking lot (Sub-Area A),
- the Oakland Airport Business Park north of Hegenberger Road (Sub-Areas B, C and D), and
- other adjacent properties to the north of 66th Avenue(Sub-Area E).

Key Components of the Project

Coliseum City Master Plan

In June of 2012, the City of Oakland entered into an Exclusive Negotiating Agreement (ENA) with a team of architects and developers led by JRDV International to prepare a detailed Master Plan for the Oakland Coliseum site and key supporting areas, and to negotiate with the Oakland Raiders, Warriors, and A's sports franchises on behalf of the City with the goal to retain these teams at the Oakland Coliseum site. The JRDV International team prepared the Coliseum City Master Plan, which is a detailed development program for the Coliseum site and adjacent areas. The Coliseum City Master Plan accommodates the retention of all three sports franchises within three new venues, together with transit-oriented mixed-use development near the Coliseum Bay Area Rapid Transit (BART) station, new job-based development and housing opportunities surrounding the sports venues, event-based and neighborhood-serving retail uses, and plans for transit improvements intended to enhance transit usage by residents, employees and event patrons.

Figure 2-1
Regional Context Map

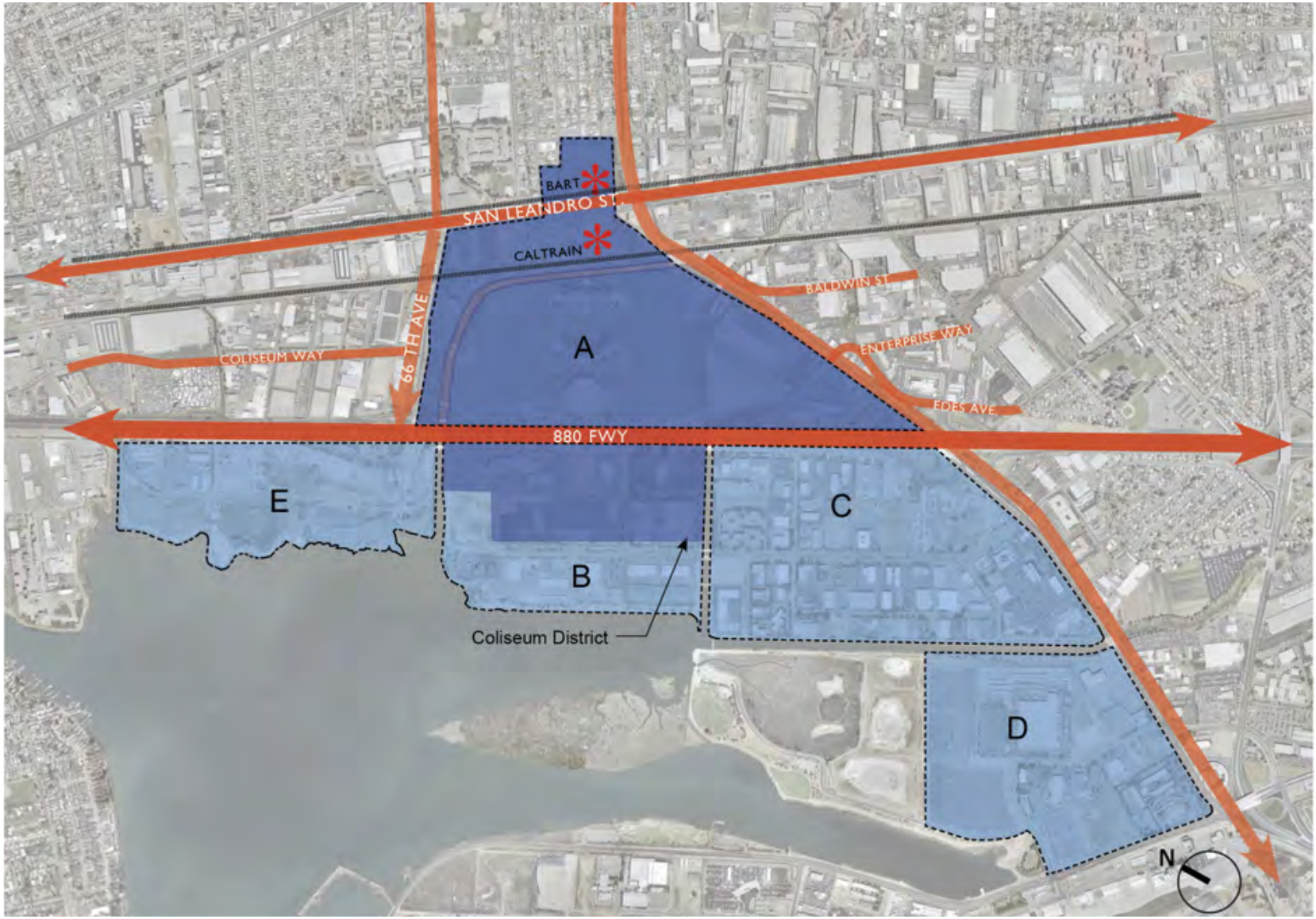


Figure 2-2
Coliseum Area Specific Plan - Planning Area and Sub-Areas

The Coliseum City Master Plan also includes a longer-term vision for complimentary development and redevelopment of the nearby Oakland Airport Business Park as a new regional center of science and technology, with light industrial and logistics uses in support of the science and technology center as well as supportive of the operating needs of the Oakland International Airport. The Master Plan also proposes water-oriented residential development and open space enhancement and improvements.

Coliseum Area Specific Plan

Following preparation of the Coliseum City master Plan, the City of Oakland has prepared the Coliseum Area Specific Plan based upon, and to accommodate eventual development as envisioned under the Coliseum City Master Plan, but that also provides an overall policy and regulatory framework for the City within which future development activity would occur. While the Coliseum City Master Plan provides one clearly defined vision of development potential, it represents only one of a number of other possible development scenarios for these properties. Therefore, the Coliseum Area Specific Plan is intentionally flexible enough to accommodate all three franchises or any combination of two, one, or even no sports franchises in the future, and provides a development plan responsive to these potential sports venue scenarios.

Project Description

Because the Coliseum City Master Plan provides a detailed, specific and clearly defined vision under which the Specific Plan might be implemented, and because it represents the maximum development potential that could occur within this area pursuant to the urban design and planning principles of the Specific Plan, the Coliseum City Master Plan serves as the Project Description for this EIR (see **Figure 2-3**). For purposes of this EIR, buildout of the Project is expected to occur by year 2035. A more detailed description of the Project as analyzed in this EIR follows.

Coliseum District

The Project's overall development program includes new sports venues and associated retail uses, transit improvements, mixed-use and residential development (including a BART area TOD) and creation of new science and technology space, as more specifically described below.

NFL Stadium and Multi-purpose Event Center

The proposed new Stadium would be constructed on an approximately 12.6-acre site bounded on the east by the UP Railroad tracks, on the south by the Hegenberger Road, and on the west by I-880. The proposed stadium would have a permanent seating capacity of up to 68,000 seats and designed to expand to approximately 72,000 seats for special events. Parking for the Stadium will be accommodated in a variety of on-site surface lots, dedicated event parking garages, and shared parking facilities.

MLB Ballpark

The proposed new outdoor Ballpark would be constructed on an approximately 12.3-acre site bounded on the east by the UP Railroad tracks, on the north by Damon Slough, and on the west by I-880. The proposed Ballpark would have a permanent seating capacity of up to 35,000 seats and will be designed to expand to approximately 39,000 seats for special occasions or large game day crowds. Operation and scheduling use of the Ballpark would be restricted from having major events (including baseball games) on the same day as football games at the adjacent Stadium. Since no large events could occur simultaneously, parking for the Ballpark would be accommodated within the same on-site parking facilities as used by the Stadium.

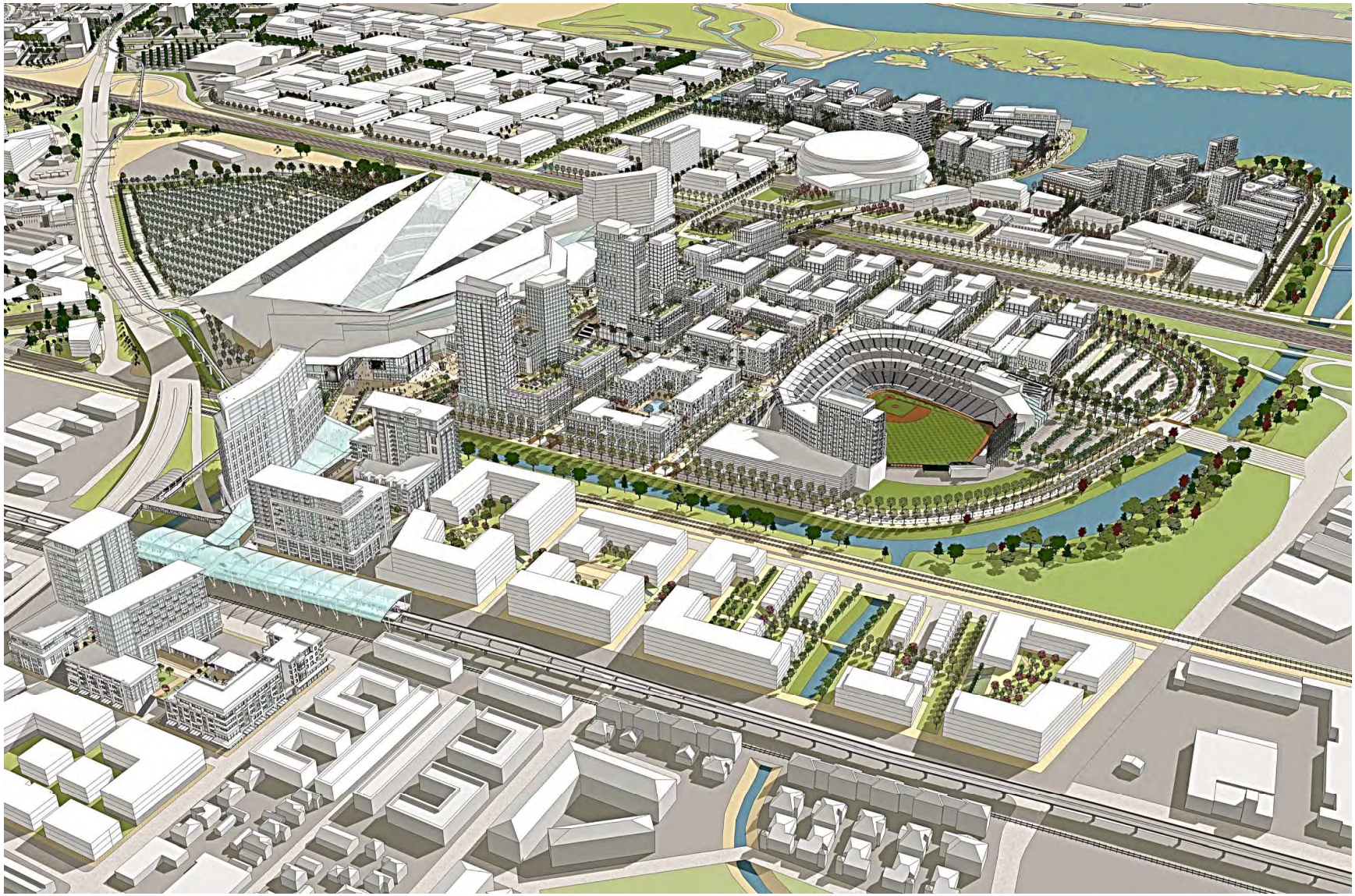


Figure 2-3
Coliseum Site

Source: JRDV Urban International

NBA / Multi-purpose Event Arena

The proposed new indoor Arena would be constructed on an approximately 12.4-acre site on the west side of I-880, on a parcel currently owned and occupied by the Coliseum Lexus of Oakland and Everett Graphics. As part of the development of this new Arena site, these properties would be acquired and the businesses would be relocated to a suitable site elsewhere within the Business Park. In addition to basketball games, use of the Arena would include numerous other events (e.g., concerts, family entertainment shows, community events, trade shows, etc.) at a schedule similar to, but more frequent than currently occurs in the existing Oracle Arena. The proposed Arena would have a permanent seating capacity of up to 20,000 seats. The design of the Arena includes up to 800 parking spaces, and a pedestrian concourse will directly link the Arena to the opposite side of I-880 where additional, off-site parking associated with the new Stadium will be available for Arena patrons.

Transit Hub

A new Intermodal Transit Hub is proposed to better link BART, the Oakland Airport Connector, Amtrak, AC Transit buses and a potential new streetcar connector. The Intermodal Transit Hub is designed to facilitate interconnections, security, and legibility between each of these transit modes. A number of improvements to the Coliseum BART station are part of the proposed Project, intended to enhance the Coliseum/Airport BART Station to increase its capacity to better serve the higher attendance expected due to the improved sports venues, as well as increase daily commute demand generated by surrounding development.

Pedestrian Concourse

The Project proposes to connect the Coliseum District (including the new Arena) to the improved Transit Hub via a new pedestrian concourse connection to be relocated along the 73rd Avenue right-of-way. This new pedestrian connection will be used as a concourse to the new Stadium, Ballpark and Arena, and to the surrounding development. The connector will also be a linear park that extends over I-880, providing a direct link from BART to the Bay.

Sports-Related Entertainment District

The Project's proposed sports venues are integrated into an active urban center that contains retail, entertainment, arts and cultural uses, creating new opportunities for multi-use facilities that accommodate a much higher ratio of non-game events than is currently experienced. The Sports-Related Entertainment District is expected to include as much as 225,000 square feet of retail/entertainment uses and two new hotels accommodating up to 560 hotel rooms. The tenant mix of the Entertainment District has not been set, but is expected to include such uses as restaurants, bars and night-clubs, a bowling alley, potentially a movie theater, and other consumer goods retail that extend and enhance the experience of sports venue patrons by providing additional on-site activities and shopping opportunities.

BART Adjacent Transit-Oriented District (TOD)

The approximately 24.7-acre area surrounding the Coliseum BART station is planned to be a new, moderate- to high-density residential community. Portions of the new housing in this location will be moderate density housing (at densities of 85 to 90 units per net acre) in those portions of the TOD nearest to existing neighborhoods, whereas portions of the TOD district closest to the BART station would be developed at higher densities (155 to 120 units per net acre). In total, the Coliseum BART TOD is expected to contain up to new housing units with associated ground-floor commercial space.

Mixed Use Residential Sports Neighborhood

Within the central portion of the Coliseum District is a proposed new mixed-use residential neighborhood, intended to appeal to younger, active people who desire to live in a vibrant, urban setting adjacent to the sports and entertainment uses within Coliseum City. Central to the Sport Neighborhood is a proposed 2.2-acre Grand Plaza lined with retail uses that lead to the new Ballpark and Stadium. Lining the Grand Plaza on either side are mid-rise and high-rise residential towers that contain as many as 1,570 new apartment-styled housing units, with as much as 120,000 square feet of neighborhood-serving retail uses on the ground floor.

Science and Technology District

The Coliseum District includes an extension of the science and technology district known as the "Innovation Gateway", most of which is located on the west side of I-880. Within the Coliseum District, the extension of science and technology land uses consists of a row of technology and office use buildings fronting onto the east side of I-800, between the freeway and the new sports venues. This nearly 24-acre district contains no residential uses, but instead is devoted to job-generating technology, office and a small amount of retail use. The Coliseum District's portion of the Science and Technology District includes approximately 1.5 million square feet of technology and office space, 30,000 square feet of retail use, a new 360-room hotel and on-site parking within podium structured garages.

Open Space and Site Drainage

The proposed Project includes a total of 26.5 acres of parks and open space within the Coliseum District, consisting of the 2.2-acre "Grand Plaza" pedestrian streetscape; a 14.2-acre pedestrian Concourse and linear park; a 2-acre park next to the MLB Ballpark; and more than 8 acres of open space and natural habitat improvement along Damon Slough near the Amtrak railroad tracks and 66th Avenue.

Vehicle Circulation

The proposed Project includes an internal network of new and improved streets, as well as off-site street and intersection improvements needed to provide adequate access to the Site under large event conditions.

Infrastructure Improvements

Infrastructure improvements include relocation and potential under-grounding of the existing overhead high tension electrical wires and supporting structures, as well as new local utility service lines for water, sewer and storm drainage, as well as new primary on-site mains which will connect to the larger regional infrastructure system.

Parking

Proposed parking supply provided within the Coliseum District is based on the projected parking demand for each of the proposed land uses, as well as assumptions regarding transit-modes to be used by fans and future residents and workers. On-site parking will be provided through a combination of surface lots, dedicated event parking garages, and shared parking facilities. In total, the Coliseum District includes 4,330 surface parking spaces and 13,840 parking spaces within parking garages.

Summary:

In total, new development within the Coliseum District will include:

- a new Stadium with a seating capacity of 72,000 attendees,

- a new Ballpark with a seating capacity of 39,000 attendees,
- a new Arena with a seating capacity of 20,000 attendees,
- three new hotels with a total room count of 875 rooms,
- 525,000 square feet of new event-based retail space,
- 190,000 square feet of neighborhood-serving and convenience retail space located primarily within ground-floor locations,
- up to 1.5 million square feet of new science and technology space,
- 340 new residential units in low- to mid-rise townhome-types buildings, primarily along San Leandro Street from 66th Avenue southward, and
- 3,660 new residential units in high-rise residential towers.

Project Buildout within Sub-Areas B, C, D and E

Buildout of the remaining portions of the Project Area is less well defined than for the Coliseum District, but includes the following additional major development program elements:

Mixed Use Waterfront Residential District

The Specific Plan Buildout includes plans to create a more publicly accessible waterfront along the San Leandro Bay as a catalyst toward redevelopment of this area. The waterfront is planned as an amenity for the new Arena as well as for the city as a whole. Pedestrian paths and actively used park spaces will line the waterfront, becoming integrated into a new residential and mixed-use community that complements adjacent Science and Technology District. An approximately 10-acre Waterfront Residential District is proposed to include approximately 1,750 new residential units within a variety of multi-family mid- and high-rise buildings. The Waterfront Residential District would be supplemented with approximately 59,000 square feet of neighborhood-serving retail uses. All parking within this District would be provided with structured parking garages accommodating a single parking space per unit.

The "Innovation Gateway" Science and Technology District

The majority of Sub-Area B's buildout is planned to provide an important institutional anchor location within Oakland, and potential business tenants may be local or international institutions looking for a strategic location to take advantage of the Bay Area's "innovation economy". These institutional research anchors will form a nucleus around which corporate and other research entities will locate. Developing the Science and Technology District within Sub-Area B will require relocation of the City of Oakland's existing corporation yard, assembling smaller parcels and improving the Sub-Area's infrastructure, including improved roadways and transit access, utilities, state-of-the-art telecommunications and high-speed internet connections, together with waterfront amenities. The Science and Technology District is proposed to accommodate a total buildout of up to approximately 3.5 million square feet of technology and office uses.

Bay Inlet

Buildout of Sub-Area B proposes the creation of an approximately 12-acre new inlet of San Leandro Bay. This inlet would be created by excavating/dredging the area and allowing Bay waters to enter. This excavation would result in a removal of fill and an increase in Bay surface area. Existing infrastructures in this area would be removed and/or modified by the surrounding Science and Technology District

development. The new inlet is not proposed as a navigable waterway (i.e., no ferries or boat docks), but instead would include intertidal mudflats that would support shorebird foraging and possibly high-tide roosting habitat. The primary purpose of the new Bay Inlet would be to create new waterfront edge within this Sub-Area as an attraction and amenity for new development.

Sub-Area C Technology Support District

The Specific Plan buildout scenario for Sub-Area C anticipates private redevelopment of this area to accommodate new development. Buildout of Sub-Area C anticipates that as the Science and Technology District in the adjacent Sub-Area B becomes more established, Sub-Area C will transition into an area that contains new uses supportive of the institutional science and technology uses, such as advanced technology and other manufacturing; research and development and test product design; and sales, marketing, professional service, and finance uses supporting technology businesses This area is anticipated to include new development that is comparatively lower-cost, lower-density, and more flexible than the mix of buildings being developed in Sub-Area B. Expected buildout of Sub-Area C is anticipated to include more than 5.1 million square feet of these newer land uses.

Sub-Area D: Airport and Logistics District

The Specific Plan buildout anticipates modest redevelopment of Sub-Area D, with most of the existing uses in this area remaining in the future, and new infill development with new uses that support airport-related economic development. This area will provide locations for businesses that value proximity to the airport and the I-880 freeway, including larger logistics and distribution businesses/activities as well as hotel, retail, and eating and drinking uses along Hegenberger Road. Buildout of Sub-Area D is expected to include approximately 2 million square feet of total non-residential development space.

Sub-Area E: Habitat Restoration

The Specific Plan anticipates the potential for a land exchange that could create up to 15 acres of new wetland habitat within Sub-Area E, in exchange for developing the 8-acre Edgewater Freshwater Marsh. Before implementation of such a land swap could occur, EBMUD would need to become a willing partner in this concept, in exchange for financial or real estate considerations. No such arrangement with EBMUD has yet been made, and EBMUD does have other long-term land use options related to their own business needs for this site. However, should the EBMUD parcel be made available, the Specific Plan Buildout scenario proposes to re-create this site into an approximately 15-acre freshwater seasonal wetland habitat that would replace habitat lost at the Edgewater Freshwater Marsh

Public Agency Approvals

City of Oakland

This EIR is intended to provide the necessary environmental review for all City of Oakland discretionary approvals and action necessary to implement the Coliseum District portion of the Project, as well as for all approvals needed from other governmental agencies related to development of the Coliseum District, including but are not limited to the following.

Coliseum District:

- Approval of the proposed Coliseum Area Specific Plan;

- Approval of one General Plan Amendment and one General Plan correction, to bring the area on San Leandro Street, between 66th Avenue, 76th Avenue, Coliseum BART station and the Railroad tracks, into the Community Commercial designation;
- Approval of three new zoning districts ("D-CO-1" through "D-CO-3") in the Oakland Planning Code, and approval of four new zoning map amendments to allow new residential, hotel, sports facilities, as well as add open space to the Coliseum District
- Approval of a Preliminary Development Plan (PDP) for the Coliseum District;
- Approval of subsequent Final Development Plans (FDPs) for each phase of new development within the Coliseum District;
- Approval of all necessary subsequent Conditional Use Permits (CUPs) for new stadiums, ballparks and arenas, and any new housing within those portions of the Coliseum District;
- Approval of Subdivision Maps or lot line adjustments, as may be necessary to create individual development sites;
- Design Review approvals for all subsequent individual development projects within the Coliseum District, pursuant to Chapter 17.136 of the Oakland Planning Code;
- Approval of a Category IV Creek Protection Permit for exterior development and work conducted within 20 feet from the top of bank of Elmhurst Creek or Damon Slough, and/or a Category III Creek Protection Permit for development and work conducted within 100 feet from the centerline of Elmhurst Creek or Damon Slough, pursuant to Chapter 13.16 of the Oakland Municipal Code;
- Tree removal permits pursuant to the City's Protected Trees Ordinance (Chapter 12.36 of the Oakland Municipal Code);
- Encroachment permits for work within and close to public rights-of-way (Chapter 12.08 of the Oakland Municipal Code); and
- Demolition permits, grading permits, and building permits.

To the extent possible, the City of Oakland will rely on this EIR to provide environmental review for subsequent projects or their sites that are analyzed as part of this EIR.

Plan Buildout

This EIR also provide the necessary environmental review for City of Oakland discretionary approvals and action necessary to implement portions of Plan Buildout. In addition to approval of the Specific Plan, a number of additional City approvals would be required prior to implementation of individual development projects pursuant to the Plan within Sub-Areas B, C, D or E. The City of Oakland would be responsible for the following additional approvals:

- Approval of 17 additional General Plan Amendments, changing the existing General Plan land use designations in the Plan Area to Regional Commercial, Business Mix, and Urban Park and Open Space, allowing the goals and actions of the Plan to be codified in the Oakland General Plan, Land Use and Transportation Element;
- Approval of three additional new zoning districts ("D-CO-4" through "D-CO-6") and approval of a new zoning map with 22 zoning map changes;
- Approval of Memorandum of Understanding (MOU) or other similar instrument between the City of Oakland and the Port of Oakland, clarifying the regulatory land use jurisdiction over those properties

within the Oakland Airport Business Park, or under Port ownership. Implementation of the Specific Plan within areas currently under the Port's regulatory jurisdiction will require either the Port's co-approval of the Specific Plan along with potential commensurate changes to its Land Use and Development Code (LUDC), or for the Port to cede it's regulatory land use authority for those lands within the Specific Plan to the City of Oakland;

This EIR may also provide the necessary environmental review for City of Oakland discretionary approvals and action necessary for implementation of Specific Plan buildout. A number of permits and approvals would be required before full Buildout could proceed. As Lead Agency, the City of Oakland would be responsible for many of the approvals required for development. A list of required permits and approvals that may be required by the City includes, but is not limited to:

- Approval of Preliminary Development Plans (PDP) within the Science and Technology District (Sub-Areas B and C), as may be required;
- Approval of subsequent Final Development Plans (FDPs) each phase of new development within these future PUDs;
- Approval of Subdivision Maps or lot line adjustments, as may be necessary to create campus-style development sites;
- Design Review approvals for subsequent individual development projects pursuant to Chapter 17.136 of the Oakland Planning Code;

At such time as individual development proposals and public infrastructure and transportation improvements as contemplated under this Specific Plan are proposed to be implemented within Sub-Areas B, C, D and E, those individual actions will be subject to their own environmental determination by the City.

Other Agencies Whose Approval may be Required

In addition to the City of Oakland, there are a number of other agencies whose approvals and authorizations will or may be required to implement the Specific Plan. These possible other agencies and their approvals may include, but are not limited to the following:

- Port of Oakland – Approval of Memorandum of Understanding (MOU) or other similar instrument between the City of Oakland and the Port of Oakland, clarifying the regulatory land use jurisdiction over properties within the Oakland Airport Business Park. Implementation of the Specific Plan within areas currently under the Port's regulatory jurisdiction will require either the Port's co-approval of the Specific Plan along with potential commensurate changes to its Land Use and Development Code (LUDC), or for the Port to cede it's regulatory land use authority for those lands within the Specific Plan to the City of Oakland;
- County of Alameda – lease terms and other agreements related to use of their jointly-owned lands within the Coliseum District;
- California Department of Transportation – approval of encroachment permits and other permits necessary to construct interchange and intersection improvements at locations within their jurisdiction, as well as construction of the overhead pedestrian/transit "high-line" overpass over I-880;
- Bay Area Rapid Transit District – for approvals and construction of planned improvements and enhancements to the Coliseum BART station, including improved pedestrian access, increased fair gate capacity, widened and/or lengthened station platforms and an overhead canopy;

- Bay Area Air Quality Management District (BAAQMD) – Granting of permits for stationary source air emissions and compliance with Regulation 2, Rule 1 for all portable construction equipment subject to that rule;
- East Bay Municipal Utilities District (EBMUD) – Granting new water service connections and meters.
- State Water Resources Control Board (SWRCB) – Acceptance of Notice of Intent to obtain coverage under the General Construction Activity Storm Water Permit.
- Regional Water Quality Control Board – Waste Discharge Requirements (WDRs) or National Pollutant Discharge Elimination System (NPDES) permit
- Alameda County Airport Land Use Commission (and other Federal Aviation Administration approvals) for any buildings taller than 159.3 feet within the surface height-restricted area of the Oakland International Airport Land Use Compatibility Plan.

Creeks and Shorelines

Specific to work within creeks and along the shoreline:

- United States Army Corps of Engineers - Clean Water Act Section 404 Permit for all work within Elmhurst Creek, Damon Slough and San Leandro Bay shoreline improvements and/or modifications;
- California Department of Fish and Wildlife - Section 1602 Streambed Alteration Permit for work within Elmhurst Creek and Damon Slough;
- SF Regional Water Quality Control Board - Clean Water Act Section 401 Permit for work within Elmhurst Creek and Damon Slough, and for San Leandro shoreline improvements and/or modifications;
- San Francisco Bay Conservation and Development Commission – Major Permit for San Leandro shoreline improvements and/or modifications;
- Regional Water Quality Control Board – Waste Discharge Requirements (WDRs) or National Pollutant Discharge Elimination System (NPDES) permit

Bay Cut

Specific to the San Leandro Bay cut inlet concept under Specific Plan Buildout:

- Regional Water Quality Control Board – Construction General Permit Stormwater Pollution Prevention Plan (SWPPP) with a formal Risk Level designation
- California Department of Fish and Wildlife – Technical Assistance Consultation and possible MOU (for State Fully Protected species Salt Marsh Harvest Mouse, California Clapper Rail)
- United States Fish and Wildlife Service - Letter of Concurrence (for Salt Marsh Harvest Mouse, California Clapper Rail
- US NOAA National Marine Fisheries Service - Letter of Concurrence (for steelhead and green sturgeon)
- United States Army Corps - Rivers and Harbors Act Section 10 Permit (also covers United States Coast Guard requirements)
- Interagency Dredge Material Management Office (DMMO) - Dredging-Dredged Material Reuse/Disposal Permit

- California Department of Fish and Wildlife – Incidental Take Permit (for Long fin smelt)
- United States NOAA National Marine Fisheries Service - Essential Fish Habitat (EFH) Consultation

Summary of Impacts and Mitigation Measures

The following **Table 2-1**: Summary of Impacts and Mitigation Measures provides a summary of potential environmental impacts, applicable Standard Conditions of Approval, recommended mitigation measures, and the resulting level of significance after implementation of all mitigation measures. For a more complete discussion of potential impacts and recommended mitigation measures, please refer to the specific discussions in the respective individual chapters of this Draft EIR.

Significant and Unavoidable Impacts

The following list of environmental impacts identifies those considered in this EIR to be significant and unavoidable. Although mitigation measures for many of these impacts (including physical modifications to intersection operations) have been identified, implementation of some of these mitigation measures would be the responsibility of other cities or agencies (i.e., the Port of Oakland, the cities of Alameda, City of San Leandro, Caltrans, etc.), and the City of Oakland, as lead agency, cannot ensure their implementation. For other impacts, mitigation measures recommended in this EIR may prove to be infeasible or their implementation may not be certain based on physical, economic, technical or other reasons, and those impacts are also considered to be significant and unavoidable.

Air Quality

- Construction activities pursuant to Plan Buildout (including development at the Coliseum District) will generate regional ozone precursor emissions and regional particulate matter emissions from construction equipment exhaust. For most individual development projects, construction emissions will be effectively reduced to a level of less than significant with implementation of required City of Oakland Standard Conditions of Approval. However, larger individual construction projects may generate emissions of criteria air pollutants that would exceed the City's thresholds of significance. Even with implementation of MM Air 6A-1: Reduced Construction Emissions, it cannot be certain that emissions of ROG and NOx can be reduced to below threshold levels and this impact is conservatively deemed to be significant and unavoidable.
- New development pursuant to the Project (including at the Coliseum District) would result in operational average daily emissions of criteria pollutants (ROG, NOX, PM2.5 and PM10) that would exceed applicable threshold criteria. Even with implementation of SCA Trans-1: Transportation Demand Management (TDM) Program, this impact would be significant and unavoidable.

Biological Resources

- Future development pursuant to Plan Buildout, particularly related to the proposed Bay Inlet cut and the fill and development of the Edgewater Freshwater Marsh, could have a substantial adverse effect, either directly or through habitat modifications, on candidate, sensitive or special status species. Not until such time as the details of these Project elements are known, permits from responsible agencies are sought, and the requirements and conditions of the responsible regulatory agencies specific to these Project elements are fully known, can any determination be made as to the efficacy of recommended mitigation measures (including MM Bio 1A-1: Pre-construction Nesting

Bird Surveys and Buffers, MM Bio 1A-2: In-water Work Restrictions, MM Bio 1A-3: Salt Marsh Protection, MM Bio 1B-1: In-Bay Dredge Requirements, and MM Bio 1B-2: Freshwater Marsh Restoration Plan). Therefore, this impact is conservatively deemed to be significant and unavoidable.

Cultural and Historic Resources

- Future development of the Coliseum District would result in ultimate demolition of the Oakland Coliseum and potentially the Arena, causing a substantial adverse change in the significance of the Oakland Coliseum and Arena Complex, a historical resource as defined in CEQA Guidelines Section 15064.5. Under the proposed Project, demolition of the Oakland Coliseum is identified as the only feasible option to move forward with development within the Coliseum District, whereas demolition of the existing Arena is identified as only one of several potential development options. Even with implementation of MM Cultural 1A-1: Site Recordation, MM Cultural 1A-2: Public Interpretation Program and MM Cultural 1A-3: Financial Contribution, this impact would be significant and unavoidable.

Noise

- Future development of new sports and special events venues in the Coliseum District would generate operational noise that would exceed the City of Oakland Noise Ordinance at new, on-site sensitive receivers. There is no feasible mitigation to reduce game-day and special event noise from the new stadium and ballpark (assuming a non-roof design) at proposed new on-site sensitive receivers, and this impact is considered significant and unavoidable.

Transportation

- Under the Existing plus Coliseum District scenario, 9 intersections would be significantly affected by traffic generated within the Coliseum District. Intersection improvements recommended in this EIR can reduce the impacts at all affected intersections to a less than significant level. However, 8 of these 9 intersections are conservatively identified as significant and unavoidable because they are not in the City of Oakland's jurisdiction and implementation of recommended improvements cannot be ensured.
- Under the 2035 plus Coliseum District scenario, 25 intersections would be significantly affected by traffic generated within the Coliseum District. Intersection improvements recommended in this EIR can reduce the impacts at 15 of these affected intersections to a less than significant level. However, 11 of these 15 intersections are conservatively identified as significant and unavoidable because they are not in the City of Oakland's jurisdiction and implementation of recommended improvements cannot be ensured. No improvements are identified as being feasible to reduce impacts at the remaining 10 affected intersections, and these impacts would remain significant and unavoidable.
- Under the 2035 plus Plan Buildout scenario, 40 intersections would be significantly affected by traffic generated by Plan Buildout. Intersection improvements recommended in this EIR can reduce the impacts at 21 of these affected intersections to a less than significant level. However, 14 of these 21 intersections are conservatively identified as significant and unavoidable because they are not within the City of Oakland's jurisdiction and implementation of recommended improvements cannot be ensured. No improvements are identified as being feasible to reduce impacts at the remaining 19 affected intersections, and these impacts would remain significant and unavoidable.

- Under the 2035 plus Coliseum District scenario, traffic generated within the Coliseum District would significantly degrade traffic conditions on northbound I-880 along 1 segment (99th-Hegenberger) during the pm peak, and on southbound I-880 at 3 off-ramps (High off, 98th off, and Davis off) during the pm peak. No feasible mitigation measures are available that would reduce the magnitude of this impact.
- Under the 2035 plus Plan Buildout scenario, traffic generated by Plan Buildout would significantly degrade traffic conditions on northbound I-880 along 3 segments (from 99th Avenue - High) during the pm peak, and on southbound I-880 along 2 segments (Hegenberger - Davis Street) and at 5 ramps (High off, 42nd on, 66th on, 98th off, and Davis off) during the pm peak. No feasible mitigation measures are available that would reduce the magnitude of this impact.
- The incremental addition of special event traffic resulting from the larger sport and event venues may result in significant impacts on event days. An Event Traffic Management Plan is required to reduce the magnitude of the impacts during special events, but the effectiveness of such a Plan cannot be accurately estimated at this time.
- Development under the proposed Project would generate substantial multi-modal traffic traveling across at-grade railroad crossings at 66th, 69th and 75th Avenues that cause or expose roadway users to a permanent and substantial transportation hazard. Specific crossing improvements are recommended in this EIR, but may not prove feasible (physically, financially or otherwise), and require the consent or approval of the CPUC or Railroad and cannot be ensured.

Recommended Conditions of Approval

Although not required by CEQA, certain "recommendations" are included in this EIR. These recommendations are not necessary to address or mitigate any significant environmental impacts of the Project under CEQA, but are recommended by City staff to address effects of the Project. These recommendations will be considered by decision makers during the course of Project review and may be imposed as Project-Specific Conditions of Approval.

It is not yet known which of these recommendations may be implemented and if so whether it would be as part of the Project or independent of the Project. The environmental consequences of each recommendation have been considered and none of the recommendations would result in any significant impacts under CEQA.

Summary of Alternatives

Chapter 5 presents an analysis of a range of reasonable alternatives to the Project. The following alternatives were analyzed:

- Alternative 1: No Project,
- Alternative 2: Fewer Sports Venues (i.e., 2, 1 or no new venues),
- Alternative 3: Reduced Project, and
- Alternative 4: Maximum Development Potential Alternative, and
- a Mitigated Alternative.

To the extent that the sports franchises may consider off-site alternatives for their home field venues, those off-site facilities would need to be considered on their own merit, and evaluated pursuant to CEQA in separate environmental reviews.

The No Project would be the environmentally superior alternative. However, Section 15126.6(e)(2) of the CEQA Guidelines requires that if the No Project Alternative is identified as the environmentally superior alternative, then the EIR shall identify another alternative from among those alternatives considered as the environmentally superior alternative.

Although Alternative #3: Reduced Development Alternative is considered environmentally superior to the Project and to the other alternatives that are described above, Alternative #3 would still result in numerous significant environmental effects that either require mitigation (and in certain circumstance, mitigation whose implementation may be uncertain), or impacts which are significant and unavoidable. An additional Mitigated Alternative is defined that is able to avoid and or reduce a number of these impacts to an even further extent, and this Mitigated Alternative is considered the environmentally superior alternative. However, this Mitigated Alternative may not be able to achieve all of the basic Project objectives.

Areas of Public Concern

The following topics were raised in comments received in response to the April 19, 2013 Notice of Preparation (NOP) of this EIR and at the May 1, 2013 EIR scoping session held before the City's Planning Commission[1]. Each of these topics is addressed in this EIR. Issues of concern (including some non-CEQA issues) include, but are not limited to, the following:

- land use compatibility, safety and noise and vibration impacts associated with existing and on-going rail operations, particularly at at-grade rail crossings
- including a bicycle component in the Plan and adequately addressing bicycle issues in the EIR
- providing a parking management plan for the Project that may include a Parking Benefits District
- provision of Community Benefits in exchange for increased development potential at the Project site
- potential degradation of visual quality and character associated with increased building heights, particular to the Doolittle Drive gateway to the City of San Leandro
- construction-period air quality and noise concerns
- general and specifically-defined concerns regarding increased traffic and construction-period traffic
- noise and safety compatibility, airspace protection and aircraft overflights concerns associated with the Oakland International Airport
- the adequacy of logistics and warehouse acreage provided within the Plan to support Oakland International Airport operations
- impacts related to land use compatibility, the Port's land use plans and policies and Tidelands Trust incompatibilities, especially in regards to development of new residential uses within the current Airport Business Park
- adaptation and mitigation measures to address sea level rise
- retaining the Coliseum and Arena by either retrofitting them to accommodate the sports teams, or by finding alternative uses for these existing historic resources

[1] A public scoping session on the Cultural and Historic Resources impacts of the Plan was held before the Landmarks Preservation Advisory Board on May 13, 2013.

- providing affordable housing opportunities within the Planning area
- providing publicly-accessible space that is open and enjoyable to the general public, including existing residents in the surrounding neighborhoods.

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Aesthetics		
Aesthetics 1A: New development of the Coliseum District would not have a substantial adverse effect on a public scenic vista. **Aesthetics 1B**: Future development pursuant to Plan Buildout would not have a substantial adverse effect on a public scenic vista.	None needed	Less than Significant
Aesthetics 2: Future development would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, located within a state or locally designated scenic highway.	None needed	No Impact
Aesthetics 3: Future development would not substantially degrade the existing visual character or quality of the site and its surroundings	None needed	Less than Significant
Aesthetics 4: Future development could create a new source of substantial light or glare which would substantially and adversely affect day or nighttime views in the area.	None needed SCA Aesth-1: Lighting Plan	Less than Significant
Aesthetics 5A: New development of the Coliseum District could introduce structures and/or landscape that would now or in the future cast substantial shadows on existing solar collectors and could cast a shadow that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors. New development within the Coliseum District would not cast a shadow that would substantially impair the beneficial use of a	**MM Aesthetics 5A-1**: If feasible, new structures and landscape should be sited and designed to avoid casting winter shadows specifically on the photovoltaic panels at Lion Creek Crossings apartments, such that solar effectiveness would be compromised and result in a substantial loss of power, income, or use. If the casting of shadows on the Lion Creek Crossings development cannot be avoided, the developer shall work with the owners of Lion Creek Crossings to provide compensatory funding for any extra power cost that could be incurred for increased utility bills from affected solar collectors.	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
public park, lawn, garden, or open space, nor would it cast a shadow on a historic resource such that the shadow would materially impair the resource's historic significance.		
Impact Aesthetics 5B: Future development pursuant to Plan Buildout could introduce additional new buildings and landscape (beyond that discussed above for the Coliseum District), but this new development would not cast substantial shadows on existing solar collectors; would not cast shadows that substantially impair the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors; would not cast shadows that substantially impair the beneficial use of a public park, lawn, garden, or open space; and would not cast shadows that materially impair the significance of an historic resource	None needed	Less than Significant
Impact Aesthetics 6: Future development would not require an exception or variance to the policies and regulations in the General Plan, Planning Code, or Uniform Building Code that causes a fundamental conflict with policies and regulations addressing the provision of adequate light related to appropriate uses.	None needed	No Impact
Impact Aesthetics 7A: The threshold of significance does not apply to development in the Coliseum District, as it is neither located adjacent to a substantial water body (it is ¾ miles away from the Bay shore), nor is it located in Downtown.	None needed	No Impact
Impact Aesthetics 7B: Future development pursuant to Plan Buildout could create winds	**MM Aesthetics 7**: Any structures proposed within 100 feet of San Leandro Bay that would exceed 100 feet in height must undertake a wind study consistent with the requirements of the City of	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
that exceed 36 mph for more than one hour during daylight hours during the year.	Oakland. The wind analysis must consider the project's contribution to wind impacts to on- and off-site public and private spaces. Based on the findings of the wind analysis, the structure must be redesigned to prevent it from creating winds in excess of 36 mph for more than one hour during daylight hours.	
Air Quality		
Plan Level **Impact Air-1**: Adoption and implementation of the Project (at the Coliseum District and under Plan Buildout) would not fundamentally conflict with or obstruct implementation of any control measures in the CAP, and the Specific Plan demonstrates reasonable efforts to implement CAP control measures.	SCA Transp-1: Parking and Transportation Demand Management	Less than Significant
Impact Air-2: New development within the Project Area (for both the Coliseum District and for Plan Buildout) will be located near existing and planned sources of toxic air contaminants and within 500 feet of freeways and high-volume roadways containing 100,000 or more average daily vehicle trips. However, pursuant to City of Oakland Standard Condition of Approval SCA Air-2, special overlay zones containing development standards that minimize potential exposure to toxic air contaminants will be implemented.	SCA Air-2: Exposure to Air Pollution (Toxic Air Contaminants)	Less than Significant
Impact Air-3: Development in accordance with the Specific Plan (both at the Coliseum District and for Plan Buildout) would not expose a substantial number of new people to existing and new objectionable odors.	None needed	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Project Level Analysis **Impact Air-4**: During construction, individual development projects pursuant to the Specific Plan at the Coliseum District and under Plan Buildout will generate fugitive dust from demolition, grading, hauling and construction activities. Fugitive dust will be effectively reduced to a level of less than significant with implementation of required City of Oakland Standard Conditions of Approval.	SCA Air-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions) SCA Air-3: Asbestos Removal in Structures	Less than Significant
Impact Air-5A: During construction, subsequent development at the Coliseum District pursuant to the Project will generate regional ozone precursor emissions and regional particulate matter emissions from construction equipment exhaust that, even with implementation of City of Oakland SCAs, would exceed the City's thresholds of significance. **Impact Air-5B**: In addition to the Coliseum District emissions, construction activities pursuant to Plan Buildout will generate additional regional ozone precursor emissions and regional particulate matter emissions from construction equipment exhaust. For most individual development projects, construction emissions will be effectively reduced to a level of less than significant with implementation of required City of Oakland Standard Conditions of Approval. However, larger individual construction projects may generate emissions of criteria air pollutants that would exceed the City's thresholds of significance.	SCA Air-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions) **MM Air 6A-1: Reduced Construction Emissions** (see Impact Air-6, below)	Even with the recommended mitigation measures, it cannot be certain that emissions of ROG and NOx can be reduced to below threshold levels. Conservatively deemed to be **Significant and Unavoidable**
Impact Air-6A: New sources of TAC emissions resulting from construction activity at the	SCA Air-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions)	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Coliseum District would result in an increase in cancer risk level for the maximum exposed individual of greater than 10 in one million.	**MM Air 6A-1: Reduced Construction Emissions**. Further reduce toxic air contaminant emissions from construction activities at the Coliseum District (especially DPM and PM2.5) to ensure a resulting cancer risk level of less than 10 in a million. Additional emission reduction strategies to achieve this health risk standard may include, but are not limited to requiring on-site construction equipment (including concrete and asphalt crushers and/or haul trucks) to include emission reduction technologies such as low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or add-on devices such as particulate filters that are capable of further reducing toxic air contaminants (especially DPM and PM2.5) beyond the 45% reduction as required in SCA A, such that construction emissions result in cancer risks of less than 10 in a million for off-site sensitive receptors. **MM Air 6A-2: Construction Emission Exposure**. Further reduce toxic air contaminant exposure risk to on-site sensitive receptors to ensure a resulting cancer risk level of less than 10 in a million. Additional risk reduction strategies to achieve this standard may include, but are not limited to successful combinations of the following: a) Require that all demolition activity and any on-site crushing operation (if conducted) be completed prior to the construction of new housing units on the Coliseum District within 200 meters of the demolition or construction activity. b) Install MERV-13 filters at any new on-site residences at the Coliseum District that will be exposed to subsequent on-site construction activity within 100 meters.	
Impact Air-6B: In addition to the Coliseum District emissions, construction of other individual development projects pursuant to Plan Buildout will generate construction-related toxic air contaminant (TAC) emissions from fuel-combusting construction equipment and mobile sources that could exceed thresholds for cancer risk, chronic health index, acute health index or annual average PM2.5 concentration levels. Other than the unique emissions associated with crushing or off-hauling of debris associated with demolition of the existing Coliseum (discussed above and requiring additional mitigation to achieve less than significant effects), the construction-related TAC emissions from other	SCA Air-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions)	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Plan Buildout construction will be reduced to a less than significant level with implementation of required City of Oakland Standard Conditions of Approval.		
Impact Air-7A: New development at the Coliseum District would result in operational average daily emissions of more than 54 pounds per day of ROG, NOX, or PM2.5 and 82 pounds per day of PM10; and would result in maximum annual emissions of 10 tons per year of ROG, NOX, of PM2.5 and 15 tons per year of PM10. **Impact Air-7B**: In addition to the Coliseum District's criteria pollutant emissions, new development pursuant to Plan Buildout would result in additional operational average daily emissions that would exceed the City's thresholds of significance.	SCA Trans-1: Transportation Demand Management (TDM) Program	**Significant and Unavoidable**
Impact Air-8: Development at the Coliseum District and under Plan Buildout would not contribute to carbon monoxide (CO) concentrations exceeding the California Ambient Air Quality Standards (CAAQS) of nine parts per million (ppm) averaged over eight hours and 20 ppm for one hour.	None required	Less than Significant
Impact Air-9: New sources of TACs resulting from operations pursuant to Buildout of the Plan would not result in an increase in cancer risk level greater than 10 in one million, a non-cancer risk (chronic or acute) hazard index greater than 1.0, or an increase of annual average PM2.5 concentration of greater than 0.3 micrograms per cubic meter.	SCA AQ-2: Exposure to Air Pollution (Toxic Air Contaminants)	Less than Significant
Impact Air-10A: New development at the	SCA AQ-2: Exposure to Air Pollution (Toxic Air Contaminants)	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Coliseum District would expose new sensitive receptors to substantial levels of toxic air contaminants (TACs) resulting in a cancer risk level greater than 100 in one million, a non-cancer risk (chronic or acute) hazard index greater than 10.0, or an increase of annual average PM2.5 concentration of greater than 0.8 micrograms per cubic. However, implementation of City of Oakland Standard Conditions of Approval would be capable or reducing this impact to levels of less than significant. I**mpact Air-10B**: New development pursuant to Plan Buildout could expose additional new sensitive receptors to substantial levels of toxic air contaminants (TACs). However, implementation of City of Oakland Standard Conditions of Approval would be capable or reducing this impact to levels of less than significant.		
Biological Resources		
Impact Bio-1A: New development within the Coliseum District, particularly the proposed realignment of Elmhurst Creek and construction work related to enhancements of Damon Slough, could have a substantial adverse effect, either directly or through habitat modifications on identified candidate, sensitive, or special status species.	SCA Bio-12: Regulatory Permits and Authorizations SCA Bio-9: Erosion and Sedimentation Control Plan, SCA Bio-10: Best Management Practices for Soil and Groundwater Hazards, SCA Bio-11: Creek Protection Plan, SCA Bio-13: Creek Monitoring, SCA Bio-14: Creek Landscaping, SCA Bio-15: Creek Dewatering and Aquatic Life, and SCA Bio-16: Creek Dewatering and Diversion SCA Bio-1: Operational Noise-General, SCA Bio-2: Pile Driving and Other Extreme Noise Generators, SCA Bio-4: Tree Removal Permit on Creekside Properties, SCA Bio-5: Tree Removal During Breeding Season, SCA Bio-6: Tree Removal Permit, SCA Bio-7: Tree Replacement Plantings, SCA Bio-8: Tree Protection During Construction, SCA Bio-11: Creek Protection Plan, and SCA Bio-14: Creek Landscaping **MM Bio 1A-1: Pre-construction Nesting Bird Surveys and Buffers**. A qualified biologist shall conduct pre-construction surveys for construction activities between February 15th and September 30th throughout the Coliseum District to identify and subsequently avoid nesting areas for special-	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	status and migratory bird species. Surveys shall be designed and of sufficient intensity to document California rail and raptor nesting within 500 feet of planned work activities and within 50 feet for passerine species nesting activity. a) Construction activities within 500 feet of Damon Marsh and Arrowhead Marsh shall be conducted during the period from August 1 to January 31 to protect potentially nesting California clapper rail, California black rail, Alameda song sparrow and San Francisco saltmarsh common yellowthroat. b) If California clapper rails, California black rails or raptors are found to be nesting within or adjacent to the planned work area, a minimum 100-foot wide buffer shall be maintained between construction activities and the nest location. c) For Alameda song sparrow, San Francisco saltmarsh common yellowthroat and all other protected birds a 50-foot buffer shall be maintained. d) Buffer zones may be reduced in consultation with a qualified biologist. e) Buffers shall be maintained until the young have fledged and are capable of flight or by September 30. **MM Bio 1A-2: In-water Work Restrictions.** In-water construction shall be confined to the period between June 1 and November 30 to protect migrating steelhead from any unanticipated discharges. In-water construction activities shall be confined to low tide cycles where it allows work to be performed outside of the water to the extent practical. a) During in-water construction, any dewatered areas, temporary culverts and temporary cofferdams shall be limited to the minimum area necessary. b) Pumps used for dewatering shall have agency approved fish screens installed to minimize intake of fish into pumps. Diversion structures shall be left in place until all in-water work is completed. c) Temporary culverts and all construction materials and debris shall be removed from the affected area prior to re-establishing flow and prior to the rainy season. **MM Bio 1A-3: Salt Marsh Protection**. All core salt marsh harvest mouse habitat (pickleweed-dominated salt marsh habitat within Damon Marsh and Arrowhead Marsh) areas shall be avoided and protected. If construction activities are within 100 feet of these areas, site-specific buffers shall be established in coordination with a qualified biologist, approved by USFWS or CDFW as appropriate.	

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	a) Buffers shall be designed to preclude changes to water and soil salinity and flooding/inundation regime. The buffers shall be at least 100 feet wide or extend to the current boundary of existing roads or development (includes vacant but graded lots and filled building pads). The qualified biologist may modify these buffers depending on site conditions. b) The construction work area shall be fenced on the side closest to salt marsh habitat to delineate the extent of construction, preclude construction personnel and equipment from entering non-work areas, and prevent debris from entering avoided habitats. The construction boundary fencing may also inhibit movement of species such as the salt marsh harvest mouse and salt-marsh wandering shrew into the construction area. c) The qualified biologist shall be present during work on-site until the construction barrier fencing is installed, instruction of workers has been conducted, and any direct habitat disturbance has been completed. After that time, the contractor or permittee shall designate a person to monitor on-site compliance with all minimization measures. d) The monitor and qualified biologist shall have the authority to halt construction that might result in impacts that exceed anticipated levels	
Impact Bio-1B: Future development pursuant to Plan Buildout could have a substantial adverse effect, either directly or through habitat modifications, on candidate, sensitive or special status species.	See all SCAs listed above for Impact Bio-1A See all Mitigation Measures listed above for Impact Bio-1A **MM Bio 1B-1: In-Bay Dredge Requirements**. No in-Bay dredging activities shall occur during the period from October 1 to July 31 to minimize open water turbidity during the sensitive seasons for steelhead, chinook salmon, Pacific herring, longfin smelt, California brown pelican, and California least tern. a) Measures to be included to reduce the possibility of entrainment of green sturgeon and longfin smelt and may include ensuring dredge drag maintains contact with substrate and potentially investigating methods to move fish out of an area of interest using nets or sounds before dredging. b) Measures to reduce in-water turbidity will be implemented and may include the use of impermeable silt curtains to contain sediments within a limited area until it resettles, the use of gunderbooms, and the use of operational controls for mechanical and hydraulic dredges to limit the amount of sediment released while dredging. **MM Bio 1B-2: Seasonal Wetland Restoration Plan**. To replace impacted wetlands and associated habitat for special status species at the Edgewater Seasonal Wetland, a Habitat Restoration Plan will be developed and implemented to create an approximately 15-acre seasonal wetland and	**Significant and Unavoidable** Not until such time as the details of the project elements are known, permits from responsible agencies are sought, and the requirements and conditions of the responsible regulatory agencies specific to these Project elements are fully known, can any determination be made as to the efficacy of mitigation strategies. Impacts to special status species and their habitat

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	associated Coastal and Valley freshwater wetland habitat in Sub-Area E. The precise boundaries of the newly created wetland have not been defined, but may include portions of the 24-acres of City-owned waterfront property in Sub-Area E, and/or portions of the adjacent EBMUD-owned property pending a negotiated acquisition of such lands. a) The majority of lands potentially considered for wetlands restoration within Sub-Area E Are currently ruderal areas, with some paving. Proposed improvements would include removing paved material, mitigating for potential hazardous materials or soils, and re-grading the site to create low areas that would retain freshwater and rainfall, and creating surrounding uplands to provide bird roosting habitat. b) The area would be planted with appropriate native plants to achieve a functioning seasonal wetland and fenced to exclude people and land-based predators. c) Performance standards that are accepted by the resource agencies for site re-vegetation shall be specified in the plan. d) The restored areas shall be monitored for a minimum of five years and remedial measures taken, such as replanting vegetation or enhancing additional areas, until the performance standards are met. e) Construction of the new wetland must be completed prior to removing the Edgewater Seasonal Wetland. f) The City will enter into discussions with the East Bay Regional Parks District about management of the new wetland in Sub-Area E.	resulting from the proposed Bay Inlet cut and the filling and development of Edgewater Freshwater Marsh are considered significant and unavoidable.
Impact Bio-2A: New development within the Coliseum District could have a substantial adverse effect on wetlands, riparian habitat and other sensitive natural communities.	SCA Bio-10: Best Management Practices for Soil and Groundwater Hazards and SCA Bio-11: Creek Protection Plan *Damon Slough:* SCA Bio-6: Tree Removal Permit and/or SCA Bio-8: Tree Protection Permit, SCA Bio-9: Erosion and Sedimentation Control Plan, SCA Bio-10: Best Management Practices for Soil and Groundwater Hazards, SCA Bio-11: Creek Protection Plan, SCA Bio-12: Regulatory Permits and Authorizations, SCA Bio-13: Creek Monitoring, and SCA Bio-14: Creek Landscaping Plan **MM Bio 2A-1: Vegetation Plan for Coliseum District Sensitive Communities**. A Restoration Plan shall be developed for disturbed sensitive communities. a) Performance standards that are accepted by CDFW and RWQCB for site re-vegetation shall be specified in the plan. The restored areas shall be monitored for a minimum of three years and	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	remedial measures taken, such as replanting vegetation or enhancing additional areas until the performance standards are met. b) The "Cruise America" parcel shall be transferred to an appropriate resource management agency, such as the East Bay Regional Park District (EBRPD) or the California Department of Fish and Wildlife (CDFW). **MM Bio 2A-2: Damon Slough Bridge Structure Placement**. Place any new bridge pilings and abutments outside of coastal tidal marsh habitat. *Elmhurst Creek* SCA Bio-4: Tree Removal Permit on Creekside Properties, SCA Bio-6: Tree Removal Permit, SCA Bio-9: Erosion and Sedimentation Control Plan, SCA Bio-10 Best Management Practices for Soil and Groundwater Hazards, SCA Bio-11: Creek Protection Plan, SCA Bio-13: Creek Monitoring, SCA Bio-15: Creek Dewatering and Aquatic Life, and SCA Bio-16: Creek Dewatering and Diversion **MM Bio 2A-3: Elmhurst Creek Bridge Structure Placements** (only applies if Creek Option B is pursued). Place bridge pilings and abutments outside of coastal scrub habitat. **MM Bio 2A-4: Coastal Scrub Restoration** (only applies if Creek Option B is pursued). Impacts to coastal scrub habitat at Elmhurst Creek shall be fully mitigated by restoration of the "Cruise America" parcel and the restoration of additional upland riparian habitat along Damon Slough. a) Performance standards that are accepted by CDFW and RWQCB for site re-vegetation shall be specified in the Restoration Plan required under Mitigation Measure Bio 2A-1: Vegetation Plan for Coliseum District Sensitive Communities. b) The restored areas shall be monitored for a minimum of three years and remedial measures taken, such as replanting vegetation or enhancing additional areas, until the performance standards are met. **MM Bio 2A-5: Realigned Portion of Elmhurst Creek** (Only applies if Creek Option C is pursued). Any newly aligned and day-lighted portion of Elmhurst Creek must have a channel design that is consistent with the City of Oakland Creek Protection, Storm Water Management and Discharge Control Ordinance. a) A minimum 3:1 ratio for a setback based on the depth of the existing Elmhurst Creek is required for the newly aligned creek banks. b) The created banks will be enhanced to support coastal scrub habitat. Performance standards that are accepted by CDFW and RWQCB for site re-vegetation shall be specified in the	

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	Restoration Plan required by Mitigation Measure Bio 2A-1. c) The restored areas shall be monitored for a minimum of three years and remedial measures taken, such as replanting vegetation or enhancing additional areas, until the performance standards are met. **MM Bio 2A-6: "Cruise America" Tidal Wetland** (Only applies if Creek Option C is pursued). The "Cruise America" or "former RV" parcel (796 66th Avenue) shall be restored to provide a tidal wetland designed to be self-sustaining in hydrological and habitat function. In addition to the newly aligned segment of Elmhurst Creek, approximately 2.4 acres of this new wetland will serve as mitigation for the removal of 1,500 feet of Elmhurst Creek. a) Along with the new wetland, creation of upland coastal scrub habitat will be provided on this site as well. b) Performance standards that are accepted by CDFW and RWQCB for site re-vegetation shall be specified in the Restoration Plan required by Mitigation Measure Bio 2A-1. c) The restored areas shall be monitored for a minimum of three years and remedial measures taken, such as replanting vegetation or enhancing additional areas, until the performance standards are met.	
Impact Bio-2B: Future development pursuant to Plan Buildout could have a substantial adverse effect on riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	See all SCAs listed above for Impact Bio-2A **MM Bio 1B-2: Freshwater Marsh Restoration Plan.** (see full text under Impact Bio-1B) **MM Bio 1B-1: In-Bay Dredge Requirements.** (see full text under Impact Bio-1B) **MM Bio 2A-1: Vegetation Plan for Coliseum District Sensitive Communities**. (see full text under Impact Bio-2A) **MM Bio 2A-2: Damon Slough Bridge Structure Placement**. (see full text under Impact Bio-2A) (see full text under Impact Bio-2A) **MM Bio 2A-3: Elmhurst Creek Bridge Structure Placements.** (see full text under Impact Bio-2A) **MM Bio 2A-4: Coastal Scrub Restoration**. (see full text under Impact Bio-2A) **MM Bio 2A-5: Realigned Portion of Elmhurst Creek.** (see full text under Impact Bio-2A) **MM Bio 2A-6: "Cruise America" (or "former RV" parcel at 796 66th Avenue) Tidal Wetland.** (see full text under Impact Bio-2A) **MM Bio 1A-2: In-water Work Restrictions.** (see full text above under Impact Bio-1A)	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Impact Bio-3: Future development (at the Coliseum District and pursuant to Plan Buildout) could substantially interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	SCA Bio-9: Erosion and Sedimentation Control Plan, SCA Bio-10: Best Management Practices for Soil and Groundwater Hazards, SCA Bio-11: Creek Protection Plan, SCA Bio-12: Regulatory Permits and Authorizations, SCA Bio-13: Creek Monitoring, SCA Bio-15: Creek Dewatering and Aquatic Life, and SCA Bio-16: Creek Dewatering and Diversion SCA Bio-5: Tree Removal During Breeding Season (including consulting biologist's recommendations), SCA Bio-6: Tree Removal Permit, and SCA Bio-7: Tree Replacement Plantings SCA Bio-3: Lighting Plan and SCA Bio-17: Bird Collision Reduction **MM Bio 1A-1: Pre-construction Nesting Bird Surveys and Buffers.** **MM Bio 1A-2: In-water Work Restrictions** **MM Bio 1A-3: Salt Marsh Protection** **MM Bio 1B-1: In-Bay Dredge Requirements** **MM Bio 1B-2: Freshwater Marsh Restoration Plan** **MM Bio 2A-1: Vegetation Plan for Coliseum District Sensitive Communities** **MM Bio 2A-4: Coastal Scrub Restoration** (only applies if Creek Option B is pursued) **MM Bio 2A-5: Realigned Portion of Elmhurst Creek** (Only applies if Creek Option C is pursued) **MM Bio 2A-6: "Cruise America" (or "former RV" parcel at 796 66th Avenue) Tidal Wetland** (Only applies if Creek Option C is pursued) **MM Bio 3-1: Boat docks**. No future boat docks will be allowed associated with the proposed Project to avoid disturbance to migratory and resident waterfowl. **MM Bio 3-2: Herbicide / Pesticide Control**. Future maintenance shall require an herbicide/pesticide drift control plan.	Less than Significant
Impact Bio-4: Future development (at the Coliseum District and pursuant to Plan Buildout) would not fundamentally conflict with an applicable habitat conservation plan or natural community conservation plan.	None needed	No Impact
Impact Bio-5: Future development (at the Coliseum District and pursuant to Plan Buildout)	SCA Bio-5: Tree Removal During Breeding Season (including consulting biologist's recommendations), SCA Bio-6: Tree Removal Permit, and SCA Bio-7: Tree Replacement Plantings	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
would not fundamentally conflict with the City of Oakland Tree Protection Ordinance by removal of protected trees under certain circumstances.		
Impact Bio-6: New development (at the Coliseum District and pursuant to Plan Buildout) would not fundamentally conflict with the City of Oakland Creek Protection Ordinance.	SCA Bio-11: Creek Protection Plan, SCA Bio-12: Regulatory Permits and Authorizations, SCA Bio-13: Creek Monitoring, SCA Bio-15: Creek Dewatering and Aquatic Life, and SCA Bio-16: Creek Dewatering and Diversion	Less than Significant
Cultural Resources		
Impact Cultural-1A: Future development of the Coliseum District would result in ultimate demolition of the Oakland Coliseum and potentially the Arena, causing a substantial adverse change in the significance of the Oakland Coliseum and Arena Complex, a historical resource as defined in CEQA Guidelines Section 15064.5.	Planning Code Section 17.136.075(B) requirements for Design Review approval prior to demolition or removal of historic structures **MM Cultural 1A-1: Site Recordation**. The Oakland Coliseum, the Coliseum Complex, and the Arena (should it ultimately be proposed for demolition), shall be recorded to standards established for the National Park Service's Historic American Buildings Survey (HABS), as detailed below. a. A HABS written report will be completed to document the physical history and description of the historical resource, the historic context for its construction and use, and its historic significance. The report will follow the outline format described in the HABS Guidelines for Historical Reports. b. Large-format, black and white photographs will be taken, showing the buildings in context, as well as details of the design or engineering features and any ancillary buildings, landscaping, fencing, and signage. The photographs will be processed for archival permanence in accordance with the HABS/HAER/HALS Photography Guidelines. The photographs will be taken by a professional with HABS photography experience. Additionally, additional color photographs or videos will be taken of the resource in consultation with OCHS staff. c. Existing drawings, where available, will be photographed with large-format negatives or photographically reproduced on Mylar or other archival paper at the direction of City staff. If existing drawings are not available, a full set of measured drawings depicting existing or historic conditions will be prepared. The drawings will be prepared in accordance with the HABS Guidelines for Recording Historic Structures and Sites with HABS Measured Drawings. The drawings will be prepared by a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architecture or Historic Architecture. d. The HABS documentation, including the report, large-format photographs, and drawings, will	**Significant and Unavoidable** Under the proposed Project, demolition of the Oakland Coliseum is identified as the only feasible option to move forward with development within the Coliseum District. Unlike the Coliseum, demolition of the existing Arena is identified as only one of several potential development options pursuant to the Specific Plan within the Coliseum District. However, because this option is possible, this EIR conservatively assumes demolition of the Arena would occur.

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	be submitted to the OCHS/Oakland City Planning Department; the Oakland Public Library Oakland History Room; and the NWIC. The documentation will be prepared in accordance with the archival standards outlined in Transmittal Guidelines for Preparing HABS/HAER/HAL Documentation. A professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History will manage production of the HABS documentation, which will be reviewed and approved by the City of Oakland Landmarks Preservation Advisory Board (LPAB) prior to demolition. **MM Cultural 1A-2: Public Interpretation Program**. The Oakland Coliseum, the Coliseum Complex, and the Arena (should it ultimately be proposed for demolition) shall be documented in a public interpretation program, as follows: a. Interpretive materials, such as informational plaques depicting the history and design of the historical resource, will be prepared as part of a public interpretation program and be displayed in a location with high public visibility near the site. b. The public interpretation program will be developed by a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History in consultation with the LPAB and OCHS and based on a scope of work approved by the City. c. The LPAB will review and approve of the public interpretation program prior to demolition. **MM Cultural 1A-3: Financial Contribution**. If the Oakland Coliseum and/or Arena are demolished, the project applicant shall make a financial contribution to the City of Oakland to be used to fund historic preservation projects within or in the vicinity of the Coliseum District, as described below. a. The financial contributions can be applied to programs such as a Façade Improvement Program, Tenant Improvement Program or Mills Act program; b. The contributions will be determined by the City at the time of the approval for specific projects based on a formula determined by the Landmarks Preservation Advisory Board.	
Impact Cultural-1B: Other than the proposed demolition of the Oakland Coliseum and the potential demolition of the Arena as discussed above in Impact Cultural-1A, future development pursuant to Plan Buildout does not specifically propose to demolish or materially alter any other historic or potentially historic resources. Any subsequent development project that may propose demolition or alteration of a	Planning Code Section 17.136.075(D) requirements for Design Review approval prior to demolition or removal of historic structures Policy 3.5 of the HRE requirements that the City make specific findings for additions or alterations to existing historic resources or PDHPs prior to approving discretionary permits. SCA Cultural-5: Compliance with Policy 3.7 of the Historic Preservation Element (Property Relocation Rather than Demolition) SCA Cultural-6: Vibrations to Adjacent Historic Structures	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
current or future-defined historic resource would be required to undergo subsequent and individual environmental review, and would also be subject to all applicable City of Oakland's standard conditions of approval, Planning Code requirements and General Plan policy considerations relevant to historic resource preservation		
Impact Cultural-2: Proposed development within the Project Area could directly or indirectly destroy a unique paleontological resource or site, cause a substantial adverse change in the significance of currently undiscovered archaeological resources, or disturb human remains.	SCA Cultural-4: Archaeological Resources – Sensitive Sites SCA Cultural-1: Archaeological Resources, SCA Cultural-2: Human Remains, and SCA Cultural-3: Paleontological Resources	Less than Significant
Geology and Soils		
Impact Geo-1: The proposed Project would not expose people or structures to substantial risk of loss, injury, or death involving strong seismic ground shaking and seismic-related ground failure including liquefaction, lateral spreading, subsidence, or collapse.	SCA Geo-2: Geotechnical Report compliance with the California Code of Regulations, Title 24, California Building Standards Code	Less than Significant
Impact Geo-2: The proposed Project would not result in substantial soil erosion or loss of topsoil, creating substantial risks to life, property, or creeks/waterways.	SCA Hydro-1: Erosion and Sedimentation Control (when no grading permit is required), SCA Hydro-2: Erosion and Sedimentation Control Plan, SCA Hydro-3: Stormwater Pollution Prevention Plan (SWPPP) and SCA Hydro-4: Site Design Measures for Post-Construction Stormwater Management.	Less than Significant
Impact Geo-3: The proposed Project may be located on expansive soil, as defined in section 1802.3.2 of the California Building Code (2007, as it may be revised), creating substantial risks to life or property.	SCA Geo-1: Soil Report, SCA Geo-2: Geotechnical Report	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Impact Geo-4: The proposed Project is located in a developed area above one or more of the following: well, pit, swamp, mound, tank vault, or unmarked sewer line; these features do not create substantial risks to life or property.	SCA Geo-2: Geotechnical Report	Less than Significant
Impact Geo-5: The proposed Project is not located above landfills for which there is no approved closure and post-closure plan. The proposed Project is located above fill.	SCA Geo-1: Soil Report, SCA Geo-2: Geotechnical Report	Less than Significant
Impact Geo-6: The Project Area has sewers available for the disposal of wastewater and therefore it is not applicable whether its soils are incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.	None needed	Less than Significant
Greenhouse Gas Emissions		
Impact GHG-1: New development within the Coliseum District would not generate greenhouse gas emissions specifically from stationary sources, either directly or indirectly, that would produce total emissions of more than 10,000 metric tons of CO2e annually.	None needed	Less than Significant
Impact GHG-2A: New development at the Coliseum District would generate greenhouse gas emissions from both direct and indirect source that would have a significant impact on the environment. Specifically, development at the Coliseum District would involve land use development that would produce total emissions of more than 1,100 metric tons of CO2e annually and more than the Project-level threshold of 4.6 metric tons of CO2e per service	SCA GHG-1: Project-specific GHG Reduction Plans Other SCAs including SCA F: Compliance with the Green Building Ordinance; SCA Traf-1: Parking and Transportation Demand Management; SCA Util-1: Waste Reduction and Recycling; several SCAs regarding landscape requirements and tree replacement; and several SCAs regarding stormwater management	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
population annually. **Impact GHG-2B:** New development pursuant to Plan Buildout would not generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment. Specifically, new development pursuant to Plan Buildout (including all new development within the Coliseum District) would not produce emissions of more than the Plan-level threshold of 6.6 metric tons of CO2e per service population annually, or more than the Project-level threshold of 4.6 metric tons of CO2e per service population annually.	SCA GHG-1: Project-specific GHG Reduction Plans Other SCAs including SCA F: Compliance with the Green Building Ordinance; SCA Traf-1: Parking and Transportation Demand Management; SCA Util-1: Waste Reduction and Recycling; several SCAs regarding landscape requirements and tree replacement; and several SCAs regarding stormwater management	Less than Significant
Impact GHG-3: New development pursuant to Plan Buildout (including the Coliseum District) would not fundamentally conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing greenhouse gas emissions.	SCA GHG-1: Project-specific GHG Reduction Plans Other SCAs including SCA F: Compliance with the Green Building Ordinance; SCA Traf-1: Parking and Transportation Demand Management; SCA Util-1: Waste Reduction and Recycling; several SCAs regarding landscape requirements and tree replacement; and several SCAs regarding stormwater management	Less than Significant
Hazards and Hazardous Materials		
Impact Haz-1: The proposed Project would result in an increase in the routine transportation, use, and storage of hazardous chemicals.	SCA Haz-1: Hazards Best Management Practices	Less than Significant
Impact Haz-2: Construction and development of the proposed Project could result in the accidental release of hazardous materials used during construction through improper handling or storage.	SCA Haz-1, Hazards Best Management Practices, SCA Haz-5, Lead-Based Paint/Coatings, Asbestos, or PCB Occurrence Assessment, SCA Haz-6, Environmental Site Assessment Reports Remediation, SCA Haz-9, Health and Safety Plan per Assessment	Less than Significant
Impact Haz-3: The proposed Project could create a significant hazard to the public through the	SCA Haz-12: Hazardous Materials Business Plan City of Oakland Municipal Code requirements for a Hazardous Materials Assessment Report and	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
storage or use of acutely hazardous materials near sensitive receptors.	Remediation Plan (HMARRP) -	
Impact Haz-4: Development of the proposed Project would require use of hazardous materials within 0.25 mile of a school.	SCA Haz-12: Hazardous Materials Business Plan City of Oakland Municipal Code requirements for a Hazardous Materials Assessment Report and Remediation Plan (HMARRP) -	Less than Significant
Impact Haz-5A: Development of the Coliseum District would be located on sites included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public or the environment. **Impact Haz-5B**: Development of the Project Area would be located on sites included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public or the environment.	*Assessments:* SCA Haz-3: Site Review by the Fire Services Division, Haz-4: Phase I and/or Phase II Reports, Haz-5: Lead-based Paint/Coatings, Asbestos, or PCB Occurrence Assessment, and Haz-11: Radon or Vapor Intrusion from Soil or Groundwater Sources *Remediation* SCA Haz-6: Environmental Site Assessment Reports Remediation, Haz-7: Lead-based Paint Remediation, Haz-8: Other Materials Classified as Hazardous Waste, Haz-9: Health and Safety Plan per Assessment, and Haz-10: Best Management Practices for Soil and Groundwater Hazards *Verification* SCA Haz-3: Site Review by the Fire Services Division, Haz-10: Best Management Practices for Soil and Groundwater Hazards, and Haz-11: Radon or Vapor Intrusion from Soil or Groundwater Sources	Less than Significant
Impact Haz-6: Development of the proposed Project could result in fewer than two emergency access routes for streets exceeding 600 feet in length.	SCA 20, Improvements in the Public Right-of-Way (General), and SCA 21, Improvements in the Public Right-of-Way (Specific)	Less than Significant
Impact Haz-7: The Project Area is located within the Oakland International Airport Land Use Plan area and within two miles of the Oakland Airport, but would not result in a safety hazard for people residing or working in the Project Area.	None needed see also discussion under Impact Land Use-9; Compatibility with ALUCP	Less than Significant
Impact Haz-8: The Project Area is not located in the vicinity of a private airstrip.	None needed	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Impact Haz-9: Development of the Coliseum District under the proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	None needed	Less than Significant
Impact Haz-10: the proposed Project would not expose people or structures to risks involving wildland fires.	None needed	Less than Significant
Hydrology and Water Quality		
Impact Hydro-1A: New development at the Coliseum District would alter drainage patterns and increase the volume of stormwater, and potentially increase the level of contamination or siltation in stormwater flows.	*Work within the Creeks* SCA Hydro-9: Erosion, Sedimentation, and Debris Control Measures; SCA Hydro-10: Creek Protection Plan; SCA Hydro-11: Regulatory Permits and Authorizations; SCA Hydro-12: Creek Monitoring; SCA Hydro-13, Creek Landscaping Plans; SCA Hydro-14: Creek Dewatering and Aquatic Life; and SCA Hydro-15: Creek Dewatering and Diversion *Drainage and Water Quality* SCA Hydro-1: Erosion and Sedimentation Control; SCA Hydro-2: Erosion and Sedimentation Control Plan; SCA Hydro-3: Stormwater Pollution Prevention Plan; SCA Hydro-4: Site Design Measures for Post-Construction Stormwater Management; SCA Hydro-5: Source Control Measures to Limit Stormwater Pollution; SCA Hydro-6: Post-construction Stormwater Management Plan, SCA Hydro-7: Maintenance Agreement for Stormwater Treatment Measures; and SCA Hydro-8: Erosion, Sedimentation, and Debris Control Measures	Less than Significant
Impact Hydro-1B: Future development pursuant to Plan Buildout (including the Coliseum District) would increase the volume of stormwater flows, and potentially increase the level of contamination or siltation in stormwater flows.	see all SCAs listed form Impact Hydro-1A, above	Less than Significant
Impact Hydro-2: New development at the Coliseum Site and pursuant to Plan Buildout would not be susceptible to flooding hazards, as no new development is proposed within a 100-	SCA Hydro- 16: Regulatory Permits and Authorizations; and SCA Hydro-17: Structures within a Floodplain	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
year flood zone as mapped by FEMA.		
Impact Hydro-3: Future development at the Coliseum District and pursuant to Plan Buildout could be susceptible to flooding hazards in the event of dam or reservoir failure, but compliance with all dam safety regulations will reduce this relatively low risk of impact to a less than significant level.	None needed	Less than Significant
Impact Hydro-4: Future development at the Coliseum District and pursuant to Plan Buildout could be susceptible to tsunami-related hazards, but the relatively low risk of occurrence of this impact is less than significant.	None needed	Less than Significant
Impact Hydro-5: Future development at the Coliseum District and pursuant to Plan Buildout could be susceptible to inundation, storm events and storm events with wind waves in the event of sea-level rise.	SCA Hydro-15: Regulatory Permits and Authorizations **Recommendation Hydro-5:** The following additional recommendations are suggested to provide an adaptive approach to addressing a 16 inch sea level rise above current Base Flood Elevation (BFE) for mid-term (2050) planning and design; 1. Design gravity storm drain systems for 16 inches of sea level rise; 2. Design and construct habitable space above at-grade parking structures to allow sea level rise to impact uninhabited parking structures rather than dwelling units. 3. Design buildings to withstand periodic inundation; 4. Prohibit below grade habitable space in inundation zones; 5. Require that all critical infrastructure sensitive to inundation be located above the SLR base flood elevation; 6. Consider means for implementing an adaptive management strategy to protect against long-term sea level rise of as much as 55", potentially including constructing levees or seawalls and providing space for future storm water lift stations near outfall structures into the Bay and Estuary.	Less than Significant
Impact Hydro-6: Future development (at the Coliseum Site and pursuant to Plan Buildout)	None needed	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
would not adversely affect the availability of groundwater supplies or interfere substantially with groundwater recharge.		
Land Use		
Impact Land-1: The proposed Project would not physically divide an established community.	None needed	Less than Significant
Impact Land-2: The proposed Project (at the Coliseum District and pursuant to Plan Buildout) would introduce new residential and other sensitive land uses at locations that could be exposed to noise, emissions and other potential land use incompatibilities associated with adjacent industrial and special event land uses.	SCA AQ-2: Exposure to Air Pollution - Toxic Air Contaminants Health Risk Reduction Measures, SCA Noise-4: Interior Noise, SCA Noise-5: Operational Noise-General; SCA Haz-8: Other Materials Classified as Hazardous Waste; SCA Haz-12: Hazardous Materials Business Plan No mitigation measures required. However, instances of nuisance complaints from new residents could potentially arise between new residential uses in the Project Area and existing industrial uses. To protect existing industrial uses from complaints that may seek to force an existing use to change or permanently restrict its operations, the following legal acknowledgement is recommended: **Recommendation Land 2**: Sellers or leasers of real property intended for residential use and located within the Coliseum District or within the proposed waterfront residential area in Sub-Area B shall provide a disclosure statement included as part of all real estate transactions. The statement shall disclose that the property is located within an area near pre-existing industrial uses, that those industrial uses will be allowed to continue, and that such uses may generate light, noise, dust, traffic and other annoyances or inconveniences incidental to and customarily associated with industrial use..	Less than Significant
Impact Land-3A: Development of the Coliseum District pursuant to the proposed Project would not fundamentally conflict with the City's General Plan. **Impact Land-3B**: Full development of the Project pursuant to Plan Buildout would not fundamentally conflict with the City's General Plan.	The Specific Plan may conflict with a number of individual land use plans and policies, but many of these conflicts would be resolved in the course of Plan implementation due to General Plan amendments proposed to be adopted concurrent with the Specific Plan. **Recommendation 3B**: Prior to approval of any residential development within Sub-Area B on land that is currently in industrial use, the developer of the proposed residential use must find a suitable replacement site acceptable to the owner/user of the industrial property in question, and facilitate acquisition of that replacement site for the displaced industrial use. In particular, an acceptable new site shall be found for the relocation of the City's corporation yard (located at 6767 Edgewater Drive) prior to residential uses being developed on that property.	Less than Significant
Impact Land-4: New development at the Coliseum District and pursuant to Plan Buildout	None needed	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
would not fundamentally conflict with the City's plans and policies of the City's Estuary Policy.		
Impact Land-5A: Development of the Coliseum District pursuant to the proposed Project would conflict with the City's current Planning Code and Zoning Map. **Impact Land-5B**: New development pursuant to Plan Buildout would conflict with the City's current Planning Code and Zoning Map.	City zoning inconsistencies would be made consistent through implementation of the proposed new zoning districts and zoning changes proposed pursuant to the Specific Plan	Less than Significant
Impact Land-6: Development of a new Arena at the proposed Coliseum District as well as development of a residential and retail mixed use site along the waterfront pursuant to the proposed Project would fundamentally conflict with the Port of Oakland's current Land Use and Development Code (LUDC).	**Recommendation/Project Requirement Land-6**: In order to enable implementation of the Project as proposed, the Port Board of Commissioners must either: a) adopt the Specific Plan as its new land use plan for the Business Park, or b) elect to cede land use authority over the ultimate new Arena site and the waterfront residential site to the City of Oakland, or c) choose to instead amend its own LUDC to allow the new Arena and waterfront residential / retail mixed use as permitted or conditionally permitted uses within the Business Park.	The City does not have jurisdictional authority to change or modify the Port's LUDC, and cannot ensure implementation of this measure. If the Port Board does not take any of the actions identified in Recommendation/ Project Requirement Land-6, the proposed new Arena and the proposed new waterfront residential mixed-use development would directly conflict with the LUDC, and those elements of the Project could not move forward.
Impact Land-7: Development of the Coliseum District could fundamentally conflict with the structural height criteria of the Oakland International Airport Land Use Compatibility Plan (ALUCP).	Pursuant to the State Aeronautics Act and Public Utilities Code Sections 21658 and 21659, the City of Oakland is required to inform project proponents of a project that may exceed the elevation of a Part 77 surface that notification to the FAA is required. All such projects are also required to be referred to the ALUC for determination of consistency with the ALUCP prior to their approval by the local jurisdiction.	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	MM Land-7A: No structures that exceed 159.3 feet above mean sea level or otherwise exceed the applicable Part 77 surfaces of the Oakland International Airport Land Use Compatibility Plan, or which exceed 200 feet above the ground level of its site, will be approved by the City unless such a structure has been reviewed by the FAA in accordance with FAR Part 77 and receives either: a) an FAA finding that the structure is "not a hazard to air navigation" and would not result in the FAA instituting any alterations or curtailing of flight operations, or b) a conclusion by the ALUC that the proposed structure is acceptable (i.e., no hazard and no alterations to flight operations) only with appropriate marking and lighting, and that the applicant agrees to mark and light that structure in a manner consistent with FAA standards as to color and other features. **MM Land-7B**: Sellers or leasers of real property located within the Oakland Airport Influence Area shall disclose within an aviation easement included as part of all real estate transactions within the AIA that their property is situated within the AIA, and may be subject to some of the annoyances or inconveniences associated with proximity to airport operations.	
Impact Land-8: New development pursuant to Plan Buildout would not fundamentally conflict with BCDC's Bay Plan or Sea Port Plan.	**MM Land-8A: BCDC Issuance of Major Permit(s)**. Prior to implementation of the proposed Damon Slough enhancements, the Elmhurst Creek realignment, new development within 100 feet of the San Leandro Bay shoreline, and the proposed Bay Cut (and potentially other project elements found to be within BCDC jurisdiction), the project applicants for those projects shall apply for and obtain through an application review process (which may include additional public hearings and review boards) issuance of necessary BCDC permits. **MM Land-8B: Compliance with Bay Plan Dredging Policies**. Any elements of the proposed Project subject to BCDC jurisdiction and which involve excavation and/or dredging activity (i.e., the proposed Bay Cut and potentially the Damon Slough enhancements and Elmhurst Creek realignment) shall comply with the dredging policies of the San Francisco Bay Plan, including but not limited to the following: a) Dredging and dredged material disposal should be conducted in an environmentally and economically sound manner. b) Dredged materials should, if feasible, be reused or disposed outside the Bay and waterways. unless disposal outside these areas is infeasible and the dredged material to be disposed of is consistent with the advice of the San Francisco Bay Regional Water Quality Control Board and the inter-agency Dredged Material Management Office (DMMO); and the period of disposal is consistent with the advice of the California Department of Fish and Game, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	c) Dredged material should not be used for habitat creation, enhancement or restoration projects (except for projects using a minor amount of dredged material), until objective and scientific studies have been carried out to evaluate the advisability of disposal of dredged material in the Bay and in waterways for habitat creation, enhancement and restoration.	
Impact Land-9: Future development within Sub-Areas B, C and or D may occur on lands granted to the Port of Oakland and subject to public trust. The development of residential and neighborhood-serving retail uses would conflict with the public trust doctrine and would not otherwise be permitted. However, the potential inconsistency with the public trust doctrine can be removed through appropriate reallocation of the public trust resource.	**MM Land-9:** To remove potential conflicts with tidelands trust obligations and requirements, the developer of any future project within the Project Area that proposes to use land that is owned by the Port of Oakland must either: a) enter into an agreement with the Port (via the Commercial Real Estate Division) to ground lease and develop such project for uses deemed by the Port Board as consistent with the public trust, or b) buy the underlying land from the Port, subject to a finding that the property is no longer needed or required for the promotion of the public trust (none of these properties would include lands granted to the City by the original legislative grants), with the proceeds of the land sale to be used at the Port Board's discretion for public trust purposes, or c) arrange for an authorized exchange of any lands granted to the Port, subject to a finding that the land is no longer needed or required for the promotion of the public trust, for other lands not now subject to the public trust.	Less than Significant
Impact Land-10: The proposed Project would not fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan.	None needed	Less than Significant
Noise		
Impact Noise-1: Future development (at the Coliseum District and pursuant to Plan Buildout) would include pile drilling and other extreme noise generating construction activities that would temporarily increase noise levels in the vicinity of individual project sites.	SCA Noise-1 : Days/Hours of Construction Operation, SCA Noise-2: Noise Control, SCA Noise-3: Noise Complaint Procedures, SCA Noise-7: Pile Driving and Other Extreme Noise Generators	Less than Significant
Impact Noise-2A: Future development of new sports and special events venues in the Coliseum	SCA Noise-5: Operational Noise-General **Recommendation Noise 2A-1**: Sellers or leasers of real property intended for residential use and	There is no feasible mitigation to reduce

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
District would generate operational noise that would exceed the City of Oakland Noise Ordinance at new, on-site sensitive receivers.	located within the Coliseum District shall provide a disclosure statement included as part of all real estate transactions. The statement shall disclose the presence of the sports and entertainment activities at the Stadium and Ballpark, and the likelihood that noise from these sources will exceed applicable City noise standards.	game-day and special event noise from the new stadium and ballpark (assuming a non-roof design) at proposed new on-site sensitive receivers. **Significant and Unavoidable**
Impact Noise-2B: Development of the proposed Project pursuant to Plan Buildout would not generate operational noise in violation of the City of Oakland Noise Ordinance, based upon required compliance with City of Oakland Standard Conditions of Approval.	SCA Noise-5: Operational Noise-General	Less than Significant
Impact Noise-3: Implementation of the proposed Project will not generate traffic that will cause noise resulting in a 5 dBA permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	None needed	Less than Significant
Impact Noise-4: Buildout of the proposed Project could expose persons to interior Ldn or CNEL greater than 45 dBA in proposed multi-family dwellings and hotels, motels, dormitories and long-term care facilities.	SCA Noise-4: Interior Noise	Less than Significant
Impact Noise-5A: Future development in the Coliseum District would expose proposed new noise-sensitive land uses to noise levels in excess of noise levels considered normally acceptable according to the land use compatibility guidelines of the Oakland General Plan. **Impact Noise-5B**: Plan Buildout would expose	SCA Noise-4: Interior Noise	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
proposed new noise-sensitive land uses to noise levels in excess of noise levels considered normally acceptable according to the land use compatibility guidelines of the Oakland General Plan.		
Impact Noise-6: The proposed Project would not expose persons to or generate noise levels in excess of applicable standards established by a regulatory agency.	SCA Noise-5: Operational Noise-General	Less than Significant
Impact Noise-7: Project construction or project operation pursuant to Plan Buildout may expose persons to or generate groundborne vibration that exceeds the criteria established by the Federal Transit Administration (FTA).	SCA Noise-6: Vibration SCA Noise-7: Pile Driving and Other Extreme Noise Generators, SCA Noise-8: Vibrations near an Historic Resource	Less than Significant
Impact Noise-8: The proposed Project includes areas that are located within an airport land use plan, however, it would not expose people residing or working in the project area to excessive noise levels from aircraft activity.	None needed	Less than Significant
Population and Housing		
Impact PHE-1: Development under the proposed Project would not displace existing housing units in the Project Area.	None needed	Less than Significant
Impact PHE-2: Development under the proposed Project would not displace any people residing in the Project Area.	None needed	Less than Significant
Impact PHE-3: Development under the proposed Project would displace existing businesses and jobs, but not in substantial numbers necessitating construction of replacement	None needed	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
facilities elsewhere, in excess of that contemplated in the City's General Plan.		
Impact PHE-4: Development facilitated by the proposed Project would not induce substantial population growth in a manner not contemplated in the General Plan, either directly by facilitating new housing or businesses, or indirectly through infrastructure improvements such that additional infrastructure is required but the impacts of such were not previously considered or analyzed	None needed	Less than Significant
Public Services and Recreation		
Impact Public-1: The proposed Project could result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities.	SCA Public-1: Conformance with other Requirements SCA Public-2: Fire Safety Phasing Plan	Less than Significant
Impact Public-2: The proposed Project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility not would occur or be accelerated.	None needed	Less than Significant
Impact Public-3: The proposed Project would include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	none needed	Less than Significant
Traffic		
Existing Plus Coliseum District		

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Impact Trans-1: The development of the Coliseum District would add more than 10 peak-hour trips to the Kuhnle Avenue/Mountain Boulevard/I-580 Westbound Off-Ramp (Intersection #3) which would meet peak hour signal warrant (Significant Threshold #6) under Existing Plus Coliseum District conditions.	**Mitigation Measure Trans-1 (Intersection #3)**: Implement the following measures at the Kuhnle Avenue/Mountain Boulevard/I-580 Westbound Off-Ramp intersection: a) Signalize the intersection providing actuated operations, with permitted left-turns on east-west approaches (Mountain Boulevard/I-580 Westbound Off-Ramp) and split phasing on north-south (Kuhnle Avenue) approaches, and b) Coordinate the signal timing at this intersection with the adjacent intersections that are in the same signal coordination group. This intersection is under the jurisdiction of Caltrans so any equipment or facility upgrades must be approved by Caltrans prior to installation.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by Caltrans and the City cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-2: The development of the Coliseum District would add more than 10 peak-hour trips to the Sunnymere Avenue/Kuhnle Avenue/Seminary Avenue/I-580 Eastbound On-Ramp (Intersection #4) which would meet peak hour signal warrant (Significant Threshold #6) under Existing Plus Coliseum District conditions.	**Mitigation Measure Trans-2 (Intersection #4)**: Implement the following measures at the Sunnymere Avenue/Kuhnle Avenue/Seminary Avenue/I-580 Eastbound On-Ramp intersection: a) Restripe eastbound Seminary Avenue approach to provide one left-turn lane and one shared through/right lane, b) Signalize the intersection providing actuated operations, with split phasing on all approaches, c) Coordinate the signal timing at this intersection with the adjacent intersections that are in the same signal coordination group. This intersection is under the jurisdiction of Caltrans so any equipment or facility upgrades must be approved by Caltrans prior to installation	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by Caltrans and the City cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-3: The development of the Coliseum District would add more than 10 peak-hour trips to the Seminary Avenue/Overdale Avenue/I-580 Eastbound/SR 13 Southbound Off Ramp (Intersection #5) which would meet peak hour signal warrant (Significant Threshold #6) under Existing Plus Coliseum District conditions.	**Mitigation Measure Trans-3 (Intersection #5)**: Implement the following measures at the Seminary Avenue/Overdale Avenue/I-580 Eastbound/SR 13 Southbound Off-Ramp intersection: a) Signalize the intersection providing actuated operations, with protected left turns on the westbound Seminary Avenue approach and split phasing on the north/south Overdale Avenue/Off-Ramp approaches. b) Coordinate the signal timing at this intersection with the adjacent intersections that are in the same signal coordination group. This intersection is under the jurisdiction of Caltrans so any	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by Caltrans and the City cannot

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	equipment or facility upgrades must be approved by Caltrans prior to installation.	ensure its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-4: The development of the Coliseum District would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at the San Leandro Street/66th Avenue (Intersection #58) which operates at LOS F during the weekday PM peak hour under Existing Plus Coliseum District conditions	**Mitigation Measure Trans-4 (Intersection #58)**: Implement the following measures at the San Leandro Street/66th Avenue intersection: a) Restripe eastbound 66th Avenue approach to provide one left-turn lane, one through lane, and one right-turn lane, and narrow the westbound direction to one receiving lane b) Restripe westbound 66th Avenue approach to provide one left-turn lane and one shared through/right-turn lane c) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) d) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	Less than Significant
Impact Trans-5: Under Existing Plus Coliseum District conditions, the development of the Coliseum District would cause an increase of more than 5 seconds in average delay on the worst approach for the unsignalized intersection San Leandro Boulevard/Best Avenue/Park Street (Intersection #66), which operates at LOS E or F under No Project conditions (Significant Threshold #5 in San Leandro).	**Mitigation Measure Trans-5 (Intersection #66)**: Implement the following measures at the San Leandro Boulevard/Best Avenue/Park Street intersection: a) Signalize the intersection providing actuated operations. b) Coordinate the signal timing at this intersection with the adjacent intersections that are in the same signal coordination group. This intersection is under the jurisdiction of City of San Leandro so any equipment or facility upgrades must be approved by City of San Leandro prior to installation.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by the City of San Leandro and the City of Oakland cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-6: The proposed Project would cause the San Leandro Boulevard/Marina	**Mitigation Measure Trans-6 (Intersection #69)**: Implement the following measures at the San Leandro Boulevard/Marina Boulevard intersection:	City of Oakland, as lead agency, does not have

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Boulevard (intersection #69) to degrade from LOS D to LOS E (Significant Threshold #1 in San Leandro) during the PM peak hour under Existing Plus Coliseum District conditions.	a) Provide a second left-turn lane on northbound San Leandro Boulevard b) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) c) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	jurisdiction at this intersection. The mitigation would need to be approved and implemented by the City of San Leandro and the City of Oakland cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-7: The development of the Coliseum District would degrade the Coliseum Way/High Street intersection (Intersection #78) from LOS D to LOS E and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) during the AM peak hour, and increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) during the weekday PM peak hour during which the intersection would operate at LOS F under 2035 conditions.	**Mitigation Measure Trans-7 (Intersection #78)**: Implement the following measures at the Coliseum Way/High Street intersection: a) Implement the planned 42nd Avenue/High Street Access Improvements which would include addition of a second left-turn lane on the eastbound High Street approach and a left-turn lane on the westbound High Street approach (see page 4.13-35 for more detail). b) Restripe the northbound Coliseum Way approach to provide one shared left/through lane and one right-turn lane. c) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection). d) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by Caltrans and the City cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-8: The development of the Coliseum District would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Oakland Significant Threshold #5) during the weekday AM peak hour which would operate at LOS F under Existing Plus Coliseum District conditions at the Fernside Boulevard/High Street/Gibbons Drive	**Mitigation Measure Trans-8 (Intersection #92)**: Implement the following measures at the Fernside Boulevard/High Street/ Gibbons Drive intersection: a) Convert the left-turn movements on westbound High Street from protected operations to permitted operations during the AM and PM peak periods b) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) c) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by the City of Alameda and the City of Oakland cannot ensure

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
(Intersection #92)		its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-9: The development of the Coliseum District would increase the total intersection average delay by four seconds or more (Oakland Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Oakland Significant Threshold #4) during the PM peak hour which would operate at LOS E under Existing Plus Coliseum District conditions at the Fernside Boulevard/Otis Drive (Intersection #98).	**Mitigation Measure Trans-9 (Intersection #98)**: Implement the following measures at the Fernside Boulevard/Otis Drive intersection: a) Remove the right turn island on the northbound Otis Drive approach, add a dedicated right turn lane with approximately 50 feet of storage length, and move the northbound stop-bar upstream approximately 20 feet to accommodate the right turn lane storage length. b) Restripe Fernside Boulevard with two receiving lanes.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by the City of Alameda and the City of Oakland cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
2035 Plus Coliseum District **Impact Trans-10**: The development of the Coliseum District would add more than 10 peak-hour trips to the Frontage Road/SR 13 Northbound On-Ramp/Mountain Boulevard (Intersection #1) which would meet peak hour signal warrant (Significant Threshold #6) under 2035 Plus Coliseum District conditions.	**Mitigation Measure Trans-10 (Intersection #1):** Implement the following measures at the Frontage Road/SR 13 Northbound On-Ramp/Mountain Boulevard intersection: a) Signalize the intersection providing actuated operations, with permitted phasing on all approaches. b) Coordinate the signal timing at this intersection with the adjacent intersections that are in the same signal coordination group. This intersection is under the jurisdiction of Caltrans so any equipment or facility upgrades must be approved by Caltrans prior to installation.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by Caltrans and the City cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-11: The development of the	**Mitigation Measure Trans-11 (Intersection #3)**: Implement Mitigation Measure Trans-1 at the	Conservatively considered

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Coliseum District would add more than 10 peak-hour trips to the Kuhnle Avenue/Mountain Boulevard/I-580 Westbound Off-Ramp (Intersection #3) which would meet peak hour signal warrant (Significant Threshold #6) under 2035 Plus Coliseum District conditions.	Kuhnle Avenue/Mountain Boulevard/I-580 Westbound Off-Ramp intersection	**Significant and Unavoidable** see Impact Trans-1
Impact Trans-12: The development of the Coliseum District would add more than 10 peak-hour trips to the Sunnymere Avenue/Kuhnle Avenue/Seminary Avenue/I-580 Eastbound On-Ramp (Intersection #4) which would meet peak hour signal warrant (Significant Threshold #6) under 2035 Plus Coliseum District conditions.	**Mitigation Measure Trans-12 (Intersection #4):** Implement Mitigation Measure Trans-2 at the Sunnymere Avenue/Kuhnle Avenue/Seminary Avenue/I-580 Eastbound On-Ramp intersection.	Conservatively considered **Significant and Unavoidable** see Impact Trans-2
Impact Trans-13: The development of the Coliseum District would add more than 10 peak-hour trips to the Seminary Avenue/Overdale Avenue/I-580 Eastbound/SR 13 Southbound Off Ramp (Intersection #5) which would meet peak hour signal warrant (Significant Threshold #6) under 2035 Plus Coliseum District conditions.	**Mitigation Measure Trans-13 (Intersection #5):** Implement Mitigation Measure Trans-3 at the Seminary Avenue/Overdale Avenue/I-580 Eastbound/SR 13 Southbound Off-Ramp intersection.	Conservatively considered **Significant and Unavoidable** see Impact Trans-3
Impact Trans-14: The development of the Coliseum District would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at Camden Street/North MacArthur Boulevard/Seminary Avenue (Intersection #12) during the weekday PM peak hour which would operate at LOS F under 2035 conditions.	**Mitigation Measure Trans-14 (Intersection #12):** Implement the following measures at the Camden Street/North MacArthur Boulevard/Seminary Avenue Intersection: a) Restripe the eastbound Seminary Avenue approach to provide one left-turn lane and one shared through/right-turn lane by eliminating one of the westbound receiving lanes b) Restripe the westbound Seminary Avenue approach to provide one left-turn lane, one through lane, and one right-turn lane c) Restripe the northbound Camden Street approach to provide one shared left/through/right lane and one bicycle lane d) Convert signal operations from split phasing to permitted phasing on the north/south Camden Street/North MacArthur Boulevard approaches and protected phasing on the east/west Seminary Avenue approaches e) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	approaching the intersection) f) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	
Impact Trans-15: The development of the Coliseum District would degrade the MacArthur Boulevard/ Foothill Boulevard/73rd Avenue (Intersection #13) from LOS E to LOS F, increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) during the PM peak hour under 2035 conditions.	None feasible	**Significant and Unavoidable**
Impact Trans-16: The development of the Coliseum District would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at Foothill Boulevard/Fruitvale Avenue (Intersection #17) during both weekday AM and PM peak hours which would operate at LOS F under 2035 conditions.	None feasible	**Significant and Unavoidable**
Impact Trans-17: The development of the Coliseum District would contribute to LOS E operations at the Foothill Boulevard/Coolidge Avenue (Intersection #18), increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) during the PM peak hour under 2035 conditions	None feasible	**Significant and Unavoidable**
Impact Trans-18: The development of the Coliseum District would increase the total	**Mitigation Measure Trans-18 (Foothill Boulevard/35th Avenue)**: Implement the following measures at Foothill Boulevard/35th Avenue intersection:	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at Foothill Boulevard/35th Avenue (Intersection #19) during both weekday AM and PM peak hours which would operate at LOS F under 2035 conditions.	a) Restripe the eastbound and westbound 35th Avenue approaches to provide an exclusive left-turn lane within the existing right-of-way on each approach b) Update traffic signal equipment to provide protected left-turns on the eastbound and westbound 35th Avenue approaches c) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) d) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	
Impact Trans-19: The development of the Coliseum District would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at Foothill Boulevard/High Street (Intersection #22) during the weekday PM peak hour which would operate at LOS F under 2035 conditions.	**Mitigation Measure Trans-19 (Foothill Boulevard/High Street)**: Implement the following measures at Foothill Boulevard/High Street intersection: a) Convert traffic signal from pre-timed to actuated operations b) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) c) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	Less than Significant
Impact Trans-20: The development of the Coliseum District would degrade the Foothill Boulevard/ Seminary Avenue/Walnut Street (Intersection #23) from LOS E to LOS F, increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) during the PM peak hour under 2035 conditions.	**Mitigation Measure Trans-20 (Foothill Boulevard/ Seminary Avenue)**: Implement the following measures at the Foothill Boulevard/Seminary Avenue/Walnut Street): a) Increase signal cycle length at this intersection and the adjacent and closely spaced signal at Bancroft Avenue/Seminary Avenue (Intersection #29) to 90 seconds during the PM peak hour b) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) c) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	Less than Significant
Impact Trans-21: The development of the Coliseum District would contribute to LOS E operations at the International Boulevard/High Street (Intersection #35), increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase	No feasible mitigation at International Boulevard/High Street	**Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
the average delay for a critical movement by six or more seconds (Significant Threshold #4) during the PM peak hour under 2035 conditions.		
Impact Trans-22: The development of the Coliseum District would contribute to LOS E operations at the International Boulevard/Heavenscourt Boulevard (Intersection #38), increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) during the PM peak hour under 2035 conditions.	No feasible mitigation at International Boulevard/Heavenscourt Boulevard	**Significant and Unavoidable**
Impact Trans-23: The development of the Coliseum District would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at the East 12th Street/Fruitvale Avenue (Intersection #49) during the weekday AM peak hour which would operate at LOS F under 2035 conditions.	No feasible mitigation at East 12th Street/Fruitvale Avenue	**Significant and Unavoidable**
Impact Trans-24: The development of the Coliseum District would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at the San Leandro Street/East 10th Street/Fruitvale Avenue (Intersection #54) during the weekday PM peak hour which would operate at LOS F under 2035 conditions.	No feasible mitigation at San Leandro Street/East 10th Street/Fruitvale Avenue	**Significant and Unavoidable**
Impact Trans-25: The development of the Coliseum District would degrade the San Leandro Street/66th Avenue (Intersection #58)	**Mitigation Measure Trans-25 (San Leandro Street/66th Avenue)**: Implement Mitigation Measure Trans-4 at the San Leandro Street/66th Avenue intersection.	No further mitigation feasible **Significant and**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
from LOS E to LOS F, increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) during the weekday AM peak hour which would operate at LOS E; the development would also increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) during the weekday PM peak hour which would operate at LOS F under 2035 Plus Coliseum District conditions.		**Unavoidable**
Impact Trans-26: The development of the Coliseum District would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at the San Leandro Street/Hegenberger Road Off-Ramp/75th Avenue (Intersection #61) during the weekday PM peak hour which would operate at LOS F under 2035 conditions.	**Mitigation Measure Trans-26 (San Leandro Street/Hegenberger Road Off-Ramp/75th Avenue:** Implement the following measures at the San Leandro Street/ Hegenberger Road Off-Ramp/75th Avenue intersection: a) Convert signal operations for the left-turn lane on southbound San Leandro Street from permitted to protected operations b) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) c) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	No further mitigation feasible **Significant and Unavoidable**
Impact Trans-27: The development of the Coliseum District would cause the increase in average delay of more than 5 seconds on the worst approach for unsignalized intersections that operates at LOS E or F under No Project conditions (Significant Threshold #5 in San Leandro) at the San Leandro Boulevard/West Broadmoor Boulevard/Apricot Street/Park Street (Intersection #66) under 2035 Plus Coliseum District conditions.	**Mitigation Measure Trans-27 (San Leandro Boulevard/West Broadmoor Boulevard/Apricot Street /Park Street)**: Implement the following measures at the San Leandro Boulevard/West Broadmoor Boulevard/Apricot Street /Park Street intersection: a) Signalize the intersection providing actuated operations b) Coordinate the signal timing at this intersection with the adjacent intersections that are in the same signal coordination group. This intersection is under the jurisdiction of City of San Leandro so any equipment or facility upgrades must be approved by City of San Leandro prior to installation.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by the City of San Leandro and the City of Oakland cannot ensure its implementation.

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
		Conservatively considered **Significant and Unavoidable**
Impact Trans-28: The development of the Coliseum District would cause the increase in average delay of more than 5 seconds on the worst approach for unsignalized intersections that operates at LOS E or F under No Project conditions (Significant Threshold #5 in San Leandro) at the San Leandro Boulevard/Best Avenue/Park Street (Intersection #66) under 2035 Plus Coliseum District conditions.	**Mitigation Measure Trans-28 (San Leandro Boulevard/Best Avenue/Park Street)**: Implement Mitigation Measure Trans-5.	Conservatively considered **Significant and Unavoidable** see Impact Trans-5
Impact Trans-29: The development of the Coliseum District would increase the total intersection average delay by four seconds or more (Oakland Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Oakland Significant Threshold #4) during the PM peak hour which would operate at LOS E under 2035 Plus Coliseum District conditions at the San Leandro Boulevard/Davis Street (Intersection #67).	**Mitigation Measure Trans-29 (San Leandro Boulevard/Davis Street)**: Restripe the northbound San Leandro Boulevard approach to add an exclusive right-turn lane at the San Leandro Boulevard/Davis Street intersection.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by the City of Alameda and the City of Oakland cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-30: The development of the Coliseum District would degrade the intersection from LOS E to LOS F, increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) at the Coliseum Way/I-880 Northbound	No feasible mitigation at Coliseum Way/I-880 Northbound Ramps/42nd Avenue	**Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Ramps/42nd Avenue (Intersection #76) during the weekday AM peak hour under 2035 Plus Coliseum District conditions.		
Impact Trans-31: The development of the Coliseum District would contribute to LOS E operations at the Coliseum Way/High Street (Intersection #78) during the AM peak hour and increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4); the development would also increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) during the weekday PM peak hour which would operate at LOS F under 2035 conditions	**Mitigation Measure Trans-31 (Coliseum Way/High Street)**: Implement the following measures at the Coliseum Way/High Street intersection: a) Restripe the northbound Coliseum Way approach to provide one shared left/through lane and one right-turn lane b) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) c) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by Caltrans and the City cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-32: The development of the Coliseum District would degrade the intersection from LOS D to LOS E and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) at the Oakport Street/I-880 Southbound Ramps/High Street (Intersection #79) during the weekday PM peak hour under 2035 Plus Coliseum District conditions.	**Mitigation Measure Trans-32 (Oakport Street/I-880 Southbound Ramps/High Street)**: Implement the following measures at the Oakport Street/I-880 Southbound Ramps/High Street intersection: a) Convert the southbound I-880 Southbound Off-Ramp approach to provide one left-turn lane, two through lanes, and one right-turn lane. b) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) c) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by Caltrans and the City cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-33: The development of the Coliseum District would increase the total intersection V/C ratio by 0.03 or more and	**Mitigation Measure Trans-33 (Fernside Boulevard/High Street/ Gibbons Drive)**: Implement Mitigation Measure Trans-8	Conservatively considered **Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
increase the V/C ratio for a critical movement by 0.05 or more (Oakland Significant Threshold #5) during the weekday AM peak hour which would operate at LOS F; and increase the total intersection average delay by four seconds or more (Oakland Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Oakland Significant Threshold #4) during the PM peak hour which would operate at LOS E under 2035 Plus Coliseum District conditions at the Fernside Boulevard/High Street/Gibbons Drive (Intersection #92).		see Impact Trans-8
Impact Trans-34: The development of the Coliseum District would increase the average delay for a critical movement by six or more seconds (Oakland Significant Threshold #4) during the AM peak hour which would operate at LOS E under 2035 Plus Coliseum District conditions at the Fernside Boulevard/Otis Drive (Intersection #98).	**Mitigation Measure Trans-34 (Fernside Boulevard/Otis Drive)**: Implement Mitigation Measure Trans-9	Conservatively considered **Significant and Unavoidable** see Impact Trans-9
2035 Plus Plan Buildout **Impact Trans-35**: Plan Buildout would add more than 10 peak-hour trips to the Frontage Road/SR 13 Northbound On-Ramp/Mountain Boulevard (Intersection #1) which would meet peak hour signal warrant (Significant Threshold #6) under 2035 Plus Specific Plan Buildout conditions.	**Mitigation Measure Trans-35 (Frontage Road/SR 13 Northbound On-Ramp/Mountain Boulevard)**: Implement Mitigation Measure Trans-10	Conservatively considered **Significant and Unavoidable** see Impact Trans-10
Impact Trans-36: Plan Buildout would add more than 10 peak-hour trips to the Kuhnle Avenue/Mountain Boulevard/I-580 Westbound Off-Ramp (Intersection #3) which would meet peak hour signal warrant (Significant Threshold #6) under 2035 Plus Specific Plan Buildout	**Mitigation Measure Trans-36 (Kuhnle Avenue/Mountain Boulevard/I-580 Westbound Off-Ramp)**: Implement Mitigation Measure Trans-1	Conservatively considered **Significant and Unavoidable** See Impact Trans-1

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
conditions.		
Impact Trans-37: Plan Buildout would add more than 10 peak-hour trips to the Sunnymere Avenue/Kuhnle Avenue/Seminary Avenue/I-580 Eastbound On-Ramp (Intersection #4) which would meet peak hour signal warrant (Significant Threshold #6) under 2035 Plus Specific Plan Buildout conditions.	**Mitigation Measure Trans-37 (Sunnymere Avenue/Kuhnle Avenue/Seminary Avenue/I-580 Eastbound On-Ramp)** : Implement Mitigation Measure Trans-2	Conservatively considered **Significant and Unavoidable** See Impact Trans-2
Impact Trans-38: Plan Buildout would add more than 10 peak-hour trips to the Seminary Avenue/Overdale Avenue/I-580 Eastbound/SR 13 Southbound Off Ramp (Intersection #5) which would meet peak hour signal warrant (Significant Threshold #6) under 2035 Plus Specific Plan Buildout conditions.	**Mitigation Measure Trans-38 (Seminary Avenue/Overdale Avenue/I-580 Eastbound/SR 13 Southbound Off-Ramp)**: Implement Mitigation Measure Trans-3	Conservatively considered **Significant and Unavoidable** See Impact Trans-3
Impact Trans-39: Plan Buildout would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at Camden Street/North MacArthur Boulevard/Seminary Avenue (Intersection #12) during the weekday PM peak hour which would operate at LOS F under 2035 conditions.	**Mitigation Measure Trans-39 (Camden Street/North MacArthur Boulevard/Seminary Avenue)**: Implement Mitigation Measure Trans-14	Less than Significant
Impact Trans-40: Plan Buildout would degrade the MacArthur Boulevard/ Foothill Boulevard/73rd Avenue (Intersection #13) from LOS E to LOS F, increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) during the PM peak hour under 2035 conditions.	No feasible mitigation measures at MacArthur Boulevard/ Foothill Boulevard/73rd Avenue	**Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Impact Trans-41: Plan Buildout would degrade intersection operations from LOS C to LOS E and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) during the AM peak hour at the Foothill Boulevard/14th Avenue (Intersection #15) under 2035 conditions.	No feasible mitigation measures at Foothill Boulevard/14th Avenue	**Significant and Unavoidable**
Impact Trans-42: Plan Buildout would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at Foothill Boulevard/Fruitvale Avenue (Intersection #17) during both weekday AM and PM peak hours which would operate at LOS F under 2035 conditions.	No feasible mitigation measures at Foothill Boulevard/Fruitvale	**Significant and Unavoidable**
Impact Trans-43: Plan Buildout would degrade intersection operations from LOS D to LOS E and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) during the AM peak hour at the Foothill Boulevard/Coolidge Avenue (Intersection #18), and contribute to LOS E operations, increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) during the PM peak hour under 2035 conditions.	No feasible mitigation measures at Foothill Boulevard/Coolidge Avenue	**Significant and Unavoidable**
Impact Trans-44: Plan Buildout would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at Foothill Boulevard/35th Avenue (Intersection #19) during both weekday AM and PM peak hours which would operate at LOS F	**Mitigation Measure Trans-44 (Foothill Boulevard/35th Avenue)**: Implement Mitigation Measure Trans-18	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
under 2035 conditions.		
Impact Trans-45: Plan Buildout would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at Foothill Boulevard/High Street (Intersection #22) during the weekday PM peak hour which would operate at LOS F under 2035 conditions.	**Mitigation Measure Trans-45 (Foothill Boulevard/High Street)**: Implement Mitigation Measure Trans-19.	Less than Significant
Impact Trans-46: Plan Buildout would degrade the Foothill Boulevard/ Seminary Avenue/Walnut Street (Intersection #23) from LOS E to LOS F, increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) during the PM peak hour under 2035 conditions.	**Mitigation Measure Trans-45 (Foothill Boulevard/ Seminary Avenue/Walnut Street)**: Implement Mitigation Measure Trans-20.	Less than Significant
I**mpact Trans-47**: Plan Buildout would degrade intersection operations from LOS D to LOS E during the PM peak hour and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) at the Bancroft Avenue / Havenscourt Boulevard (Intersection #30) under 2035 conditions.	No feasible mitigation measures at Bancroft Avenue / Havenscourt Boulevard	**Significant and Unavoidable**
Impact Trans-48: Plan Buildout would degrade intersection operations from LOS D to LOS E during the PM peak hour and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) at the Bancroft Avenue / 73rd Avenue (Intersection #31) under 2035 conditions.	**Mitigation Measure Trans-48** (**Bancroft Avenue/73rd Avenue)**: Implement the following measures at the Bancroft Avenue/73rd Avenue intersection: a) Provide a second left-turn lane on the northbound Bancroft Avenue approach. b) Replace existing 6-foot gutter pans and prohibit parking on both northbound and southbound Bancroft Avenue with 2-foot gutter pans. c) Reconfigure eastbound 73rd Avenue approach to provide one left-turn lane, two through lanes, one bicycle lane, and one right-turn lane.	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	d) Reconfigure westbound 73rd Avenue approach to provide one left-turn lane, one through lane, one shared through/right lane, and one bicycle lane. e) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) f) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	
Impact Trans-49: Plan Buildout would degrade intersection operations from LOS D to LOS E and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) during the AM peak hour, and contribute to LOS E operations during the PM peak hour and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4 at the International Boulevard/Fruitvale Avenue intersection under 2035 conditions.	No feasible mitigation measures at International Boulevard/Fruitvale Avenue	**Significant and Unavoidable**
Impact Trans-50: Plan Buildout would contribute to LOS E operations at the International Boulevard/High Street (Intersection #35), increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) during the PM peak hour under 2035 conditions.	No feasible mitigation measures at International Boulevard/High Street	**Significant and Unavoidable**
Impact Trans-51: Plan Buildout would contribute to LOS E operations at the International Boulevard/Heavenscourt Boulevard (Intersection #38), increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds	No feasible mitigation measures at International Boulevard/Heavenscourt	**Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
(Significant Threshold #4) during the PM peak hour under 2035 conditions.		
Impact Trans-52: Plan Buildout would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) at the East 12th Street/Fruitvale Avenue (Intersection #49) during both weekday AM and PM peak hours which would operate at LOS F under 2035 conditions.	No feasible mitigation measures at East 12th Street/Fruitvale Avenue	**Significant and Unavoidable**
Impact Trans-53: Plan Buildout would degrade intersection operations from LOS D to LOS E and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) the San Leandro Street/East 10th Street/Fruitvale Avenue (Intersection #54) during the AM peak hour, and increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) during the weekday PM peak hour which would operate at LOS F under 2035 conditions.	No feasible mitigation measures at San Leandro Street/East 10th Street/Fruitvale Avenue	**Significant and Unavoidable**
Impact Trans-54: Plan Buildout would degrade intersection operations from LOS C during the AM peak hour and LOS D during the PM peak hour to LOS E during both AM and PM peak hours and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) San Leandro Street/High Street (Intersection #55) under 2035 conditions.	No feasible mitigation measures at San Leandro Street/High Street	**Significant and Unavoidable**
Impact Trans-55: Plan Buildout would degrade the San Leandro Street/66th Avenue	**Mitigation Measure Trans-55 (San Leandro Street/66th Avenue)**: Implement Mitigation Measure Trans-4	No further mitigation feasible

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
(Intersection #58) from LOS E to LOS F, increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) during the weekday AM peak hour which would operate at LOS E; the development would also increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) during the weekday PM peak hour which would operate at LOS F under 2035 Plus Specific Plan Buildout conditions.		**Significant and Unavoidable**
Impact Trans-56: Plan Buildout would degrade intersection operations from LOS C to LOS E and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) the San Leandro Street/Hegenberger Road Off-Ramp/75th Avenue (Intersection #54) during the AM peak hour, and increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) during the weekday PM peak hour which would operate at LOS F under 2035 conditions.	**Mitigation Measure Trans-56 (San Leandro Street/ Hegenberger Road Off-Ramp/75th Avenue intersection)**: Implement Mitigation Measure Trans-26	No further mitigation feasible **Significant and Unavoidable**
Impact Trans-57: Plan Buildout would degrade intersection operations from LOS D to LOS E and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) during the PM peak hour at the San Leandro Street/85th Avenue (Intersection #63) under 2035 conditions.	No feasible mitigation measures at San Leandro Street/85th Avenue	**Significant and Unavoidable**
Impact Trans-58: Plan Buildout would degrade	No feasible mitigation measures at San Leandro Street/98th Avenue	**Significant and**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
intersection operations from LOS D to LOS E and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) during the PM peak hour at the San Leandro Street/98th Avenue (Intersection #64) under 2035 conditions.		**Unavoidable**
Impact Trans-59: Plan Buildout would cause the increase in average delay of more than 5 seconds on the worst approach for unsignalized intersections that operates at LOS E or F under No Project conditions (Significant Threshold #5 in San Leandro) at the San Leandro Boulevard/West Broadmoor Boulevard/Apricot Street/Park Street (Intersection #66) under 2035 Plus Specific Plan Buildout conditions.	**Mitigation Measure Trans-59 (San Leandro Boulevard/West Broadmoor Boulevard/Apricot Street /Park Street)**: Implement Mitigation Measure Trans-27	Conservatively considered **Significant and Unavoidable** See Impact Trans-27
Impact Trans-60: Plan Buildout would cause the increase in average delay of more than 5 seconds on the worst approach for unsignalized intersections that operates at LOS E or F under No Project conditions (Significant Threshold #5 in San Leandro) at the San Leandro Boulevard/Best Avenue/Park Street (Intersection #66) under 2035 Plus Specific Plan Buildout conditions.	**Mitigation Measure Trans-60 (San Leandro Boulevard/Best Avenue/Park Street)**: Implement Mitigation Measure Trans-5	Conservatively considered **Significant and Unavoidable** See Impact Trans-5
Impact Trans-61: Plan Buildout would increase the total intersection average delay by four seconds or more (Oakland Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Oakland Significant Threshold #4) during the PM peak hour which would operate at LOS E under 2035 Plus Specific Plan Buildout conditions at the San Leandro Boulevard/Davis Street (Intersection #67).	**Mitigation Measure Trans-61 (San Leandro Boulevard/Davis Street)**: Implement Mitigation Measure Trans-29	Conservatively considered **Significant and Unavoidable** See Impact Trans-29

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Impact Trans-62: Plan Buildout would cause the San Leandro Boulevard/Marina Boulevard (intersection #69) to degrade from LOS D to LOS E (Significant Threshold #1 in San Leandro) during the PM peak hour under 2035 Plus Specific Plan Buildout conditions. In addition, Plan Buildout would increase the total intersection average delay by four seconds or more (Oakland Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Oakland Significant Threshold #4) during the PM peak hour.	**Mitigation Measure Trans-62 (San Leandro Boulevard/Marina Boulevard)**: Implement Mitigation Measure Trans-6	Conservatively considered **Significant and Unavoidable** See Impact Trans-6
Impact Trans-63: Plan Buildout would degrade the intersection from LOS E to LOS F, increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4) at the Coliseum Way/I-880 Northbound Ramps/42nd Avenue (Intersection #76) during the weekday AM peak hour under 2035 Plus Specific Plan Buildout conditions.	No feasible mitigation measures at Coliseum Way/I-880 Northbound Ramps/42nd Avenue	**Significant and Unavoidable**
Impact Trans-64: Plan Buildout would contribute to LOS E operations at the Coliseum Way/High Street (Intersection #78) during the AM peak hour and increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4); the development would also increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Significant Threshold #5) during	**Mitigation Measure Trans-64 (Coliseum Way/High Street)**: Implement Mitigation Measure Trans-31	Conservatively considered **Significant and Unavoidable** See Impact Trans-31

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
the weekday PM peak hour which would operate at LOS F under 2035 conditions.		
Impact Trans-65: Plan Buildout would degrade the intersection from LOS D to LOS E or LOS F, and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) at the Oakport Street/I-880 Southbound Ramps/High Street (Intersection #79) during both weekday AM and PM peak hours under 2035 Plus Specific Plan Buildout conditions.	**Mitigation Measure Trans-65)Oakport Street/I-880 Southbound Ramps/High Street)**: Implement Mitigation Measure Trans-32	Conservatively considered **Significant and Unavoidable** See Impact Trans-32
Impact Trans-66: Plan Buildout would degrade intersection operations from LOS B to LOS F and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) during the PM peak hour at the Oakport Street/Zhone Way (Intersection #82) under 2035 conditions.	**Mitigation Measure Trans-66 (Oakport Street/Zhone Way)**: Implement the following measures at the Oakport Street/Zhone Way intersection: a) Provide a right-turn lane on the northbound Oakport Street approach. b) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) c) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	Less than Significant
Impact Trans-67: Plan Buildout would degrade intersection operations from LOS D to LOS F and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) during the AM peak hour at the Hegenberger Road/I-880 Southbound Off-Ramp (Intersection #84) under 2035 conditions.	**Mitigation Measure Trans-67 (Hegenberger Road/I-880 Southbound Ramps)**: Implement the following measures at the Hegenberger Road/I-880 Southbound Ramps intersection: a) Restripe the southbound I-880 Off-Ramp approach from two exclusive right turn lanes and two exclusive left-turn lanes to two exclusive right turn lanes, one shared left/right-turn lane, and one exclusive left-turn lane. b) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) c) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by Caltrans and the City cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Impact Trans-68: Plan Buildout would contribute to LOS F operations at the Fernside Boulevard/Blanding Avenue/Tilden Way (Intersection #91) and increase total intersection volume by three percent or more (City of Alameda Significant Threshold) during the AM peak hour under 2035 conditions. In addition, Plan Buildout would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Oakland Significant Threshold #5) during both weekday AM and PM peak hours which would operate at LOS F under 2035 conditions.	**Mitigation Measure Trans-68 (Fernside Boulevard/ Blanding Avenue/Tilden Way)**: Implement the following measures at the Fernside Boulevard/ Blanding Avenue/Tilden Way intersection: a) Add a left-turn on the northbound Fernside Boulevard approach so that the approach would provide one left-turn lane, one through lane and one right-turn lane b) Add a left turn lane to provide on the southbound Blanding Avenue approach so that the approach would provide one left-turn lane, one through lane and one right-turn lane c) Update traffic signal equipment to convert northbound/southbound left-turn operations from split phasing to protected phasing. d) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) e) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by the City of Alameda and the City of Oakland cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
Impact Trans-69: Plan Buildout would degrade operations from LOS E to LOS F at the Fernside Boulevard/ High Street/Gibbons Drive (Intersection #92) and increase total intersection volume by three percent or more (City of Alameda Significant Threshold) during the PM peak hour under 2035 conditions. In addition, Plan Buildout would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Oakland Significant Threshold #5) during the weekday AM peak hour which would operate at LOS F under 2035 conditions, and increase the total intersection average delay by four seconds or more (Oakland Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Oakland Significant Threshold #4) during the PM peak hour.	**Mitigation Measure Trans-69 (Fernside Boulevard/High Street/Gibbons Drive)**: Implement Mitigation Measure Trans-8	Conservatively considered **Significant and Unavoidable** See Impact Trans-8
Impact Trans-70: Plan Buildout would increase	**Mitigation Measure Trans-70 (Fernside Boulevard/Otis Drive)**: Implement Mitigation Measure	Conservatively considered

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
the total intersection average delay by four seconds or more (Oakland Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Oakland Significant Threshold #4) during the AM peak hour which would operate at LOS E under 2035 conditions at the Fernside Boulevard/Otis Drive (Intersection #98).	Trans-9	**Significant and Unavoidable** See Impact Trans-9
Impact Trans-71: Plan Buildout would contribute to LOS E operations at the Hegenberger Road/Hegenberger Court/Edgewater Drive (Intersection #100) during the AM peak hour and increase the total intersection average delay by four seconds or more (Significant Threshold #3), and increase the average delay for a critical movement by six or more seconds (Significant Threshold #4); the development would also degrade intersection operations from LOS D to LOS F and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) during the PM peak hour under 2035 conditions.	**Mitigation Measure Trans-71 (Hegenberger Road/ Hegenberger Court/Edgewater Drive)**: Implement the following measures at the Hegenberger Road/ Hegenberger Court/Edgewater Drive intersection: a) Add a right-turn lane on the southbound Edgewater Drive approach b) Restripe the northbound Hegenberger Court approach to provide one left-turn lane, and one shared through/right-turn lane c) Convert traffic operations on the north/south approaches from split phasing to protected phasing. d) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) e) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	No further mitigation feasible **Significant and Unavoidable**
Impact Trans-72: Plan Buildout would degrade intersection operations from LOS D to LOS E and increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) during the PM peak hour at the Airport Access Road/Pardee Drive/Hegenberger Road (Intersection #101) under 2035 conditions.	**Mitigation Measure Trans-72 (Airport Access Road/Pardee Drive/Hegenberger Road)**: Implement the following measures at the Airport Access Road/Pardee Drive/Hegenberger Road intersection: a) Convert left-turn operations on the north/south approaches from permitted phasing to protected phasing. b) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) c) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	Less than Significant
Impact Trans-73: Plan Buildout would degrade intersection operations from LOS D to LOSE and	No feasible mitigation measures at Airport Access Road/98th Avenue	**Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
increase total intersection average vehicle delay by four or more seconds (Significant Threshold #1) during the PM peak hour at the Airport Access Road/98th Avenue (Intersection #102) under 2035 conditions.		
Impact Trans-74: Plan Buildout would increase the total intersection V/C ratio by 0.03 or more and increase the V/C ratio for a critical movement by 0.05 or more (Oakland Significant Threshold #5) during the weekday AM peak hour which would operate at LOS F under 2035 conditions at the Island Drive/Otis Drive/Doolittle Drive (Intersection #103).	**Mitigation Measure Trans-74 (Island Drive/Otis Drive/Doolittle Drive)**: Implement the following measures at the Island Drive/Otis Drive/Doolittle Drive intersection: a) Add a left-turn lane to the westbound Doolittle Drive approach so the approach would provide two left-turn lanes and two through lanes. b) Optimize signal timing (i.e., changing the amount of green time assigned to each lane of traffic approaching the intersection) c) Coordinate the signal timing changes at this intersection with the adjacent intersections that are in the same signal coordination group.	City of Oakland, as lead agency, does not have jurisdiction at this intersection. The mitigation would need to be approved and implemented by the City of Alameda and the City of Oakland cannot ensure its implementation. Conservatively considered **Significant and Unavoidable**
Freeway and Regional Roadway Impacts: **Impact Trans-75:** The proposed Coliseum District development would degrade from LOS E or better to LOS F (Significant Threshold #7), or increase the freeway volume by three percent more, for the following freeway segments operating at LOS F (Significant Threshold #8): 1 Weave section on northbound I-880 from 98th Avenue to Hegenberger Road during the PM peak hour under 2035 conditions. 2 Diverge section on southbound I-880 at 42nd Avenue/High Street Off-Ramp during the PM peak hour under 2035 conditions. 3 Merge section on southbound I-880 at eastbound 98th Avenue On-Ramp during	No feasible mitigation measures are available	**Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
the PM peak hour under 2035 conditions. 4 Diverge section on southbound I-880 at Davis Street Off-Ramp during the PM peak hour under 2035 conditions.		
Impact Trans-76: The proposed Coliseum District development would degrade from LOS E or better to LOS F (Significant Threshold #7) or increase the V/C ratio by 0.03 or more for segments operating at LOS F (Significant Threshold #8) on the following CMP or MTS roadway segments: 1 Northbound I-880 from Marina Boulevard to Hegenberger Road and from High Street to 29th Avenue in 2020 and from Marina Boulevard to 66th Avenue and from High Street to 29th Avenue in 2035. 2 Southbound I-880 from 29th Avenue to 66th Avenue in 2020, and from 29th Avenue to High Street in 2035. 3 Eastbound Hegenberger Road from I-880 Southbound Off-Ramp to Coliseum Way/ Edes Avenue in 2020, and from I-880 Southbound Off-Ramp to Coliseum Way/Edes Avenue and from San Leandro Street to International Boulevard in 2035. 4 Westbound Hegenberger Road from I-880 Southbound Off-Ramp to Doolittle Drive in 2035. 5 Northbound San Leandro Street from 73rd Avenue to Seminary Avenue and from 50th Avenue to High Street in 2020, and from 81st Avenue to High Street in 2035. 6 Southbound San Leandro Street from	**Mitigation Measure Trans-76 (Regional Roadways)**: Implement Mitigation Measures Trans-4, Trans-26, Trans-67, Trans-71, and Trans-72.	No further mitigation feasible **Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Seminary Avenue to 73rd Avenue in 2020 and 2035. 7 Northbound International Boulevard from 73rd Avenue to Heavenscourt Boulevard in 2020 and 2035. 8 Southbound International Boulevard from 42nd Avenue to High Street and from 66th Avenue to Heavenscourt Boulevard in 2020, and from 23rd Avenue to Fruitvale Avenue in 2035. 9 Eastbound 98th Avenue between Edes Avenue and San Leandro Street in 2035.		
Impact Trans-77: Development under Plan Buildout would degrade from LOS E or better to LOS F (Significant Threshold #7), or increase the freeway volume by three percent more, for freeway segments operating at LOS F (Significant Threshold #8) on the following freeway segments: 1. Weave section on northbound I-880 from 98th Avenue to Hegenberger Road during both AM and PM peak hours under 2035 conditions. 2. Weave section on northbound I-880 from Hegenberger Road to 66th Avenue during the PM peak hour under 2035 conditions. 3. Weave section on northbound I-880 from 66th Avenue to High Street during the PM peak hour under 2035 conditions. 4. Basic section on southbound I-880 north of High Street during the AM peak hour under 2035 conditions.	No feasible mitigation measures are available	**Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
5. Diverge section on southbound I-880 at 42nd Avenue/High Street Off-Ramp during both AM and PM peak hour under 2035 conditions. 6. Merge section on southbound I-880 at High Street/Oakport Avenue On-Ramp during both AM and PM peak hours under 2035 conditions. 7. Diverge section on southbound I-880 at 66th Avenue Off-Ramp during both AM and PM peak hour under 2035 conditions. 8 Weave section on southbound I-880 from Hegenberger Road to 98th Avenue during both AM and PM peak hours under 2035 conditions. 9. Merge section on southbound I-880 at eastbound 98th Avenue On-Ramp during the PM peak hour under 2035 conditions. 10. Basic section on southbound I-880 between 98th Avenue and Davis Street during the PM peak hour under 2035 conditions. 11. Diverge section on southbound I-880 at Davis Street Off-Ramp during the PM peak hour under 2035 conditions.		
Impact Trans-78: The development under the Specific Plan would degrade from LOS E or better to LOS F (Significant Threshold #7) or increase the V/C ratio by 0.03 or more for segments operating at LOS F (Significant Threshold #8) on the following CMP or MTS roadway segments: 1. Eastbound I-580 between Keller Avenue and	**Mitigation Measure Trans-76 (Regional Roadways)**: Implement Mitigation Measures Trans-4, Trans-26, Trans-67, Trans 48, Trans-71, and Trans-72.	No further mitigation feasible **Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Golf Links Road in 2020. 2. Northbound I-880 from Marina Boulevard to 29th Avenue in 2020 and 2035. 3. Southbound I-880 from 29th Avenue to Hegenberger Road and from 98th Avenue to Davis Street in 2020 and 2035. 4. Northbound Doolittle Drive (SR 61) from Davis Street to Harbor Bay Parkway in 2020 and 2035. 5. Southbound Doolittle Drive (SR 61) from Airport Drive to Davis Street in 2020 and from Hegenberger Road to Davis Street in 2035. 6. Eastbound Hegenberger Road from Airport Access Drive to Coliseum Way/Edes Avenue in 2020, and from Airport Access Drive to Coliseum Way/Edes Avenue and from San Leandro Street to Bancroft Avenue in 2035. 7. Westbound Hegenberger Road from Edgewater Drive to Airport Access Drive in 2020, and from I-880 Southbound Off-Ramp to Doolittle Drive in 2035. 8. Northbound San Leandro Street from 81st Avenue to Fruitvale Avenue in 2020, and from 85th Avenue to Fruitvale Avenue in 2035. 9. Southbound San Leandro Street from Fruitvale Avenue to 73rd Avenue in 2020 and 2035. 10. Northbound International Boulevard from 73rd Avenue to Heavenscourt Boulevard and from Fruitvale Avenue to 23rd Avenue in 2020, and from 73rd Avenue to		

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Heavenscourt Boulevard, Seminary Avenue to High Street, and from 42nd Avenue to Fruitvale Avenue in 2035. 11. Southbound International Boulevard from 42nd Avenue to 73rd Avenue and from Davis Street to Estudillo Avenue in 2020, and from 23rd Avenue to Fruitvale Avenue, from High Street to 73rd Avenue, and from Davis Street to Estudillo Avenue, in 2035. 12. Eastbound 98th Avenue between Edes Avenue and San Leandro Street in 2035. 13. Westbound 98th Avenue between I-880 Northbound Ramps and Airport Access Drive in 2035.		
Transit Impacts: **Impact Trans-79**: The proposed Coliseum District development would not substantially increase travel times for AC Transit buses	None required	Less than Significant
Special Events Impact **Impact Trans-80**: Special events at the new sports venues may result in significant impacts on event days	SCA Trans-3: Parking and Transportation Demand Management **Mitigation Measure Trans-81**: Implement an Event Traffic Management Plan through the TPMA to reduce the automobile trips generated by special events and better manage the traffic traveling to and from the site. The Event Traffic Management Plan shall consider the following strategies: a) Develop plans for roadway closures and manual control of traffic by police officers during peak congestion periods before and after the games. b) Develop way-finding plan with changeable message signs on freeways and surrounding major streets to direct patrons to available parking facilities. c) Collaborate with transit providers in the area (AC Transit, BART, Amtrak) to expand transit service for special events. d) Develop Promotional material for special events that encourage the use of transit, carpooling	The particular strategies and the implementation details are not known at this time. Conservatively considered **Significant and Unavoidable**

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	and other non-automobile travel modes. e) Consistent with SCA Trans-3, develop a Parking and Transportation Demand Management Program to encourage employees and spectators for special events to use non-automobile travel modes and reduce the automobile trips and parking demand of special events. f) Bundle parking pricing into the ticket price to maximize efficiencies at parking entrances. g) Coordinate parking management within the Project Area to maximize the use of available parking spaces during special events. h) Operate buses between the Project Area and major transit destinations such as West Oakland BART or East Bay BRT during weekday evening coliseum events and consider them when events overlap at the ballpark and arena	
Impact Trans-81: Development under the proposed Project would not directly or indirectly cause or expose roadway users (e.g., motorists, pedestrians, bus riders, bicyclists) to a permanent and substantial transportation hazard due to a new or existing physical design feature or incompatible uses (Significance Threshold #10).	SCA Trans-1, Improvements in the Public Right-of-Way (General), and SCA Trans-2, Improvements in the Public Right-of-Way (Specific) **Mitigation Measure Trans-81**: Reconfigure E Street so that it curves along the alignment of F Street intersecting Loop Road opposite the access to the collector-distributor road. Alternatively, E Street could be redirected at F Street through the surface parking and connect to Hegenberger Road opposite Baldwin Street.	Less than Significant
Impact Trans-82: Development under the proposed Project would not directly or indirectly result in a permanent substantial decrease in pedestrian safety (Significance Threshold #11).	None needed	Less than Significant
Impact Trans-83: Development under the proposed Project would not directly or indirectly result in a permanent substantial decrease in bicycle safety (Significance Threshold #12).	None needed	Less than Significant
Impact Trans-84: Development under the proposed Project would not directly or indirectly result in a permanent substantial decrease in bus rider safety (Significance Threshold #13).	None needed	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Impact Trans-85: Development under the proposed Project would generate substantial multi-modal traffic traveling across at-grade railroad crossings that cause or expose roadway users (e.g., motorists, pedestrians, bus riders, bicyclists) to a permanent and substantial transportation hazard (Significance Threshold #14).	SCA Trans-5: Railroad Crossings **Mitigation Measure Trans-86:** Implement the following specific improvements: a) 66th Avenue (west): bring sidewalks into ADA compliance including detectable surface, smooth path of travel, and wider sidewalks. Consider replacing median curb and delineators with a raised median (requires road diet from four to three lanes between Coliseum Way and San Leandro Street. b) 66th Avenue/San Leandro Street: Add W10-1 signs (railroad crossing warning sign) to 66th Avenue approaching the railroad crossing and W10-2 signs (parallel railroad crossing at an intersection warning sign) on San Leandro Street. Consider vertical delineation on centerline of 66th Avenue approaching the railroad crossing. c) 69th Avenue/San Leandro Street: Add W10-2 signs on San Leandro Street and consider vertical delineation on centerline of 69th Avenue approaching the railroad crossing. d) 75th Avenue/San Leandro Street /Snell Street: Add W10-1 signs to 75th Avenue and add W10-2 signs on San Leandro Street and Snell Street. Bring sidewalks into ADA compliance including detectable surface, smooth path of travel, and curb ramps and install a sidewalk on the south side of 75th Avenue. Consider vertical delineators on centerline of 75th Avenue approaching the railroad crossing. Consider removing the pork-chop island and bringing southbound right-turns through the intersection and relocate the crossing arm to preserve sight distance for westbound traffic. e) Any proposed improvements must be coordinated with California Public Utility Commission (CPUC) and affected railroads and all necessary permits/approvals obtained, including a GO 88-B Request (Authorization to Alter Highway Rail Crossings).	Installation of safety mechanisms may not be feasible and the consent or approval of the CPUC or Railroad is required. Conservatively considered **Significant and Unavoidable**
Impact Trans-86: Development under the proposed Project would not fundamentally conflict with adopted City policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities adopted for the purpose of avoiding or mitigating an environmental effect and actually result in a physical change in the environment.	None needed	Less than Significant
Impact Trans-87: Development under the proposed Project would result in a substantial,	SCA Trans-4: Construction Traffic Management Plan	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
though temporary adverse effect on the circulation system during construction of the Project. (Significance Threshold #16).	To further implement SCA Trans-4, the Construction Traffic Management Plan developed for a project shall also include the following: a) A set of comprehensive traffic control measures for motor vehicles, transit, bicycle, and pedestrian access and circulation during each phase of construction. b) A construction period parking management plan to ensure that parking demands for construction workers, site employees, and customers are accommodated during each phase of construction.	
Impact Trans-88: Development under the proposed Project could result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	See Mitigation Measures Land-8A and Land-8B	Less than Significant
Utilities and Public Services		
Impact Util-1A: The water demand generated by new development within the Coliseum Site will increase the average daily water demand over existing levels, but would not exceed water supplies currently available from existing entitlements and resources. **Impact Util-1B**: The water demand generated by new development pursuant to Plan Buildout (including the Coliseum District) will increase the average daily water demand over existing levels, but will not exceed water supplies projected to be available from existing entitlements and resources.	SCA Util-3: Compliance with the Green Building Ordinance, OMC Chapter 18.02, SCA Util-4: Compliance with the Green Building Ordinance, OMC Chapter 18.02, for Building and Landscape Projects Using the StopWaste.Org Small Commercial or Bay Friendly Basic Landscape Checklist All construction activity on-site, including construction of new water distribution lines, would be required to comply with City of Oakland standard conditions of approval regarding construction noise (SCA Noise-1 and SCA Noise-2), air quality and dust suppression (SCA Air-1 and SCA Air-2), erosion control (SCA Geo-1) and temporary construction traffic controls (SCA Trans-1)	Less than Significant
Impact Util-2A: New development within the Coliseum Site would not exceed the wastewater treatment requirements of the San Francisco Regional Water Quality Control Board or result in a determination that new or expanded	SCA Util-2: Stormwater and Sewer All construction activity on-site, including construction of new sewer laterals, would be required to comply with City of Oakland Standard Conditions of Approval regarding construction noise (SCA Noise-1 and SCA Noise-2), air quality and dust suppression (SCA Air-1 and SCA Air-2), erosion control (SCA Geo-1) and temporary construction traffic controls (SCA Trans-1)	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
wastewater treatment facilities would be required. **Impact Util-2B**: New development pursuant to Plan Buildout, including the Coliseum District, would not exceed the wastewater treatment requirements of the San Francisco Regional Water Quality Control Board or result in a determination that new or expanded wastewater treatment facilities would be required.		
Impact Util-3A: New development at the Coliseum Site would require construction of new stormwater drainage facilities and the potential expansion of existing facilities, the construction of which could cause significant environmental effects. **Impact Util-3B**: New development pursuant to Plan Buildout would require construction of new stormwater drainage facilities and the potential expansion of existing facilities, the construction of which could cause significant environmental effects.	SCA Hydro-6: Post-Construction Stormwater Pollution Prevention Plans SCA Util-2: Stormwater and Sewer As with all construction activity on-site, construction of new storm drainage improvements would be required to comply with City of Oakland Standard Conditions of Approval regarding construction noise (SCA Noise-1 and SCA Noise-2), air quality and dust suppression (SCA Air-1 and SCA Air-2), erosion control (SCA Geo-1) and temporary construction traffic controls (SCA Trans-1)	Less than Significant
Impact Util-4: Future development pursuant to the Specific Plan (at the Coliseum Site and pursuant to Plan Buildout) would not violate applicable federal, state, and local statutes or regulations related to solid waste; nor would it generate solid waste that would exceed the permitted capacity of the landfills serving the area.	SCA Util-1: Waste Reduction and Recycling	Less than Significant
Impact Util-5: New development resulting from implementation of the specific Plan (both at the Coliseum Site and pursuant to Plan Buildout)	SCA Util-3: Compliance with the Green Building Ordinance, OMC Chapter 18.02, SCA Util-4: Compliance with the Green Building Ordinance, OMC Chapter 18.02, for Building and Landscape Projects Using the StopWaste.Org Small Commercial or Bay Friendly Basic Landscape	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures and Residual Impacts: Coliseum Area Specific Plan

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
would not violate applicable federal, state and local statutes and regulations relating to energy standards; nor result in a determination by the energy provider which serves or may serve the area that it does not have adequate capacity to serve projected demand in addition to the providers' existing commitments and require or result in construction of new energy facilities or expansion of existing facilities.	Checklist	

3

Project Description

Introduction

The proposed Coliseum Area Specific Plan (i.e., the proposed Project) envisions the transformation of the Coliseum District and the surrounding area into a new sports and entertainment district, with a new residential neighborhood, and space for new science and technology businesses in Oakland. The Project provides a flexible strategy for redevelopment and infill development of Oakland's professional sports complexes and their surrounding land uses. The proposed Project establishes a land use and development framework, identifies transportation and infrastructure improvements, and recommends implementation strategies. While the proposed Project presents one vision for how the Coliseum Area might ultimately be developed (the Master Plan), it also provides flexibility for other potential land use outcomes.

This chapter of the EIR describes the proposed Project as addressed in this EIR. As required by CEQA Guidelines, this Project Description is presented in sufficient detail to enable evaluation of potential environmental impacts. In accordance with Section 15124 of the CEQA Guidelines, this chapter describes:

- the location, characteristics and boundaries of the Project Area;
- basic objectives and underlying purpose of the Project;
- an overview of the characteristics of the Project, including its vision, development framework, goals and policies, development standards and guidelines, and implementation program;
- development assumptions and timeframe used throughout this EIR; and
- intended uses of this EIR, including a list of those agencies that are expected to use this EIR in their decision-making, approvals required to adopt the Specific Plan, and related environmental review and consultation requirements.

Project Location, Characteristics and Boundaries

Location

The Project Area is located in Alameda County between Downtown Oakland and Oakland International Airport, proximate to the cities of Alameda and San Leandro, and easily reachable by train and car by millions of people from all over the Bay Area, including San Francisco, Daly City, Berkeley, Richmond, Fremont, San Jose, Pleasanton, and Walnut Creek. See the Regional Context Map, **Figure 3-1**.

The Project Area is extensively served by regional transit, including the Coliseum BART station, Capitol Corridor Amtrak station, AC transit bus service and the BART Oakland Airport Connector, as well as two I-880 freeway interchanges.

Figure 3-1
Regional Context Map

The Coliseum Area Specific Plan's Planning Area (the Project Area) is located in East Oakland and covers approximately 800 acres bounded by 66th Avenue to the north, San Leandro Street on the east, Hegenberger Road on the south, and San Leandro Bay and the Oakland International Airport to the west, as shown in **Figure 3-2**. The Project Area is divided into five Sub-Areas, as also shown on Figure 3-2. These Project Sub-Areas include:

- the Oakland-Alameda County Coliseum complex (the Coliseum stadium and the neighboring Arena), associated surface parking lots, other City-owned land, additional private properties to the east along both sides of San Leandro Street, and the existing Coliseum BART Station and associated parking lot (Sub-Area A),
- the Oakland Airport Business Park north of Hegenberger Road (Sub-Areas B, C and D), and
- other adjacent properties to the north of 66th Avenue(Sub-Area E).

Project Area Characteristics and Boundaries

Site Context

Surrounding the Project Area is a mix of land uses (see **Figure 3-3**):

- The north side beyond 66th Avenue and East Creek Slough is made up of large scale industrial uses on both sides on I-880.
- The east side is bounded by largely residential uses to the north of Hegenberger Expressway, industrial uses south of the Hegenberger/San Leandro intersection and Enterprise Way (including heavy industrial uses such as a foundry), hotels between Enterprise Way at I-880, and a mix of hotels, business parks, and light industrial to the west of I-880.
- To the south is the Oakland International Airport and related uses. The southernmost portion of the Planning Area is located on a small peninsula, the tip of which is not included in the Specific Plan—this excluded area is a section of the Martin Luther King Jr. Regional Shoreline.
- The west side is bounded by San Leandro Bay, which separates the Planning Area from the Airport and the City of Alameda (Bay Farm Island and Alameda Island). San Leandro Bay connects to San Francisco Bay to the west and the Oakland Estuary and the Port of Oakland to the north.

Existing Land Use

The Project Area consists of approximately 800 acres of land currently containing a mix of sports-related, employment-generating and open space land uses. The Project Area currently includes two major sports venues – the Coliseum (a joint football/baseball stadium used by the Oakland Raiders professional football franchise and the Oakland A's professional baseball franchise) - and the Arena (used by the Golden State Warriors professional basketball franchise and for other special events), together with approximately 5.7 million square feet of non-residential (primarily industrial and light industrial) uses. These uses include approximately 1 million square feet of office uses, 1.7 million square feet of light industrial and logistics uses, 450,000 square feet of hotel, 470,000 square feet of auto-related, retail and restaurant uses, and 150,000 square feet of public and institutional uses. The Project Area does not have any existing residential uses; it does include small portions of parkland along the shoreline. As of 2010, the Project Area had approximately 11,200 jobs, slightly less than its 11,500 jobs in 2000.

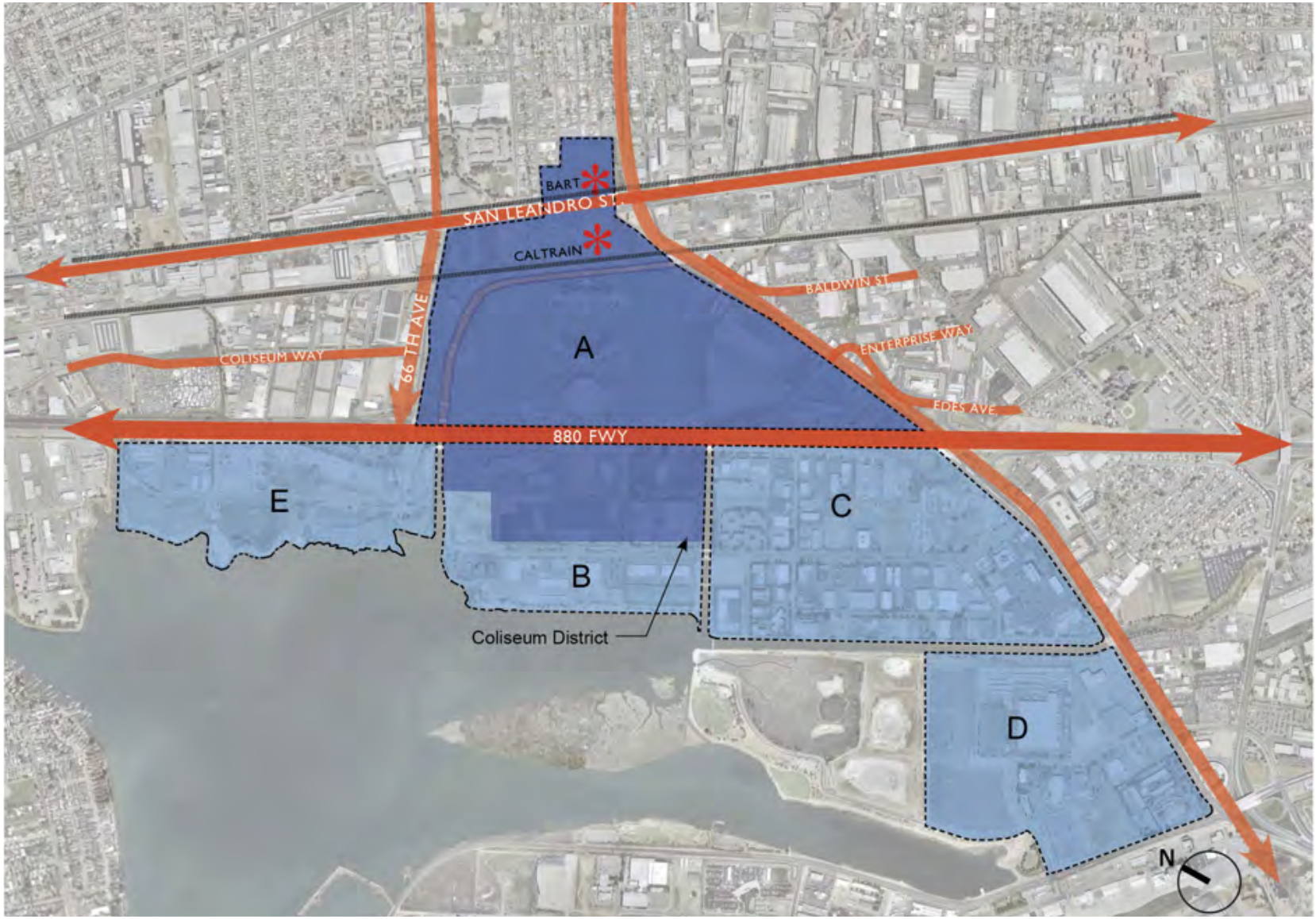


Figure 3-2
Coliseum Area Specific Plan - Planning Area and Sub-Areas

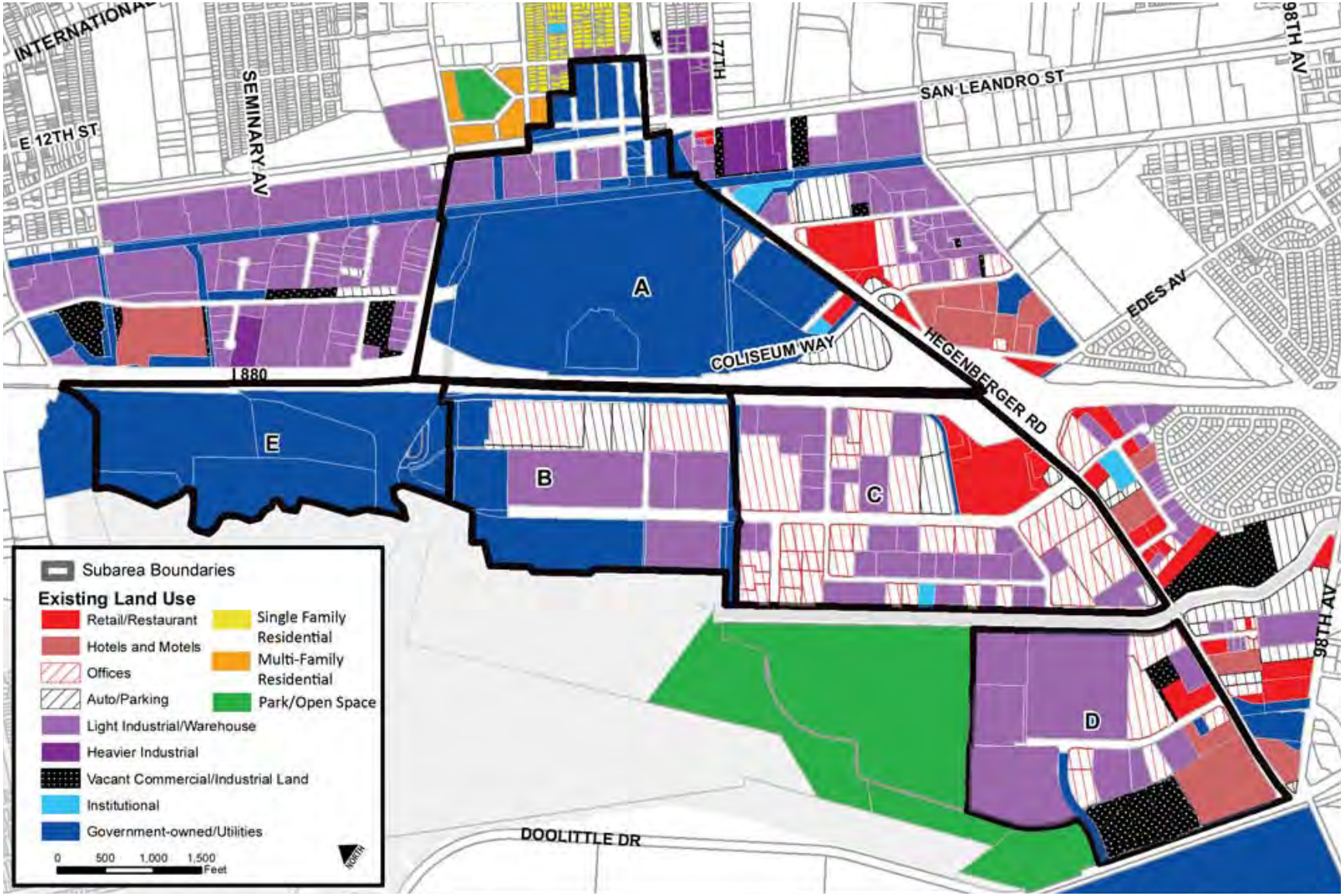


Figure 3-3
Existing Land Uses Within and Adjacent to the Planning Area

Source: City of Oakland

The locations of existing land uses within the Project Area are also shown on Figure 3-3. The existing development in each sub-area and the overall Project Area is summarized in **Table 3-1.**

Sub-Area A

The approximately 240-acre Sub-Area A consists primarily of the 112-acre Coliseum complex. The Coliseum complex consists of the Coliseum Stadium and the neighboring Arena, as well as their associated surface parking lots, which are all jointly owned by the City of Oakland and Alameda County, governed by the Oakland-Alameda County Coliseum Authority (known as the "JPA") and managed by AEG. AEG is a sports and entertainment management and producer. Sub-Area A also includes other City-owned land, and additional private properties to the east along both sides of San Leandro Street, and the existing Coliseum BART Station and associated parking lot. In addition to the existing Arena and Coliseum sports venues, Sub-Area A currently contains approximately 350,000 square feet of primarily light industrial, office and government/utility building space.

The Coliseum is an approximately 1.4 million square foot stadium that seats up to 63,000 attendees for football games[1] and 35,070 for baseball games[2], and hosts approximately 118 events per year (8 regular season and 2 pre-season football games, 81 regular season and 3 pre-season baseball games not including playoffs, and other special events). The Raiders and the A's are the only remaining NFL/MLB teams still sharing a stadium on a full-time basis.

The Arena is a 615,000 square foot, round-shaped facility that seats 19,600 attendees for basketball games, and fewer for other events such as concerts. The Arena hosts approximately 105 events per year, including 41 regular season and 4 pre-season professional basketball games and numerous concerts and events. Virtually all of these events occur outside of peak traffic times during weekends, evenings and mid-day.

These facilities are served by an approximately 10,000-space parking lot. The BART and Amtrak stations also each have surface parking lots. The BART Station provides about 950 parking spaces in a surface lot located on the east side of the BART station, and the Amtrak Station provides a 35-space surface parking lot.

Sub-Area B

This Sub-Area is approximately 125 acres in size and contains the northerly portion of the Oakland Airport Business Park, northerly of Elmhurst Slough and south of Damon Slough. Currently this Sub-Area contains approximately 1.45 million square feet of primarily light industrial, office, and science and technology space, as well as the City of Oakland Public Works Department's corporation yard.

Sub-Area C

This Sub-Area is approximately 190 acres in size and contains the southerly portion of the Oakland Airport Business Park, southerly of Elmhurst Slough and north of Hegenberger Road. Currently this Sub-

[1] For the 2013 NFL season, the capacity was temporarily reduced to 53,200 seats

[2] In 2005, the Athletics announced that seats in the Coliseum's third deck and in the Mount Davis addition would not be sold for the 2006 season, but would instead be closed or covered with a tarp. That effectively reduced capacity to 34,077, making the Coliseum the smallest stadium in MLB. As of 2008, sections 316–318 are the only open third-deck sections for A's games, bringing the total capacity to 35,067.

Area contains 2.25 million square feet of building space, largely made up of an inter-related mix of science and technology, light industrial and office uses, as well as the existing Wal-Mart store and adjacent retail shopping center off Hegenberger Road at Edgewater Drive.

Sub-Area D

This Sub-Area is approximately 135 acres in size and includes the most westerly portion the Oakland Airport Business Park nearest to the Oakland International Airport. This Sub-Area contains approximately 1.66 million square feet of building space including large logistics and distribution businesses and activities, as well as light industrial, hotel, and retail and restaurant uses along Hegenberger Road.

Sub-Area E

This Sub-Area is approximately 105 acres in size, and consists of largely undeveloped open space north of the Oakland Airport Business Park, on the westerly or water-side of I-880, between East Creek Slough and Damon Slough. A little more than half of this Sub-Area is owned and used by the East Bay Municipal Utility District, with an operating water treatment facility, open storage and a corporation yard. The City of Oakland owns the remaining parcels in this Sub-Area, including a large site used primarily as a soccer facility.

Table 3-1: Existing Building Space by Land Use Type (building square feet)

Land Use Type:	Sub-Area A	Sub-Area B	Sub-Area C	Sub-Area D	Sub-Area E	Total
Sports Venues						
Coliseum						
- Football	63,000 seats					
-Baseball	35,070 seats					
Arena (Basketball)	19,600 seats					
Science and Technology		397,080				397,080
Science and Tech./Light Ind./Office Mix			1,556,800			1,556,800
Office	82,500	297,000	346,900	256,700		983,100
Light Ind.	147,600	676,800	21,300	26,300		872,000
Logistics/Distribution				855,500		855,500
Hotel				457,000		457,000
Auto Related	30,000	59,000	141,000	39,500		269,500
Retail/Restaurant	6,950		179,200	17,800		203,950
Government/Utility	75,300	15,800		4,000	32,500	127,600
Institutional	7,750		8,000			15,750
Total	**350,100** plus Sports Venues	1,445,680	2,253,200	1,656,800	32,500	**5,738,280** plus Sports Venues

Traffic and Transit

The Project Area is currently served by multiple forms of transit and both local and regional roadways (see also the Transportation Chapter of this EIR).

- BART provides train service at its Coliseum/Oakland Airport station, which is served by three of the five BART lines. Direct service is available to almost the entire BART system from this station, including Downtown Oakland, San Francisco, Millbrae, Berkeley, Richmond, Fremont, and Dublin/Pleasanton. In the future, train service will also be extended into San Jose at the Berryessa Station (passenger service is scheduled by 2018).
- Amtrak's Capitol Corridor train service stops at the Coliseum station, adjacent to the BART station, connecting to Santa Clara, San Jose, and Sacramento.
- AC Transit currently runs five bus lines through the Planning Area, all of which make stops at the BART station.
- Interstate 880 passes through the Planning Area and includes on/off ramps at Zhone Way/66th Avenue and Hegenberger Road.
- Notable local streets that access the Planning Area include 66th Avenue, Hegenberger Road/Expressway, and San Leandro Street.

In addition, Sub-Area A is bisected by rail lines owned by Union Pacific Railroad (UPRR), which have an at-grade crossing at 66th Avenue. Amtrak service and freight trains use the UPRR tracks.

Utilities and Infrastructure

The Project Area includes several notable utility easements that may affect site development. High tension electrical power lines, owned by PG&E pass through Sub-Area A, creating a visual impediment and a potential development barrier. Sub-Area A also has two permanent East Bay Municipal Utility District (EBMUD) easements, within which are the EBMUD South Interceptor sewer conveyance line.

EDMUD owns and operates a water treatment facility in the Planning Area, in Sub-Area E, along with open storage and a corporation yard, on a site of approximately 67 acres.

Waterways, Habitat, and Open Space

Various creeks that originate in the Oakland Hills and flow to the Bay ultimately combine into three primary channels within the Project Area (see also the Biology chapter of this EIR). On the north, Peralta, Courtland, and Seminary Creeks combine into East Creek Slough which enters the Bay at the north end of Sub-Area E. Lion and Arroyo Viejo Creeks flow into Damon Slough, which enters the Bay between Sub-Areas B and E, and Elmhurst Creek passes through the Project Area dividing Sub-Areas C and D as it empties into San Leandro Bay at Arrowhead Marsh.

The Project Area also includes the Edgewater Seasonal Wetland, a restored wetlands implemented as a mitigation project by the Oakland Airport, provides a large area of high-quality habitat for marsh species including the federally endangered California clapper rail and the salt-marsh harvest mouse. In 2012, the Port of Oakland transferred this land to the East Bay Regional Park District (EBRPD) for long-term management. The Alameda County Flood Control District holds a flood-control easement over the adjacent Damon Slough and embankment portions of the site.

Small segments of the Martin Luther King Jr. Regional Shoreline Park, managed by the EBRPD, are located within the Project Area on the shorelines of Sub-Areas B and E. The MLK Shoreline Park is a 741-

acre park leased from the Port of Oakland and includes the Garretson Point Trail. Besides the Shoreline, the Project Area is largely urbanized with the only other developed parkland being the City soccer fields in Sub-Area E.

Regulating Agencies and Land Use Control

Development within the Project Area is controlled by multiple agencies. The entire Project Area is located within the City of Oakland, which retains land use policy jurisdiction to the area through its General Plan and the Oakland Planning Code. In addition, the City of Oakland owns much of the Project Area, either directly or through the holdings of its former Redevelopment Agency, holding title to around 326 acres (or around 40 percent) of the Project Area.

Other agencies that have regulatory jurisdiction over the Project Area include the Oakland-Alameda County Coliseum Authority (JPA), the Port of Oakland, the Alameda County Airport Land Use Commission (ALUC), Union Pacific Railroad (UPRR), the California Department of Transportation (Caltrans), East Bay Regional Park District (EBRPD), the San Francisco Bay Conservation and Development Commission (BCDC), and the Alameda County Flood Control and Water Conservation District. **Figure 3-4** illustrates these overlapping jurisdictional boundaries).

- The City of Oakland and Alameda County jointly own the land on which the current Coliseum stadium and Arena and their parking lots are located. This property covers around 112 acres within Sub-Area A.
- A large segment of the Project Area includes the Oakland Airport Business Park, which is under the regulatory land use jurisdiction of the Port. Development in this area must be consistent with land use designations of the City of Oakland General Plan, but must also adhere to the development regulations of the Port of Oakland's Land Use and Development Code (LUDC). Pursuant to the LUDC, the Port may issue development permits within this area, but the City of Oakland then regulates subsequent grading and building permits.
- The ALUC reviews airport and land use development proposals within the Airport Influence Area associated with Oakland International Airport. State law does not authorize the ALUC to zone property or to apply other land use controls normally exercised by local public agencies, but does provide the ALUC with the authority "to coordinate planning at the state, regional and local levels so as to provide for the orderly development of air transportation, while at the same time protecting the public health, safety, and welfare"; and to review and make recommendations concerning specified plans, regulations and other actions of local agencies and airport operators.
- UPRR owns and operates the railroad tracks that bisect Sub-Area A. Proposed development or infrastructure over or under the tracks, such as bridges, would need permission from UPRR.
- Caltrans operates I-880 and owns right-of-way adjacent to the freeway. Much of this land is excluded from the Planning Area.
- The East Bay Regional Park District operates and maintains the Martin Luther King Jr. Regional Shoreline, which is owned by the Port. Small portions of the park are located within the Project Area. The EBRPD also owns and manages the Edgewater Seasonal Wetland adjacent to Damon Slough near its outfall to San Leandro Bay.
- A small piece of the Project Area falls under the regulatory jurisdiction of BCDC. Some of this area is within Martin Luther King Jr. Regional Shoreline, but most of BCDC jurisdiction is within the San Leandro Bay itself.

Figure 3-4
Regulatory Jurisdictions within the Project Area

Source: City of Oakland

- The Alameda County Flood Control and Water Conservation District owns just over 2 acres within the Project Area, including the Damon Slough and Elmhurst Creek flood control channels.

Other public agencies, such as EBMUD and BART, own land in the Project Area but do not have special regulating authority that supersedes that of the City.

Coliseum City Master Plan

In June of 2012, the City of Oakland entered into two separate agreements in preparation of the Coliseum Area Specific Plan and this associated EIR. The first agreement was entered into as a professional services contract with Lamphier-Gregory (an Oakland-based consultant) and a team of technical sub-consultants, to prepare the Coliseum Area Specific Plan and EIR. The second agreement was an Exclusive Negotiating Agreement (ENA) with a team of architects and developers led by JRDV International, also based in Oakland. The scope of this ENA was to provide pre-development services that include preparation of a detailed Master Plan, and to negotiate with the Oakland Raiders, Warriors, and A's sports franchises on behalf of the City with the goal of retaining these teams in Oakland and within the Coliseum District. The JRDV International team was also to prepare an integrated Master Plan for the entire Planning Area intended to support long-term economic development potential for the Oakland Coliseum District and its surroundings.

The JRDV team completed this effort in September 2013, which includes a detailed development program for the Coliseum District and adjacent areas. The Coliseum City Master Plan accommodates the retention of all three sports franchises within three new venues, together with transit-oriented mixed-use development near the Coliseum Bay Area Rapid Transit (BART) station, new job-based development and housing opportunities surrounding the sports venues, event-based and neighborhood-serving retail uses, and plans for transit improvements intended to enhance transit usage by residents, employees and event patrons, all within Sub-Area A and a portion of Sub-Area B (see **Figure 3-5**).

The Coliseum City Master Plan also includes a longer-term vision for complimentary development and redevelopment of the nearby Oakland Airport Business Park (Sub-Areas B, C and D) as a new regional center of science and technology, with light industrial and logistics uses in support of the science and technology center as well as supportive of the operating needs of the Oakland International Airport (see **Figure 3-6**). The Master Plan also proposes water-oriented residential development in a portion of Sub-Area B and open space enhancement and improvements in Sub-Area E.

The Coliseum City Master Plan (Master Plan) provides a comprehensive development and redevelopment strategy for the Coliseum District and its surroundings, establishing a land use and development framework, identifying needed transportation and infrastructure improvements, and recommending an implementation strategy. The Coliseum City Master Plan Area is envisioned as a transformative development district for the City of Oakland that will bring in new jobs, increase new tax revenue and establish new community value for the residents of the City. The transformation of this district depends on a strong vision of the area's development potential, linked with a comprehensive public/private development and investment strategy that seeks to create additional economic value. The Coliseum City Master Plan contains the following vision for the redevelopment of the Project Area.

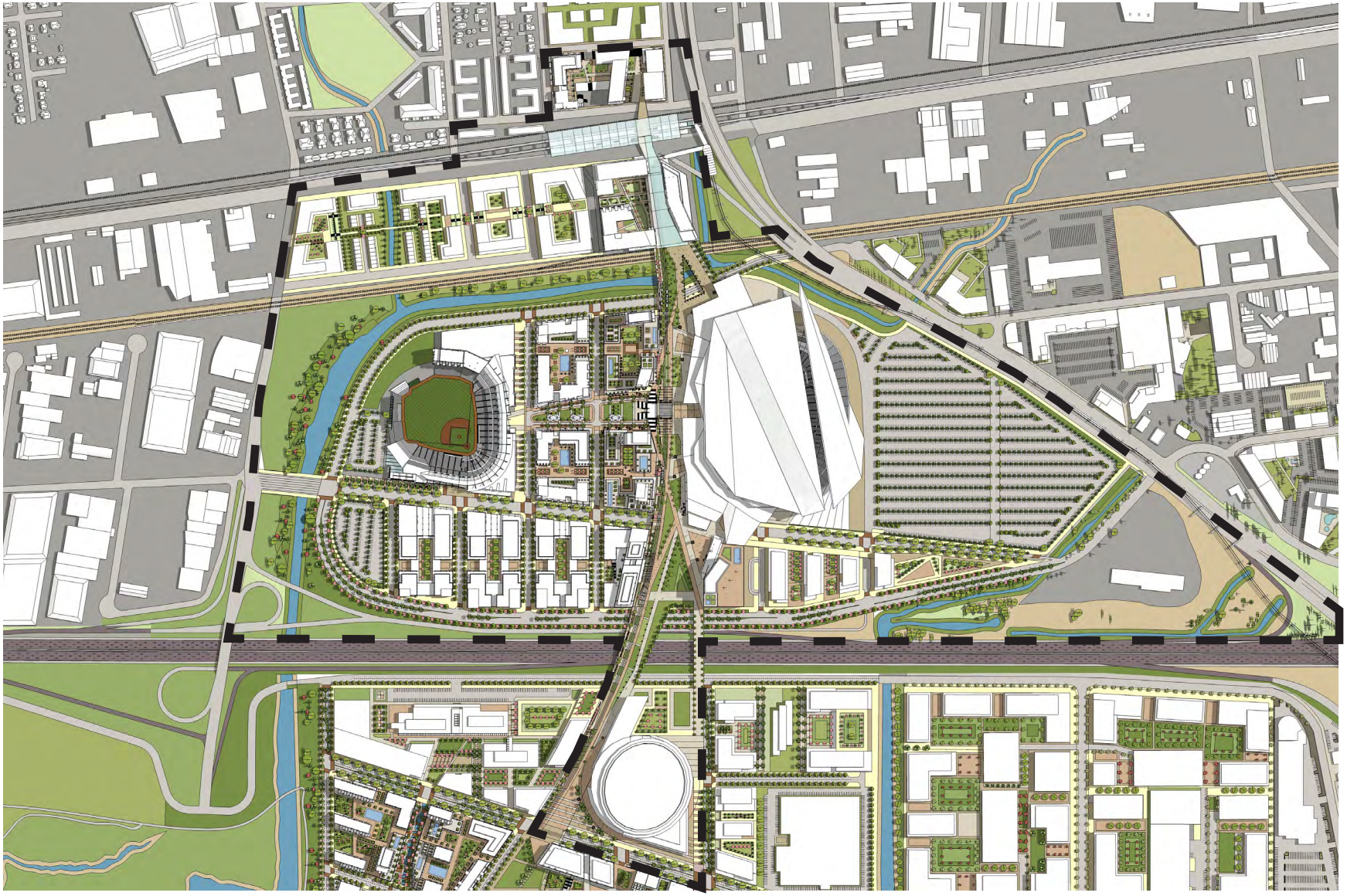


Figure 3-5
Coliseum City Master Plan, Coliseum District (Sub-Area A and portion of Sub-Area B

Source: JRDV Urban, International

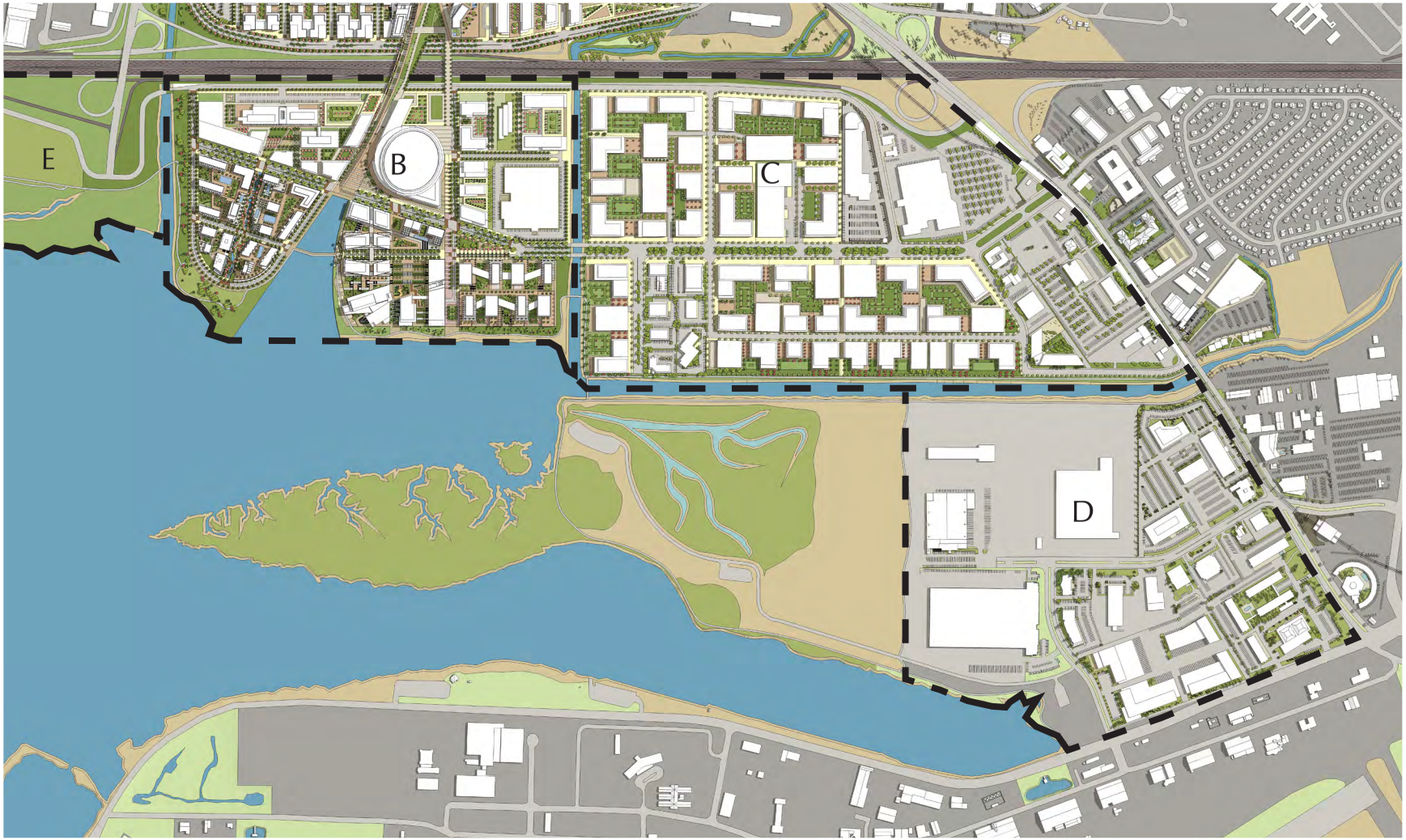


Figure 3-6
Coliseum City Master Plan, Sub-Areas B, C & D

Source: JRDV Urban, International

New Sports Venues

The Master Plan will replace the existing obsolete sports facilities with state-of-the-art new sports venues that will bring a world-class sports experience to Oakland. The approach is to create a 21st century sports district that is integrated into an active, urban environment that includes retail, entertainment, arts, culture, live and work uses - creating sports venues that become part of a new urban place. The Master Plan's design accommodates three new venues - an NFL Stadium and Multi-purpose Event Center, a MLB Ballpark, and an NBA Arena and Multipurpose Events Center. The Master Plan locates the Arena on the west side (Bay side) of I-880, but the Arena is integrally linked to the to the new Stadium and Ballpark venues on the east side via a pedestrian and transit concourse connection over the freeway.

Retail/ Entertainment and Mixed-Use District

The Master Plan will create a new retail and entertainment zone contiguous to the new sports venues. These retail and entertainment uses are designed to become the gateway elements to the new Stadium and Ballpark, becoming a central public activity focus for the Master Plan Area. This retail and entertainment zone is intended to be a unique regional destination that is active seven days a week, serving local residents, event participants and the broader City and region.

The area between the new sports venues is planned to become a high-density mixed-use neighborhood. This area will include new housing, a hotel and office uses. Ground floor uses will be regional and neighborhood-service retail. The area is designed to integrate into the sports and entertainment zone and to establish a dynamic and active urban fabric. It will include retail, entertainment, arts, and cultural uses that form an authentic urban place supporting opportunities to live, work and play.

Intermodal Transit Hub

Regional transit connections are critical elements that enable increased development within the Master Plan Area. The Master Plan identifies increased capacity and improvements to the passenger experience at the Coliseum BART station. It also creates an intermodal transit hub that integrates BART, the Oakland Airport Connector, Capitol Corridor Amtrak, AC Transit buses, and a potential future street car system into a single Transit Hub. The Transit Hub is designed to connect to the Coliseum District with a new pedestrian connection to be relocated along the 73rd Avenue right-of-way. This new pedestrian connection will be used as a concourse connection to the new Stadium, Arena, and sports entertainment zone. The connector will also become a linear park extending over I-880 to link BART to the Bay.

Coliseum BART Transit-Oriented Development (TOD) District

The area surrounding the existing Coliseum BART station is planned as a moderate- to high-density residential community. This new community will have neighborhood serving ground floor retail uses facing onto safe and active public streets that establish a high quality of place and neighborhood identity.

Science and Technology District

The Master Plan envisions redevelopment of the Oakland Airport Business Park as a new center for science and technology in the inner Bay Area. This area offers space for future research and development, institutional and corporate campus-type uses that is uniquely served by transit, within an inner Bay Area location. The scale of the Science and Technology District allows future users the opportunity to co-locate with partner network businesses in a comprehensively planned, high amenity,

urban campus location. This area is designed to become an institutional research center that will be home to local and international research entities who want to have access to the Bay Area's 'innovation-economy'. Potential research sectors that may locate in this district include life science and bio science, clean-tech and energy research, digital media, and information and software research. This District will be bolstered by its waterfront orientation with access to the shoreline, parks, recreation, housing and other amenities critical for these 'innovation-economy' tenants. Integration of this area with a world-class urban sports entertainment destination differentiates this District with amenities that few other urban locations can provide. The result is a campus workplace location unique from other locations in the Bay Area.

Waterfront Community

The San Leandro Bay estuary waterfront will house a residential and mixed-use community that complements the Science and Technology District. This area is designed to connect Oakland residents to the Bay, and to support a range of residential densities. Streets and public spaces will be activated by retail uses that create active, safe and high quality pedestrian environments. The Master Plan continues the concourse connection from BART and the sports stadia across I-880 to enable pedestrian, bike, and transit connectivity between from the waterfront and the Intermodal Transit Hub.

Technology Support District

South of the Science and Technology District will be a zone that mixes auxiliary science and technology uses with business park development.

Airport and Logistics District

The Master Plan identifies locations for large logistics and distribution uses, offices, and hotels, and retail/eating uses, taking advantage of the proximity to Oakland International Airport.

Open Space, Parks and Habitat

The Master Plan envisions rehabilitation of Damon Slough and transformation of this storm drain facility into a functional tidal habitat that revives the natural health of the Bay, and also transforms portions of the existing parking lot along 66th Avenue into natural habitat linked to the Damon Slough environment. The Master Plan also envisions new publicly-accessible waterfront as a catalyst element in remaking the Coliseum City Master Plan Area, integrating pedestrian paths, ecological tidelands and actively used park spaces.

Coliseum Area Specific Plan

In June of 2012, the City of Oakland separately engaged the services of a team of city planners, engineers, transportation planners, environmental scientists, economists and CEQA consultants to prepare a Specific Plan for the Coliseum District and adjacent areas, and an Environmental Impact Report (EIR) to assess the potential environmental consequences associated with development pursuant to the Specific Plan. The Coliseum Area Specific Plan is intended to be based upon, and to accommodate eventual development as envisioned under the Coliseum City Master Plan as described above, but is more generally intended to provide an overall policy and regulatory framework for the City within which future development activity would occur.

Because the sports franchises are privately held businesses, the City does not control their ultimate decisions whether to remain at their current Coliseum/Arena facilities, to remain in Oakland, or to

pursue other locations. Therefore, the Oakland City Council was clear in their directions to the Coliseum Area Specific Plan consultants that the City's Specific Plan must be flexible enough to accommodate all three franchises or any combination of two, one, or even no sports franchises in the future, and to provide a development plan responsive to these potential sports venue scenarios. Furthermore, while the Coliseum City Master Plan provides one clearly defined vision of development potential, it represents only one of a number of other possible development scenarios for these properties. Currently, there are no actual development applications submitted to the City pursuant to the Coliseum City Master Plan's vision.

Buildout Assumptions

Coliseum District (Sub-Area A plus the proposed new Arena Site) Development Assumptions

In order to achieve the City's vision for future development at the Coliseum District and to help facilitate positive outcomes for retaining Oakland's major sports franchises, the Specific Plan is designed to allow a flexible and adaptable approach to development. In recognition of the uncertainties surrounding the future decisions of Oakland's sports franchises, as well as the potential for a variety of development visions for the remaining property within the Coliseum District, the Specific Plan has purposefully and intentionally been prepared as a flexible, adaptable policy and regulatory planning tool that provides an overall framework or "development envelope" for the Coliseum District (Sub-Area A and a portion of Sub-Area B), within which future development applications may be considered. Rather than prescribing a rigid or fixed land use mix, the Coliseum Area Specific Plan's approach for Sub-Area A is to identify the desired mix of future land use types sought for the District and to establish a maximum development capacity for these future uses based on their vehicle trip generation potential. Major elements of this flexible approach are as follows:

- The Specific Plan is based on the assumption that all three current sports franchises (the Raiders, the A's and the Warriors) will make independent business decisions to remain in Oakland, and at the Coliseum District, and that each of the sports franchises will have new, separate venues for their games. Thus, the Specific Plan identifies locations for construction of three new sports venues – a new Stadium, a new Ballpark and a new Arena. It is also assumed that each of these venues will be used by other non-sports-related events and attractions. The Specific Plan also acknowledges that any (or even all) of these sports franchises may make other decisions, and so provides the flexibility for development scenarios that include fewer than three (i.e., 2, 1 or even no) sports venues.
- The Specific Plan establishes a list of acceptable and desirable future land uses to be accommodated within the Coliseum District, in addition to the three new sports venues. This list of land uses includes high and medium density housing, event-based and regional-serving retail, neighborhood-serving retail, science and technology uses, office space, auto-serving retail, etc.
- The Specific Plan also establishes a "maximum development envelope" for the non-sports venue development, based on the capacity of transportation infrastructure (including existing and proposed transit and roadway systems) available to serve these future uses. Within this conceptual envelope, the Specific Plan includes policies and regulations that insure that the ultimate mix and development potential of non-sports venue land use development does not exceed the capacity of this infrastructure (see further discussion regarding the proposed Coliseum District Trip Budget, below). This approach allows for various configurations of sports-entertainment uses and other development, so long as the total non-sports venue buildout remains within the "maximum development envelope."

Specific Plan Buildout Assumptions

In addition to the Coliseum District (Sub-Area A and the proposed new Arena site in Sub-Area B) the Specific Plan Area also includes the Oakland Airport Business Park and surrounding areas (Sub-Areas B, C, D and E), which are generally located immediately across I-880 from the majority of the Coliseum District. The Specific Plan's land use strategy for these areas is intended to establish, through private redevelopment efforts, a new regional center of science and technology within Sub-Area B, with light industrial and logistics use in support of the science and tech center as well as supportive of the operating needs of the Oakland International Airport within portions of Sub-Areas C and D. In total, the Specific Plan envisions new development potential for nearly 5.8 million square feet of net new non-residential development within these Sub-Areas.

Additionally, the Specific Plan recommends open space enhancements along the San Leandro Bay shoreline and within a large portion of Sub-Area E. A section of water-front residential development also is envisioned in the northwestern part of Sub-Area B.

Flexible "Trip Budget" Approach for Sub-Area A

The ultimate development potential for the Coliseum District is based on a "Trip Budget" that defines the maximum number of vehicles which can enter or exit the Coliseum District during the regular weekday PM peak hour period,[3] not including those trips generated by sports or other events at each of the three new venues. Trips associated with the new venues are considered "special trip generators" and are accounted for separately within the Specific Plan and this EIR. Thus the Trip Budget only applies to non-event land uses. This Trip Budget approach provides the City with a planning tool that enables maximum flexibility to respond to future sports venue scenarios and future development applications within the Coliseum District, but also provides certainty as to the potential off-site environmental effects that may result from these various scenarios.

Based on work conducted pursuant to the Coliseum City Master Plan, the non-sports venue development that is envisioned under that Master Plan has been used to define the Trip Budget of the Specific Plan and is based on the following assumptions:

- The non-sports venue development envisioned under the Master Plan would generate a total of 5,205 PM peak hour trips (combined inbound and outbound).
- Of those total trips, about 23% would be accommodated by BART, and a little over 10% of the external trips would be accommodated by other transportation modes (i.e., bus, bike or walk), resulting in a total mode split (or ratio of transit versus private vehicle use) of about 33% non-vehicle and 67% vehicle trips.
- Based on the on-site land use mix as envisioned under the Master Plan, there is an additional 13.5% trip reduction for "internal capture". These are home-to-work, or home-to-shopping or home-to-other activity trips that would occur internally within the Coliseum District and would not affect off-site intersections of roadways.

[3] For this EIR, the AM and PM peak periods occur on weekday mornings from 7:00 to 9:00 AM, and on weekday evenings from 4:00 to 6:00 PM

Based on the above assumptions, the total Trip Budget that would be allotted under the Specific Plan represents all 5,205 weekday PM peak hour trips, less the 13.5% "internal capture" trips, less a 33% non-vehicle transportation mode split, or 2,759 weekday PM peak hour trips.

This Trip Budget of 2,759 weekday PM peak hour trips is then used as a proxy, or means by which the maximum land use development under the Specific Plan is measured – rather than by the number of dwelling units or square feet. As new projects are approved and developed within the Coliseum District, the amount of development is converted into vehicle trips and then subtracted from the Trip Budget. The maximum development capacity of the Specific Plan as analyzed in this EIR is achieved when all of the vehicle trips have been used. An Equivalency Matrix is used to define the number of trips that are equivalent to the various types of acceptable and desirable land uses allowed within the Coliseum District.

Since trips that occur via transit or outside of peak hours do not count against the Trip Budget, increasing the availability and use of transit can increase the development potential of the Coliseum District. For example, a development projects that can achieve a 50% non-vehicle transportation mode split would use less of the Trip Budget than a similarly sized development project that only achieves a 33% non-vehicle transportation mode split. Thus, investments into transit improvements that are able to increase the non-vehicle mode split can increase the maximum development potential of the Coliseum District without "over-spending" the Trip Budget.

Future development within the Coliseum District may vary from the density, type, or location of use as shown in the Coliseum City Master Plan, but must remain within the limits of the weekday PM peak hour Trip Budget.

Urban Design and Planning Principles Applicable to the Coliseum District

To balance the flexibility of the Coliseum Area Specific Plan's "trip Budget" approach, the Specific Plan also includes a number of urban design and planning principles by which future development applications within the Coliseum District must comply. These urban design and planning principles include:

- Prioritize development of new sports venues that maximize benefits to the sports franchises and that serve as economic development catalyst for the remainder of the Planning Area and for all of Oakland;
- Provide a mix of retail/entertainment uses surrounding the sports venues to attract more people to the area, to lengthen the time they spend in the area, and to increase the revenue generated by sales, services and goods so as to better capitalize on the attraction value of the sports franchises;
- The combination of sports venues and retail/entertainment uses should result in an attraction for people to live nearby, and these new residences should be designed in such a manner as to add to the overall activity of the area. New residential development should also create value that enhances the feasibility of the rest of the area's development.
- New uses planned within the Coliseum District should provide attractions, incentives and catalysts for economic development of the surrounding area. Sub-Areas B, C and D are seen primarily as regional jobs-based land resources, specifically a place for the emergence of an expanded science and technology district. The Specific Plan identifies the buildout priority of those Sub-Areas on the water-side of the freeway as future jobs-based development, with the potential for ancillary and associated housing development.

- The area immediately surrounding the Coliseum BART station (i.e., the BART parking lot) is seen as a good location for new residential, commercial and mixed-use development, providing a transition and connection from the existing adjacent neighborhoods, and building upon the recent construction of housing at the adjacent Lion Creek Crossings development. This connection should be enhanced by providing moderately priced housing at moderate densities in areas nearest to existing neighborhoods, and transitioning to higher densities nearest to Hegenberger Road and the BART station itself. Uses more internal to Sub-Area A should include a mix of both origin and destination land uses at densities and intensities high enough to create a Transit-Oriented Development (TOD) consistent with Bay Area regional growth policies and California state law as provided for under SB 375 and AB 32. Aside from development at the neighborhood edge, new residential development within Sub-Area A should be at a minimum of 55 units per acre (densities which exceed the City's RU-2 zoning district), and new non-residential development should have minimum floor-to-area ratios (FARs) of greater than 1:1.
- New development within the core of the Coliseum District should result in creation of a vibrant, urban, mixed-use district. Toward this objective, the Specific Plan includes design guidelines intended to facilitate active streetscapes, public spaces that provide an enhanced pedestrian and bicycle experience, site security and high quality development.
- On-site open space requirements for Sub-Area A should increase public access to the Bay, enhance natural habitat values (particularly along Damon Slough), and provide public educational opportunities about the Bay ecosystem for Oakland and Bay Area residents.
- New development within Sub-Area A should avoid an entirely inward focus, and instead should serve as a catalyst to stimulate economic development activity outside the edges of the Planning Area.

Land Use Changes

General Plan Amendments

Sub-Area A: The City of Oakland General Plan Land Use Diagram in the *Land Use and Transportation Element* ("LUTE", 1998) designates the entire portion of Sub-Area A that is west of San Leandro Street as Regional Commercial, a land use designation intended to "serve as region-drawing centers of activity." The desired character of uses include "a mix of commercial, office, entertainment, arts, recreation, sports and visitor-serving activities, residential and mixed-use development (at a maximum residential density of 125 dwelling units per gross acre in a mixed use project), and other uses of similar character or supportive of regional drawing power." The Land Use and Transportation Element of the General Plan also defines this area as the Coliseum Showcase District; "…a superb prospect for the area's future as a regional center of entertainment and commercial recreation." The Regional Commercial General Plan land use designation is descriptive of the current use of the majority of Sub-Area A, as well as the desired future uses pursuant to the Specific Plan for most of this portion of Sub-Area A east of the railroad tracks, and no General Plan land use change is recommended for this major portion of Sub-Area A.

The City of Oakland General Plan Land Use Diagram designates those portions of Sub-Area A that are located east of San Leandro Street and north of Hegenberger Road to 73rd Street (i.e., near the Coliseum BART station) as Community Commercial. Community Commercial is a land use designation with a desired land use character that includes "neighborhood center and larger-scale retail and commercial uses, educational facilities and entertainment uses, . . . complimented by the addition of urban residential development and compatible mixed use development," with a maximum residential

density of 125 dwelling units per gross acre. The Community Commercial land use designation is generally inclusive of the desired future uses in this area pursuant to the Specific Plan, which envisions transitional-density, mixed-use transit-oriented development. No General Plan land use change is recommended for this portion of Sub-Area A.

However, there is a one-block wide row of properties within Sub-Area A that are located west of San Leandro Street and east of the railroad tracks. These properties have current General Plan land use designations of either Regional Commercial (from Hegenberger Road to 69th Avenue) or General Industrial (from 69th Avenue to 66th Avenue). Pursuant to the Specific Plan, these properties are envisioned as part of the mixed-use transit-oriented development proposed as part of the Coliseum BART station TOD. General Plan land use amendments are proposed as part of the Project, re-designating those properties west of San Leandro Street and east of the railroad tracks from General Industrial and Regional Commercial, to Community Commercial (see **Figure 3-7**). The Community Commercial land use designation allows residential development more similar in character to that envisioned for the remainder of the Coliseum BART station TOD area to the east (see **Table 3-2** and Site "A" on Figure 3-7).

For reference, the current General Plan designation map is included in Figure 4.9-2.

Table 3-2: Sub-Area A, Proposed General Plan Amendments

ID	Existing General Plan	Proposed General Plan Changes
A1	Regional Commercial	Community Commercial
A2	General Industrial	Community Commercial

Sub-Area B: The City General Plan Land Use Diagram designates the majority of Sub-Area B as Business Mix. This is a land use designation with a desired land use character that includes "a mix of business uses such as light industrial, manufacturing and food processing; commercial; bio-sciences and bio-technology; research and development; air, rail and truck-related transportation services; warehouse and distribution facilities; offices and other uses of similar business character." It does not enable residential development.

This land use designation is not inclusive of, nor descriptive of the desired future use of portions of Sub-Area B pursuant to the Specific Plan or the Master Plan. The Specific Plan envisions a new Arena (sports and events center), a high-density, mixed-use waterfront residential development within the northerly portion of Sub-Area B, and science and technology uses similar in character to that envisioned within Sub-Area A as occurring within Sub-Area B. Therefore, the Project includes a General Plan amendment to the Land Use designation for the majority of Sub-Area B from Business Mix to Regional Commercial - the same as the land use designation across I-880 within Sub-Area A (see **Table 3-3** and Site "B").

The General Plan land Use Diagram also designates along the waterfront an irregularly shaped area, not coterminous with property lines or currently applicable setback requirements, as Urban Open Space. The Project includes a General Plan amendment to the Land Use Diagram, revising the Urban Park and Open Space designation boundary along the shoreline of San Leandro Bay, Damon Slough and Elmhurst Creek to more accurately reflect a 100-foot shoreline band and be more reflective of property boundaries (see Sites "I" and "J").

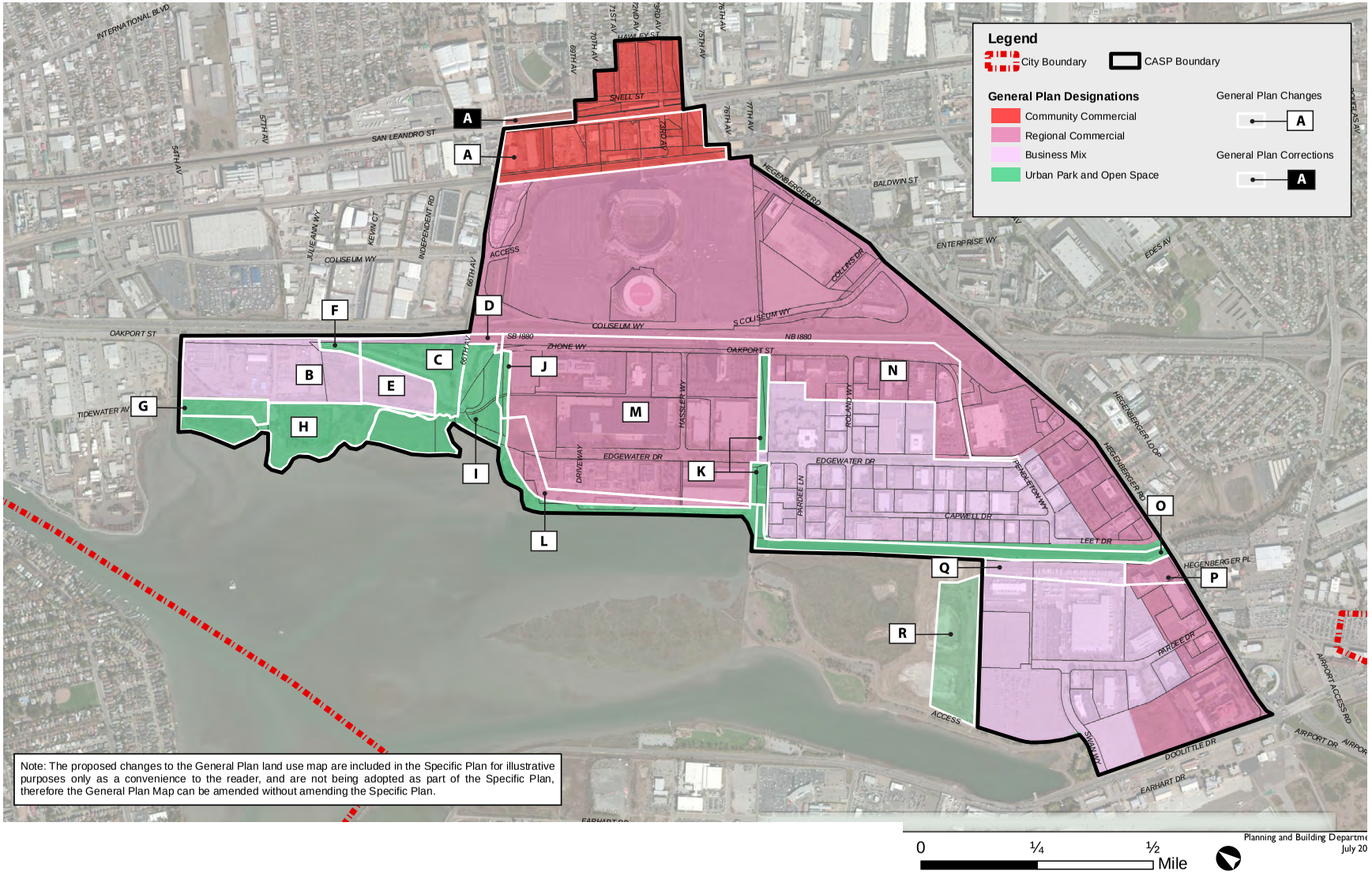


Figure 3-7
Recommended General Plan Land Use Designations

Source: City of Oakland

Sub-Area C: The City General Plan Land Use Diagram currently designates those portions of Sub-Area C that front along the Hegenberger Road corridor (including the retail commercial center at Hegenberger Road and Edgewater Road) as Regional Commercial, with the remainder of the interior portions of Sub-Area C designated as Business Mix. The project proposes to amend the land use designations for properties which front along Oakport Street and facing onto I-880, changing their land use designations from Business Mix to Regional Commercial (see Site "N"). These General Plan amendments are recommended to more fully address the existing commercial character of these properties, to provide greater consistency with applicable Port of Oakland zoning, and to recognize the greater prominence of regional commercial use in this area.

General plan amendments are also proposed to clarify the Urban Parks and Open Space designation within a 100-foot band along both sides of San Leandro Creek and Elmhurst Creek (see Sites "O" and "K").

Sub-Area D: Similar to Sub-Area C, the City General Plan Land Use Diagram currently designates those portions of Sub-Area D that front along the Hegenberger Road corridor (including the commercial corner at Hegenberger Road and Doolittle Drive) as Regional Commercial, with the remainder of the interior portions of Sub-Area D designated as Business Mix. The only real changes proposed for Sub Area D are mapping corrections which change Open Space designations: at 201 Hegenberger Road to Regional Commercial (Site "P"); and 8300 and 8400 Pardee Drive to Business Mix (Site "Q"). These General Plan amendments are recommended to more fully address the existing commercial character of these properties.

General plan amendments are also proposed to confirm the Urban Park and Open Space designation boundaries to provide a 100-foot band of park along the westerly side of San Leandro Creek (see Site "O"), and on a portion of Arrowhead Marsh previously designated Business Mix (see site "R").

Sub-Area E: Sub-Area E has a mix of land use designations pursuant to the Estuary Policy Plan that include Light Industry-3, General Commercial-2 and Parks. A portion of Sub-Area E also falls within a gap between the Estuary Policy Plan and the LUTE Land Use Diagrams, with effectively no existing General Plan land use designation. The Project proposes to bring the entire Sub-Area E into the area fully addressed in the LUTE's Land Use Diagram, removing Sub Area E from the Estuary Policy Plan.

The portion of Sub-Area E which the Specific Plan recommends for open space enhancements along the San Leandro Bay shoreline is already designated as Park (and now amended as Urban Park and Open Space). Additional General Plan amendments are recommended to increase land area of Urban Park and Open Space to additional sites, owned by the City and a portion of the site owned by EBMUD and leased to the East Bay Regional Parks District (see Sites "G" and "H"). The EBMUD-owned properties on Oakport Street (the water treatment facility, corporation yard and vacant 14 acre site) are proposed to be amended to Business Mix, more accurately reflecting these current and expected long-term uses (see Site "B" and "E"). The City-owned property adjacent to the 66th Avenue off-ramp from I-880 is proposed to be changed from General Commercial to Urban Park and Open Space (see Site "C").

Table 3-3: Proposed General Plan Amendments for Sub-Areas B, C, D and E

ID #	Existing General Plan Designation	Proposed General Plan Change
B	EPP: Light Industrial 3	Business Mix
C	EPP: General Commercial 2	Urban Park and Open Space
D	None (no LUTE or EPP designation)	Regional Commercial
E	EPP: General Commercial 2	Business Mix
F	EPP: Light Industrial 3	Urban Park and Open Space
G	EPP: Light Industrial 3	Urban Park and Open Space
H	EPP: Parks	Urban Park and Open Space
I	None (no LUTE or EPP designation)	Urban Park and Open Space
J	Business Mix	Urban Park and Open Space
K	Business Mix	Urban Park and Open Space
L	Urban Park and Open Space	Regional Commercial
M	Business Mix	Regional Commercial
N	Business Mix	Regional Commercial
O	None (no LUTE or EPP designation	Urban Park and Open Space
P	Urban Park and Open Space	Regional Commercial
Q	Urban Park and Open Space	Business Mix
R	Business Mix	Urban Park and Open Space

Note: "EPP" is the Estuary Policy Plan of the Oakland General Plan. "LUTE" is the Land Use and Transportation Element of the Oakland General Plan.

Zoning Changes

The proposed Project will be accompanied by amendments to the Oakland Zoning Map and Planning Code that will create up to six new Coliseum Area zoning districts ("D-CO-1" through "D-CO-6"), as well as a new zoning map with up to four zoning changes to allow new residential, hotel, sports facilities uses to the Coliseum District (see **Table 3-4** and **Figure 3-8**).

Table 3-4 Proposed Zoning Changes for Coliseum District (Sub-Area A)

ID #	Existing Zoning	Proposed Zoning Change	Acres
1	S-15: Transit Oriented Development	D-CO-1: New Coliseum District-1	17
2	CR-1: Regional Commercial	D-CO-2: New Coliseum District-2	191
24	CR-1: Regional Commercial	D-CO-1: New Coliseum District-1	34
25	S-15: Transit Oriented Development	D-CO-1: New Coliseum District-1	2

These zoning changes are summarized below:

Sub-Area A:

The portion of Sub-Area A that is east of San Leandro Street and nearest to the Coliseum BART station (including the BART parking lots) is currently zoned for Transit-Oriented Development (S-15). This zoning district is consistent with the desired future uses of this area pursuant to the Specific Plan, but a new Coliseum zoning district (D-CO-1) is proposed for this area. The new D-CO-1 zoning district would mirror much of the City's existing S-15 zoning district, but would add additional urban design requirements of the Specific Plan to this area. This new D-CO-1 zoning district would also be extended as far south as the railroad tracks and Damon Slough (see Sites #1, #24 and #25), to include the properties on San Leandro Street which currently face the BART station.

The Coliseum complex located between San Leandro Street and I-880 is currently zoned Regional Commercial (CR-1). While this zoning district is descriptive of most of the desired future uses pursuant to the Specific Plan, it does not permit residential uses. A new Coliseum zoning district (D-CO-2) is proposed for this area (See Site #2). The new D-CO-2 zoning district would mirror much of the City's existing CR-1 zoning district, but would add permanent residential activity and multi-family residential facilities as conditionally permitted uses.

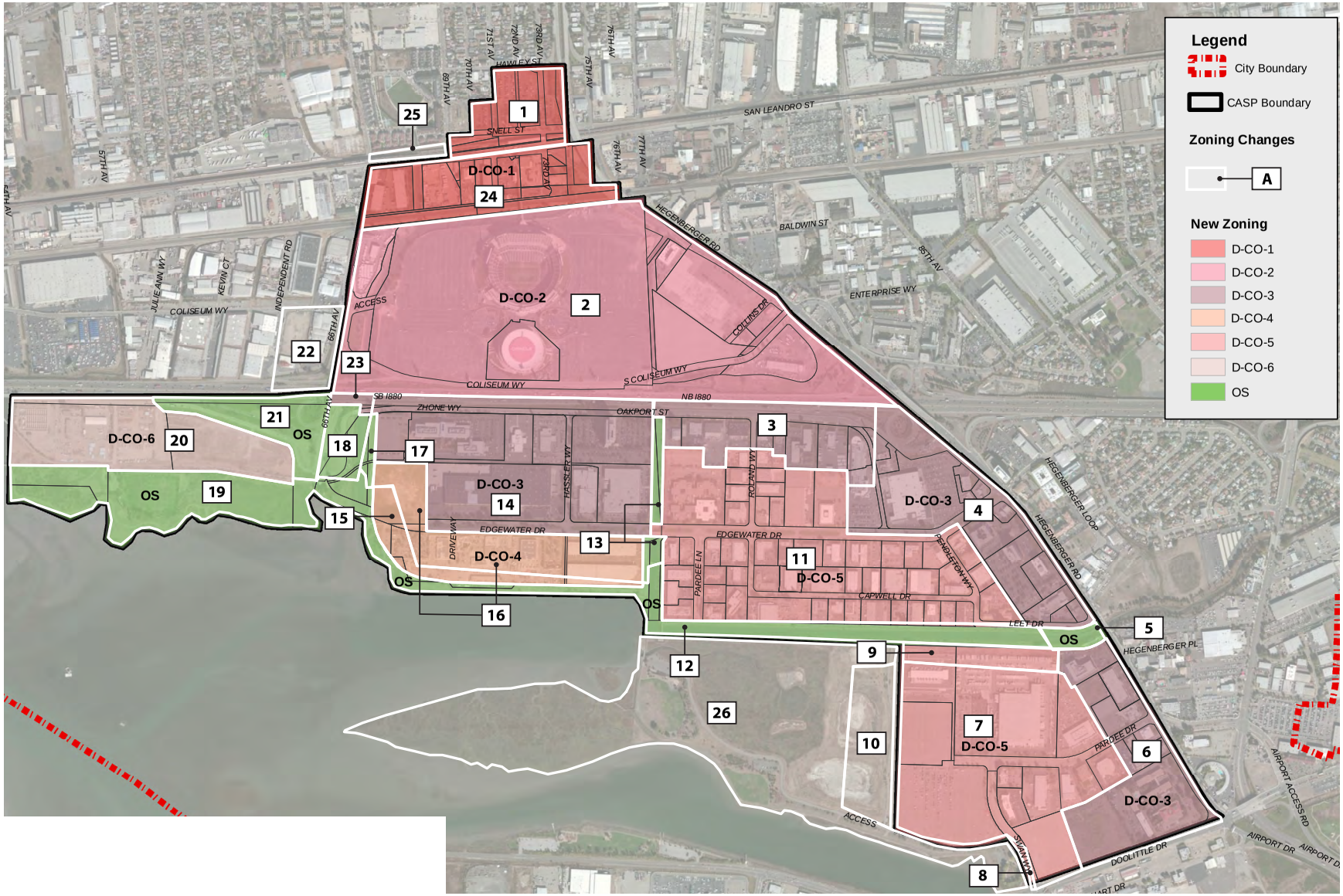


Figure 3-8
Recommended Zoning for the Planning Area

Source: City of Oakland

Sub-Area B: All of Sub-Area B is currently zoned under the City's Zoning Map as Industrial/Office (IO). The IO zoning is intended for a wide variety of businesses and related commercial and industrial establishments in a campus-style setting. Development and performance standards in this district are restrictive and accommodate large-parcel development in an attractive, well-landscaped setting. Future development under the Plan is intended to reflect large-scale office, research and development, light industrial, wholesaling and distribution, and similar and related supporting uses.

However, the Specific Plan envisions a new Arena sports and events center, a science and technology district, as well as a high-density waterfront residential development within the northerly portion of Sub-Area B. In order to accommodate these uses, the Specific Plan recommends that zoning for the Arena site and the waterfront residential site be changed to a new Coliseum zoning District (D-CO-3) which would permit an Arena, science and technology uses consistent with the Specific Plan and other more traditional businesses and related commercial and industrial establishments, and would conditionally permit residential and mixed-use development under certain conditions (see Site #14).

A significant change to the current zoning designation of I/O in Sub Area B would be proposed between Edgewater Drive and the shoreline: a new mixed-use residential zone, Coliseum Zoning District 4 (D-CO-4), to allow new residential uses on the waterfront, on land currently occupied by the City's corporation yard, the East Bay Regional Parks Edgewater Seasonal Wetland, and potentially, mapped for the warehouse building at 7303 Edgewater Drive (see Sites #15 and #16).

The zoning map for the remainder of Sub-Area B would be re-zoned as Open Space consistent with the Urban Park and Open Space land use designations indicated above for the General Plan (see Sites #13 and #19).

Sub-Area C: The existing City zoning applicable within Sub-Area C is IO and CR-1, with the Regional Commercial zoning (CR-1) mapped primarily along Hegenberger Road. The Project proposes to rezone portions of Sub-Area C with two new Coliseum zoning Districts (D-CO-3 and D-CO-5). The new D-CO-3 zone would replace the current Regional Commercial zoning along Hegenberger Road and Oakport Street, and would more clearly permit the existing commercial character of these properties, provide greater consistency with applicable Port of Oakland zoning, and recognize the greater prominence of regional commercial use in this area (see Sites #3 and #4). The new D-CO-5 zone would replace the current IO zoning, and emphasize the science and technology support uses envisioned under the Specific Plan for this area; the proposed D-CO-5 zone would be similar to the "Business Park Interior" designation in the Port of Oakland's Land Use and Development Code (see Site #11).

Sub-Area D: The existing City zoning applicable within Sub-Area D is CIX-2 and CR-1, with the CR-1 zoning applicable primarily along Hegenberger Road. The portions of Sub-Area D inbound of the Hegenberger Road corridor are currently zoned Commercial/Industrial Mix (CIX-2), which is intended to create, preserve, and enhance industrial areas in the Central and Eastern portions of the City appropriate for a wide variety of heavy commercial and industrial establishments. The Project proposes to rezone portions of Sub-Area D with the two new Coliseum zoning Districts (D-CO-3 and D-CO-5) similar to the proposed re-zoning of Sub-Area C. The new D-CO-5 zone would emphasize the warehouse, logistics and airport support functions of this area as envisioned under the Specific Plan (see Sites #6, #7 and #8). There are corrections proposed to the zoning map to confirm an open space zoning designation on a portion of Arrowhead Marsh previously zoned both CIX-2 and M-40 (see Sites #10 and #26). Likewise, the entrance to San Leandro Creek along Hegenberger is corrected to an open space zone (Site #5). A further correction, along San Leandro Creek for properties at 8300 and 8400 Pardee Drive, from M-40 to D-CO-5 is proposed (See Site #9).

Sub-Area E: Most all of Sub-Area E is currently zoned M-40 (an industrial zone), with the property immediately adjacent to the 66th Avenue off-ramp zoned CIX-2. Similar to the General Plan amendments proposed above, the Project proposes to rezone the waterfront of this Sub-Area to Open Space (OS) (See Site #19). The EBMUD-owned properties on Oakport Street (the water treatment facility, corporation yard and vacant 14 acre site) are proposed to be mapped with a new Coliseum District Zone D-CO-6, to more accurately reflect the current and expected long-term uses at the site (see Site "20"). Additionally, the City-owned properties adjacent to the 66th Avenue off-ramp from I-880 are proposed to be zoned Open Space (Site #21).

The Specific Plan's recommended zoning for the Planning Area is shown on **Table 3-5** and **Figure 3-8** (for reference, the existing zoning is shown in Figure 4.9-4).

Table 3-5 Proposed Zoning Changes for Sub-Areas B, C, D and E

ID #	Existing Zoning	Proposed Zoning Change	Acres
3	IO: Industrial/Office	D-CO-3: New Coliseum District-3	31
4	CR-1: Regional Commercial	D-CO-3: New Coliseum District-3	50
5	CR-1: Regional Commercial	OS: Open Space	3
6	CR-1: Regional Commercial	D-CO-3: New Coliseum District-3	40
7	CIX-2: Commercial/Industrial Mix	D-CO-5: New Coliseum District-5	84
8	M-40: Industrial	D-CO-5: New Coliseum District-5	1
9	M-40: Industrial	D-CO-5: New Coliseum District-5	8
10	CIX-2: Commercial/Industrial Mix	OS: Open Space	17
11	IO: Industrial/Office	D-CO-5: New Coliseum District-5	105
12	M-40: Industrial	OS: Open Space	18
13	IO: Industrial/Office	OS: Open Space	4
14	IO: Industrial/Office	D-CO-3: New Coliseum District-3	82
15	M-40: Industrial	D-CO-4: New Coliseum District-4	11
16	IO: Industrial/Office	D-CO-4: New Coliseum District-4	28
17	IO: Industrial/Office	OS: Open Space	2

18	CIX-2: Commercial/Industrial Mix	OS: Open Space	7
19	M-40: Industrial	OS: Open Space	50
20	M-40: Industrial	D-CO-6: New Coliseum District 6	41
21	M-40: Industrial	OS: Open Space	15
22	CIX-2: Commercial/Industrial Mix	CIX-1: Commercial/Industrial Mix-1	11
23	CIX-2: Commercial/Industrial Mix	D-CO-3: New Coliseum District-3	1
24	CR-1: Regional Commercial	D-CO-1: New Coliseum District-1	34
25	S-15: Transit Oriented Development	D-CO-1: New Coliseum District-1	2
26	M-40: Industrial	OS: Open Space	127

Regulatory Land Use Jurisdiction

The City of Oakland Charter grants land use jurisdiction for land within the "Port Area" (which includes the Oakland International Airport, the Oakland Airport Business Park and the seaport, to the Port of Oakland. All of Sub-Areas B, C and D are located within the Oakland Airport Business Park (see **Figure 3-9**), and thus are under the regulatory land use jurisdiction of the Port.

The Port's Land Use and Development Code (LUDC) regulates the construction, alteration and operation of buildings and structures in the area, and City zoning pursuant to the Oakland Planning Code is not applicable (even though mapped) within the Business Park. The LUDC is intended to ensure orderly and appropriate development of the Business Park with land uses consistent with the City of Oakland General Plan, City of Oakland Charter and the Alameda County Airport Land Use Compatibility Plan, and compatible with the operation and safety requirements of the Oakland International Airport. A Port Development Permit substitutes for a City of Oakland zoning clearance for businesses on properties in the Business Park. A tenant or private property owner must obtain a Port Development Permit before initiating any construction, extension, alteration, improvement, erection, remodel, or repair of any structure in the Business Park. Once a Development Permit is approved by the Port, applicants may also need to apply for building, grading and other permits from the City of Oakland prior to commencing work.

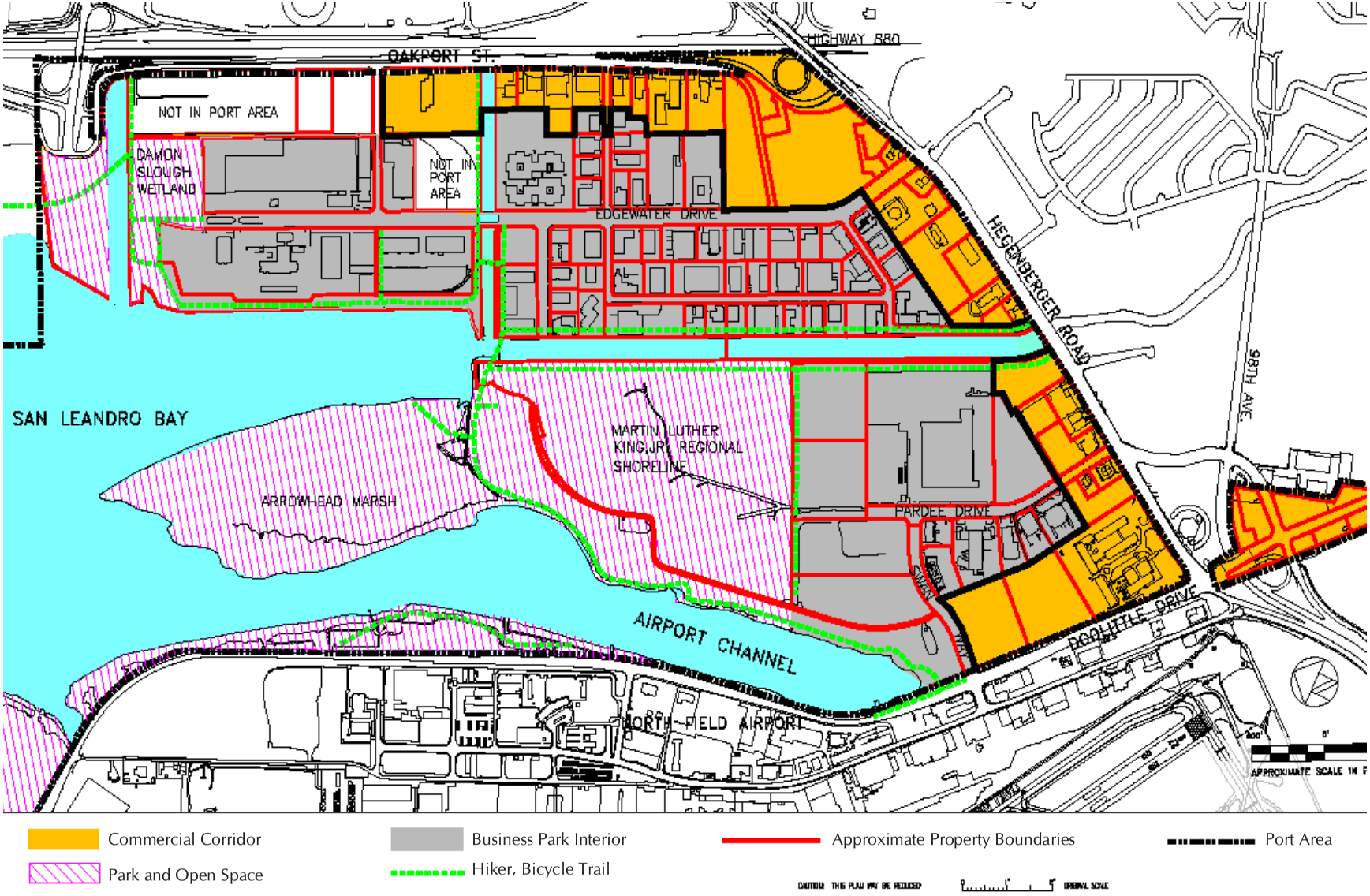


Figure 3-9
Oakland Airport Business Park, Port of Oakland LUDC

Port of Oakland Land Use and Development Code, Figure 2-1

Given the Port's regulatory jurisdiction throughout large portions of the Specific Plan Area, one of three options is recommended as implementation strategies of the Specific Plan:

1. The Port, through its governing Port Board, may consider, approve and adopt the Specific Plan and use the Specific Plan's land use regulations and guidelines in lieu of the current LUDC regulations, standards and guidelines - effectively implementing the Specific Plan as co-lead agencies with the City of Oakland; or
2. the Port may choose to cede its regulatory land use authority over those portions of the Oakland Airport Business Park that are addressed within the Specific Plan to the City of Oakland as was done in 2000 with the Zhone Industries building; or.
3. The Port may choose to instead amend its own LUDC to allow the new Arena and waterfront residential / retail mixed use as permitted or conditionally permitted uses within the Business Park.

Effective implementation of the Specific Plan on those properties which are privately owned and which are within the Oakland Airport Business Park is dependent upon of one of these three options.

Subsequent Planned Unit Development Permits- Sub-Area A

The requirements, guidelines and policy directions of the Coliseum Area Specific Plan are intended to be implemented throughout Sub-Area A through the establishment of a development review process that will include, but not be limited to one or more of the following:

- Planned Unit Development (PUD) permit process pursuant to the City's PUD provisions in Chapter 17.140 of the Oakland Planning Code;
- Development Agreement (DA) process pursuant to the City's Development Agreement provisions found in Chapter 17.138 of the Oakland Planning Code;
- Conditional Use Permit (CUP) review pursuant to the City's CUP provisions of Chapter 17.134 of the Oakland Planning Code; and
- Design Review (DR) under the City's Design Review Provisions of Chapter 17.136 of the Oakland Planning Code.

Under the Specific Plan's development review process, an application for development permits within the Coliseum District (Sub-Area A) would be submitted by a prospective developer or master developer. The permit application would include a Preliminary Development Plan (PDP) of the entire portion of the site for which they intend to entitle and develop, showing the overall intended development program and including a detailed land use diagram illustrating the location and proposed density and intensity of each land use, as well as a proposed phasing plan. It is possible, but not required that one PDP may be submitted for the entire Coliseum District. Alternatively, PUD permits may be sought for smaller sub-districts within the Coliseum District provided that they demonstrate general conformity with the intent of the Specific Plan. Upon approval of the PDP by the City, subsequent Final Development Plans (FDPs) would be submitted, providing fully detailed development plans for each phase. FDPs may be submitted for one or for several phases at a time. City approvals of the Preliminary Development Plan and all subsequent Final Development Plans will be considered discretionary actions of the City, to be determined by the Planning Commission and appealable to the City Council.

Subsequent Development Permits - Sub-Areas B, C, D and E

The policy direction of the Coliseum Area Specific Plan is intended to be implemented throughout Sub-Areas B, C and D relying on two separate permit and approval processes, dependent upon the scale of development proposed.

Sub-Area B (and potentially Sub-Area C) PUD Permits: As envisioned under the Coliseum City Master Plan, the Edgewater Business Park would be redeveloped as a new center for science and technology, providing new space for future research and development, institutional and corporate campus-type uses. This type of development is expected to be large in scale, would likely be phased-in over time, and would be highly dependent upon transportation and transit enhancements. Therefore, any such new campus-style development that may ultimately be proposed within Sub-Area B (and potentially within Sub-Area C) shall be subject to a Planned Unit Development process pursuant to City Planning Code section 17.142.020. According to the Planning Code, the definition of a "Planned Unit Development" (PUD) is a large, integrated development adhering to a comprehensive plan and located on a single tract of land of sixty thousand (60,000) square feet or more, or on two (2) or more tracts of land equaling sixty thousand (60,000) square feet or more in total which may be separated only by a street or other right-of-way.

The PUD process for Sub-Areas B and potentially applicable to Sub-Area C is intended to facilitate development of comprehensively planned, high amenity, urban campus sites.

Regular Zoning and Development Permits: Not all future development within Sub-Areas B and C, and likely no new development within Sub-Area D will consist of urban campus-style development. One of the objectives for these Sub-Areas is to encourage and promote the co-location of smaller partner businesses in immediate proximity to the larger institutional and corporate campuses. Rather than adding additional regulatory and permit processes to these smaller, individual business developments, the Specific Plan seeks to enable and facilitate these types of partner developments with a more streamlined development process. For those individual projects not qualifying as a PUD pursuant to City Planning Code Section 17.142.020, either existing regulations under the Port's Land Use and Development Code, or new City zoning as described above (CR-1, IO and CIX-1), would apply.

EIR Project Description

Approval and implementation of the Coliseum Area Specific Plan is a "project" subject to the California Environmental Quality Act (CEQA). As such, this EIR is intended to disclose the potential significant environmental effects of implementing the Specific Plan, plan alternatives, and the means by which possible environmental damage may be reduced or avoided. The information in this EIR is intended to provide City decision makers with information necessary to guide policy development, and to consider the means by which potential impacts to the environment may be reduced or avoided.

Project Objectives

CEQA Guidelines Section 15124(b) requires this EIR to describe the basic objectives of the project. These objectives are outlined in the Notice of Preparation of this EIR. These objectives include, but are not limited to those listed below.

As further described below, the CEQA Project for this EIR is implementation of the Coliseum Area Specific Plan. The Specific Plan, as informed and modeled upon the Coliseum City Master Plan. Together, these two planning documents provide a detailed development "scenario" that accommodates up to three new venues for the City's professional sports teams, and a longer-term vision for buildout of the remainder of the Specific Plan Area. The Specific Plan provides a "roadmap" for land use policy, regulatory requirements and future public and private investment, coordinating future development in the Coliseum Area to create significant long-term value for Oakland and Alameda County. The Coliseum Area Specific Plan is intended as a comprehensive plan to transform what is currently one of the largest under-developed, inner-urban, transit-served redevelopment opportunities in the Bay Area, also served by freeway connectivity, a nearby international airport, waterfront property and contiguous development potential. The Coliseum Area Specific Plan envisions leveraging these core assets to their maximizing potential to create a viable, long-term center for Oakland's economic development. The proposed Specific Plan is designed to leverage these assets into a comprehensively designed mixed-use district that will retain the existing sports franchises and attract sustainable new jobs and economic development.

The Project objectives by which the Coliseum City Master Plan and the Coliseum Area Specific Plan have been developed include, but are not limited to the following:

4. Retain the existing professional sports teams (the Oakland Raiders, the Oakland A's and the Golden State Warriors), and maximize the economic value for Oakland and Alameda County from these sports facilities.
5. Create a regionally significant Science and Technology District that can act as a catalyst to expand Oakland's ability to attract new businesses and to participate in the Bay Area's dynamic 'innovation economy'.
6. Leverage and enhance the existing transit and transportation infrastructure, and create a model transit-oriented development (TOD) which is consistent with regional growth policies and state law as provided for under SB 375 and AB 32. Such transit-oriented development will increase Oakland's ability to leverage its central position in the Bay Area to capture a bigger share of regional housing growth, job growth and economic investment.
7. Create a vibrant urban mixed-use district which will attract a significant community of new residential and commercial uses. This district will generate activated streets, public spaces that provide an enhanced pedestrian experience, site security and high quality development.

8. Create new open space, Bay access, and natural habitat enhancement, providing public educational and Bay accessibility opportunities for Oakland and Bay Area residents.
9. If one or more of the sports teams were to leave Oakland, the Specific Plan is intended to provide a stabilizing guide for other future development of the Project Area.

Underlying Planning Strategies

In addition to the basic Project Objectives, there are a number of other underlying planning strategies that are inherent in the formulation of the proposed Project and that drive its formulation. These strategies include the following:

1. Increase the underlying land values within the Coliseum Area to stimulate investment interest and enhance the economic feasibility of the Specific Plan.
2. Create new sports and entertainment venues that are more appealing and which provide a greater visitor experience for fans and event patrons, thereby increasing the number of events held in each venue, and increasing the overall average attendance at each event or game.
3. Establish a comprehensive site management program for the Coliseum District intended to provide a high quality, well managed, safe and secure urban place. The site management program is also intended to coordinate marketing and branding, tenant leasing, site management and security, and other key development programs that encourage high value tenants to occupy the Site.
4. Improve the quality and capacity of available transit infrastructure, and capitalize on the improved transit availability to positively influence the location decisions made by new workplace and housing developers in favor of the Coliseum District.
5. Enhance the overall economic value of the surrounding East Oakland area by creating a regional sports, entertainment and retail destination capable of accommodating and attracting in excess of six million sports fans and event patrons each year, an increase in attendance of more than 2 million attendees.
6. Leverage the increase in sports and event attendance to further expand on-site retail and entertainment uses, creating a regionally significant urban place with opportunities for new housing, employment and economic investment.
7. Create active urban streets, walkable and bike-able pedestrian-scaled urban districts, and architectural forms that establish a clear identity for Coliseum City and the surrounding area. The overall urban strategy should create an authentic sense of place. The quality of design, architecture, landscape and streetscape should all be critical elements in redefining the area as a place where residents and tenants want to live and relocate.
8. The urban form for the Coliseum District should connect to Oakland and link to the surrounding neighborhoods, rather than creating an isolated ‘island’ of new development.
9. Increase the City of Oakland’s ability to capture a greater share of the positive growth and economic development that is projected for the region over the next 20 years, consistent with broadly-defined regional growth policies as outlined in SB 375 and AB 32. Fulfill the Priority Development Area (PDA) designation of the Coliseum area by strengthening the character of places through sustainable development; accommodating new housing and employment centers within the existing urban footprint; locating future housing and jobs next to transit, amenities and services; strengthening regional transit corridors to provide access to jobs and services; thereby preserving other land outside the urban core for open space and agriculture.

Coliseum City Master Plan's Description of the "Coliseum District"

The Coliseum City Master Plan provides one detailed, specific and clearly defined vision under which the Specific Plan might be implemented within Sub-Area A and the portion of Sub-Area B underlying the proposed new Arena (i.e., the "Coliseum District", as shown in **Figure 3-10**). The Master Plan for Sub-Area A and a portion of Sub-Area B also represents the maximum development potential that could occur within this area pursuant to the urban design and planning principles of the Specific Plan. Therefore, this EIR provides a comparably detailed and specific environmental analysis of the Master Plan's development program for the new sports venues and their associated retail uses, transit improvements at the BART station, mixed-use and residential development (including the BART area TOD) and creation of new science and technology space within Sub-Area A and a portion of Sub-Area B). Thus, the Coliseum City Master Plan for the Coliseum District serves as the Project Description for this portion of the Project's environmental review. The traffic analysis for the sports venues (including the Arena, which is planned to be developed in a portion of Sub-Area B) will be included in this detailed analysis as "special generators". For purposes of this environmental review, buildout of the Coliseum District is expected to occur by year 2035. A more detailed description of development planned within the Coliseum District is provided below.

New Sports and Events Venues

This district makes up 85 acres of within the Coliseum District, and includes up to 2.8 million square feet of new building space in addition to the three new sports venues.

NFL Stadium and Multi-purpose Event Center

The proposed new Stadium would be constructed on an approximately 12.6-acre site bounded on the east by the Union Pacific Railroad tracks, on the south by the Hegenberger Road, and on the west by I-880 (see **Figure 3-11**). The stadium would be developed by the Oakland Raiders professional sports franchise on land owned by the City of Oakland and Alameda County. The Oakland-Alameda County Coliseum Authority would control the use of the Stadium through a management agreement with a professional management association (currently AEG). The Stadium would be leased to the Oakland Raiders, a National Football League (NFL) franchise, for playing home games during the NFL pre-season, regular season, and post-season and for other NFL related events.[4]

[4] The NFL has a 21-week season, including 4 pre-season games and a 17-week regular season schedule. Each team plays 2 of its 4 pre-season games, and 8 of its 16 regular season games, at home. Other games are "away' games, plus 1 bye week during the regular season. Teams which make the playoffs may host up to 2 additional post-season games, depending upon their win-loss record relative to other teams. NFL football events would occur on weekends with occasional Monday evening and/or Thursday evening games. Weekend games can occur on either Saturday (typically only during pre-season and post-season) or Sunday (all season), with start times generally at 1:00 PM or 5:30 PM. Weekday games typically have a start time of 5:30 PM.

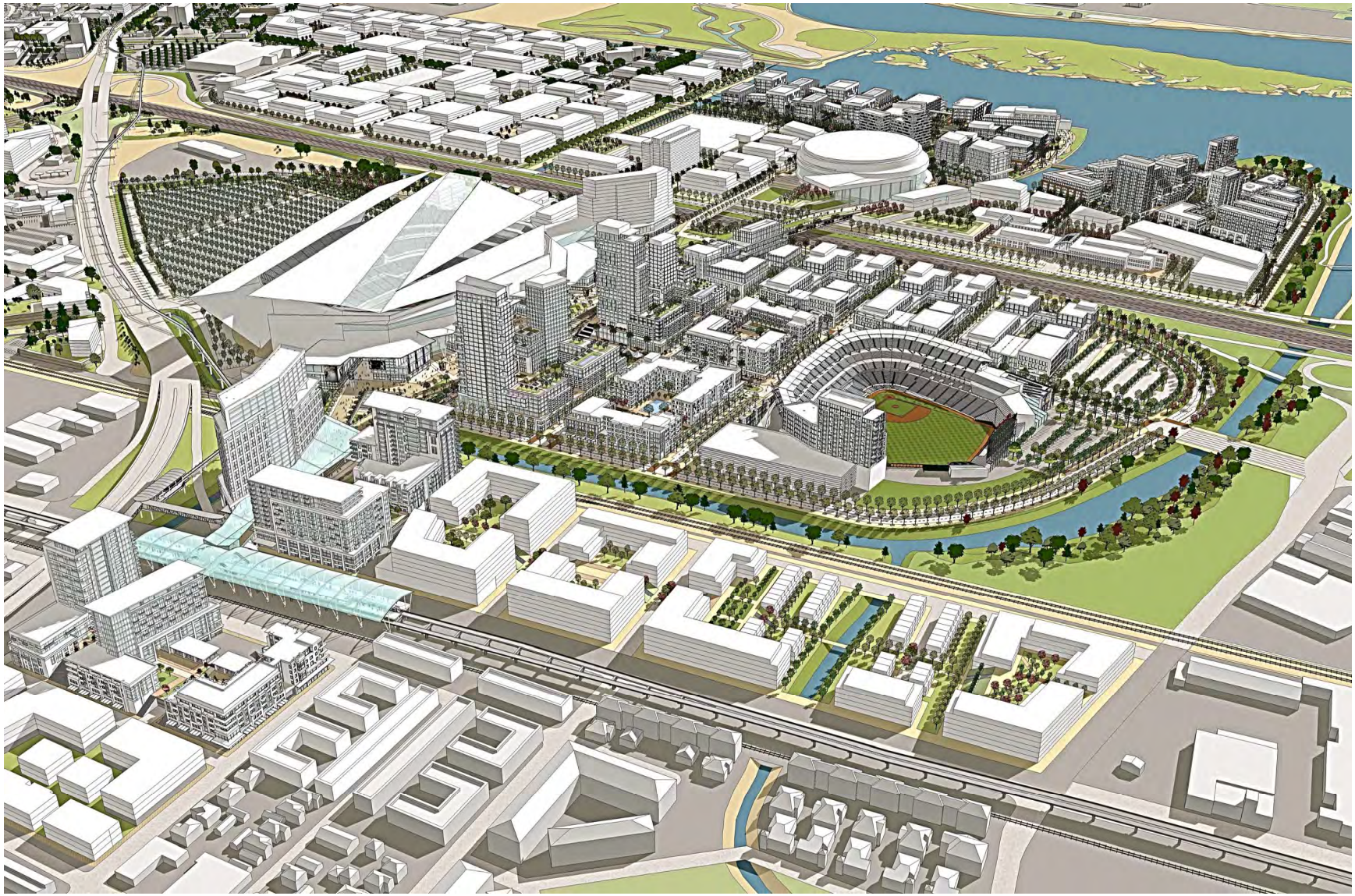
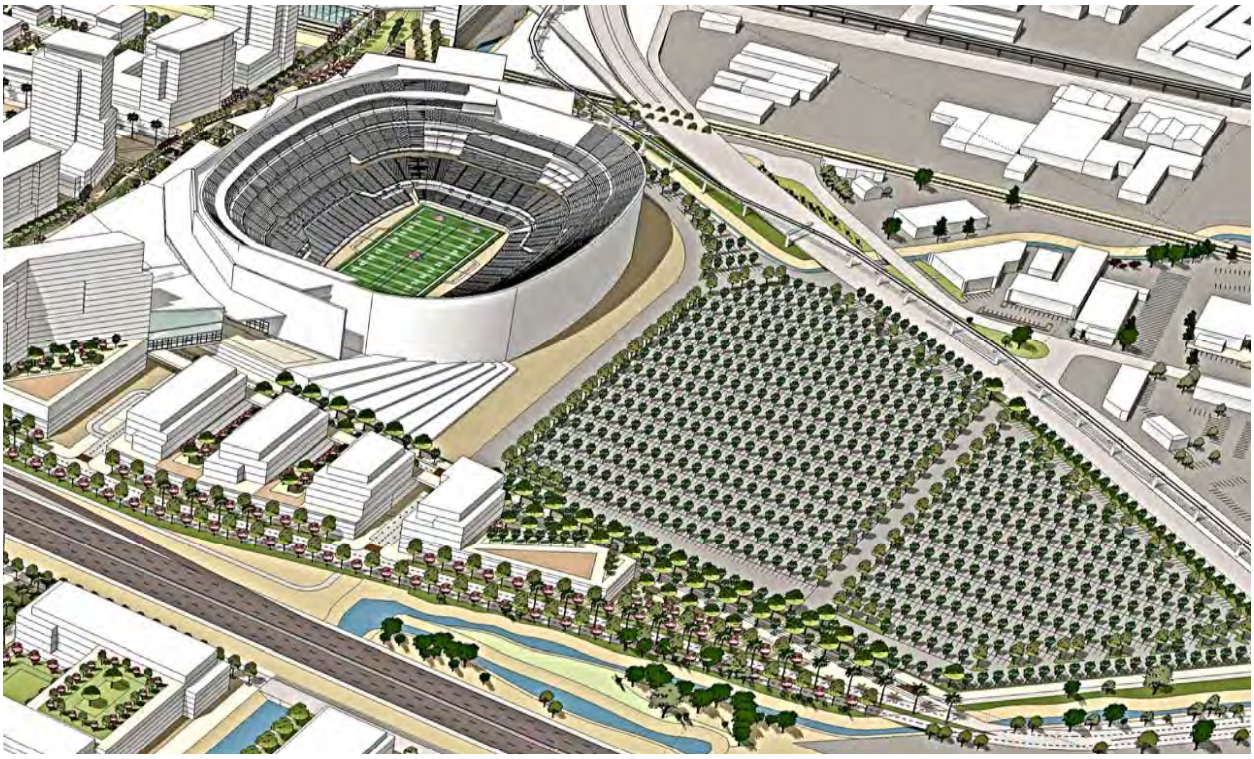


Figure 3-10
Coliseum Site

Source: JRDV Urban International



Concept Illustration, New Stadium

Concept Illustration, New Ballpark

Figure 3-11
Sports & Events Venue Districts

Source: JRDV Urban International

In addition to football events, use of the Stadium may range from incidental use of meeting room facilities within the main building to larger activities such as concerts and other sporting events that would use a significant amount of the available seating and event space. In addition to the 8 regular season and 2 pre-season NFL games, as many as 49 other non-NFL events per year are contemplated at the Stadium, as indicated in **Table 3-6**. There is also the likelihood that a new Stadium would be asked to host a Super Bowl game. The Super Bowl is considered an extraordinary event and would likely only occur approximately once every five to 10 years.

Table 3-6: Existing and Expected Stadium Use, Annually

	Existing Stadium Use			Expected Future Stadium Use		
	# of Events	**Average Attendance**	**Total Annual Attendance**	**# of Events**	**Average Attendance**	**Total Annual Attendance**
NFL Games (8 plus 2)	10	50,500	505,000	10	65,000	650,000
Large Events						
Concerts	1	55,000	55,000	2	60,000	120,000
Motor Sports	2	55,000	110,000	2	55,000	110,000
NCAA Football				2	70,000	140,000
Invitational Soccer				2	50,000	100,000
Other Events						
Concerts (smaller)	1	40,000	40,000	4	40,000	160,000
Motor Sports (smaller)				2	25,000	50,000
NCAA Soccer				3	22,500	67,500
Meetings	7	1,000	7,000	10	1,000	10,000
Other Sports (HS, NCAA)	1	3,500	3,500	10	6,000	60,000
Parking Lot Events	12	5,000	60,000	12	5,000	60,000
Total, Annual	**34**		**780,500**	**59**		**1,527,500**
Net Increase				**25 (74%)**		**747,000 (96%)**

The proposed stadium would have a permanent seating capacity of up to 68,000 seats and will be designed to expand to approximately 72,000 seats for special events.[5] The stadium structure would be

[5] An NFL Super Bowl game would be an example of a special event requiring additional seating.

approximately 1.8 to 2.2 million square feet in size, envisioned with a roof structure to baffle noise and provide protection form the weather. The preliminary design for the Stadium roof has a maximum height of 325 feet above the ground surface. The Stadium is expected to be designed, built and operated in such a manner as to achieve the comparable of a minimum LEED Certification rating of Silver as defined by the U.S. Green Building Council.

The ground level would include the playing field, locker rooms, main commissary, facilities for grounds keeping staff, operations (including management, security, and janitorial), truck docks, and facilities for various other support functions. The ground level will be constructed at approximately the existing site elevation (an average of 15 feet above sea level). The press as well as TV and/or radio broadcast personnel will have separate facilities. Other activity space within the Stadium will include the box office, a team store, JPA offices, and for-lease retail commercial space. Other facilities available during Stadium events will include restrooms, concession stands and merchandise stands. Food and alcoholic beverage sales could occur during any event. In addition, event related retail sales (i.e., team sportswear, programs, etc.) will also be allowed.

Parking for the Stadium will be accommodated in a variety of on-site parking facilities. On-site parking will be provided through a combination of surface lots, dedicated event parking garages, and shared parking facilities. These shared use garages will be used by commercial uses during the week days and by events on evenings and weekends when event demand is at its peak; residential and hotel parking will be dedicated to those uses alone, however. Event uses during the weekdays will rely on dedicated event parking, and the multiple modes of regional and local transit that serve the site. This district includes 3,240 surface parking spaces and 7,500 garage spaces. Many attendees participate in tailgating activities prior to the start of each game. Typically, approximately one-half of all ticket holders arrive well before the start of each home game and it is assumed (and encouraged) that the tailgate activities will continue with development of the new Stadium. Tailgating activities will be encouraged within the open surface parking lots, but will not be allowed within proposed parking structures.

The Oakland Raiders' corporate headquarters is located in the Harbor Bay Business Park in the City of Alameda. The headquarters facility, which includes practice fields, locker rooms, player meeting rooms, an auditorium, and corporate offices, would remain as the corporate office and would not be affected by the new Stadium.

MLB Ballpark

The proposed new outdoor Ballpark would be constructed on an approximately 12.3-acre site bounded on the east by the UP Railroad tracks, on the north by Damon Slough, and on the west by I-880 (see also Figure 3-11). The Ballpark is expected to be developed by the Oakland A's professional sports franchise on land owned by the City of Oakland and Alameda County. Like the Stadium, the Oakland-Alameda County Coliseum Authority would control the use of the Ballpark through a management agreement with a professional management association.

The Ballpark would be leased to the Oakland A's for playing its 81 home games during the MLB regular season[6] and potential post-season games,[7] and for other MLB events. Currently, baseball attendance at

[6] The MLB has a 6-month season from April through September, including 162 games. Each team plays ½ of their games (or 81 games) at home and the other ½ away. MLB baseball is played throughout the week; most weekday games are only played at night, while most weekend games are played during the day. Night games usually start at 7:00 PM. On those days that teams play their last game of a series before departing for another

the Coliseum averages approximately 21,000 fans per game. It is expected that with the new Ballfield venue and the additional attractions at the Coliseum District, average attendance will increase to approximately 30,000 fans per game, such that the Ballpark would see an annual attendance of approximately 2,520,000 fans per year (not including post-season play), for an annual increase of approximately 756,000 fans (or a 43% increase in attendance).

The proposed Ballpark would have a permanent seating capacity of up to 35,000 seats and will be designed to expand to approximately 39,000 seats for special occasions or large game day crowds. As a separate facility, the Ballpark will be design to provide a closer, more intimate fan experience during the game than is currently provided at the much larger existing Coliseum. The stadium structure would be approximately 1.0 to 1.2 million square feet in size, with no roof, and a maximum height at the top of the upper deck of seating of 126 feet above the ground surface. Light standards on top of the structure would reach a maximum height of 190 feet above the ground surface, similar in height to the existing light standards at the existing Coliseum. The Ballpark is expected to be designed, built and operated in such a manner as to achieve the comparable of a minimum LEED Certification rating of Silver.

Operation and scheduling use of the Ballpark would be restricted from having major events (including baseball games) on the same day as football games at the adjacent Stadium. Since no large events could occur simultaneously, parking for the Ballpark would be accommodated within the same on-site parking facilities as used by the Stadium including the 3,240 surface lot spaces and 7,500 dedicated event parking garage spaces.

Unlike the Raiders, the A's do not have a separate corporate headquarters or practice field, and instead will rely on the Ballfield for practice during the season. During spring practice, the team practices in Arizona.

NBA / Multi-purpose Event Arena

The proposed new indoor Arena would be constructed on an approximately 12.4-acre site on the west side of I-880, on a parcel currently owned and occupied by the Coliseum Lexus of Oakland and Everett Graphics. As part of the development of this new Arena site, these properties would be acquired and the businesses would be relocated to a suitable site elsewhere within the Business Park. The new Arena would be leased to the Golden State Warriors, a National Basketball Association (NBA) franchise, for playing home games during the NBA pre-season, regular season, and post-season.[8] All weekday and Saturday home games begin at 7:30 PM, and occasional Sunday home games begin at 6:00 PM.

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series the next day (i.e., gateway days), games are usually day games on Sundays, Mondays, Wednesdays and Thursdays. On Sundays, most games are day games starting at 1:00 PM, while some Sunday night games begin at 8:00 PM ET regardless of city they play in. About half of Saturday games are day games (1:00, 2:00 or 4:00 PM ET) and the other half are night games starting at 6:00 PM.

7 MLB post season includes a Wild Card Game (1), the Division Series (best of 5 games), the League Championship Series (best of 7 games) and the World Series (best of 7 games), with games irregularly alternating between home fields. Assuming a Wild Card berth and winning the World Series in a full best of 5 - best of 7 series, the maximum number of post season home games would be 11 games.

8 The NBA has an approximately 9 month season, with pre-season games beginning in early October and the regular season running from late October to mid-April. The post-season begins immediately thereafter, generally concluding in early June. The NBA season includes 82 game regular season games plus 8 pre-season games. Each team plays ½ of its 8 pre-season games, and 41 of its 82 regular season games at home. Other

In addition to basketball games, use of the Arena would include numerous other events (e.g., concerts, family entertainment shows, community events, trade shows, etc.) at a schedule similar to, but more frequent than currently occurs in the existing Oracle Arena. In addition to the 44 pre- and regular season (and potential post-season) NBA games, approximately 109 other non-NBA events per year are contemplated at the Arena, as indicated in **Table 3-7**, below.

Table 3-7: Existing and Expected Arena Use, Annually

	Existing Arena Attendance			Expected Future Arena Attendance		
	# of Events	**Average Attendance**	**Total Attendance**	**# of Events**	**Average Attendance**	**Total Attendance**
NBA Games (41 plus 4)	45	19,400 [1]	873,000	45	19,600	882,000
Concerts	23	19,000	437,000	28	19,000	532,000
Other Events						
Family Shows	31	13,000	403,000	35	13,000	455,000
NCAA Basketball	1	13,000	13,000	25	12,.500	312,500
Boxing	1	13,000	13,000	3	15,000	45,000
Trade Shows				4	10,000	40,000
Meetings				5	5,000	25,000
Misc. (rehearsals, etc.)	1	N/A		3	N/A	
Mtgs. / Clubs	3	1,000	3,000	6	1,000	6,000
Total, Annual	**105**		**1,742,000**	**154**		**2,297,500**
Net Increased Attendance, (% Increased Attendance)				**49 (47%)**		**555,500 (32%)**

1. NBA estimate, based on ticket sales. Actual attendance may be less

The proposed Arena would have a permanent seating capacity of up to 20,000 seats. The Arena structure would be approximately 850,000 square feet in size on a 210,000 square foot footprint, with a maximum height of 159 feet above the ground surface. The Arena is expected to be designed, built and operated in such a manner as to achieve the comparable of a minimum LEED Certification rating of Silver by the U.S. Green Building Council. Other activity space within the Arena will include a box office, a team store, JPA/team offices, and for-lease retail commercial space. Other facilities available during Arena events will include restrooms, concession stands and merchandise stands. Food and alcoholic beverage sales would occur during any event. In addition, event related retail sales (i.e., team sportswear, programs, etc.) will also be allowed.

games are “away’ games. Teams which make the playoffs may host up to 4 additional post-season series leading up to the NBA Finals. Each of these playoffs is a best of 7 series, and the most possible post-season homes games would be 16, assuming 4 home games per series.

To fully connect the new Arena to the other portions of the Sports District on the eastern side of I-880, a pedestrian (and potential future transit) concourse would extend over and across the freeway. The concourse, or bridge, would span the freeway and would connect the Arena to the internal Coliseum District, as well as to the Transit Hub at the existing Coliseum BART station (see discussion below).

Parking for the Arena will be accommodated in a combination of on-site and off-site parking facilities. The design of the Arena includes an internal 300,000 square foot parking garage that contains up to 800 parking spaces. Additionally, off-site parking will be provided through a combination of surface lots and shared parking facilities associated with the Coliseum, including the 3,240 surface parking spaces and 7,500 garage spaces. The pedestrian concourse will directly link these off-site parking spaces to the Arena and make parking on the opposite side of the freeway convenient to Arena patrons.

Intermodal Transit Hub

The adjacency of regional transit to the Coliseum District is one of site's key assets, and leveraging this transit asset is a key element of the Sports and Events District. The Project proposes to reconfigure the manner in which existing transit modes currently interact to serve the Coliseum District. Creating improved connections to transit is one of the primary elements of the Coliseum District's design and configuration.

Transit Hub

A newly built Intermodal Transit Hub is proposed to better link BART, the Oakland Airport Connector, Amtrak, AC Transit buses and a potential new streetcar connector. The Intermodal Transit Hub, a new building, is designed to facilitate interconnections, security, and legibility between each of these transit modes.

The existing BART station platform will not accommodate the full buildout of the proposed Coliseum District development. The current platform capacity accommodates approximately 1,900 persons at a time, well below what is needed to efficiently move up to 16,700 persons per hour, which is the expected transit ridership demand on game day peaks at the sports venues. At full Plan Buildout it is expected that transit demand may exceed 28,500 daily riders, which will make this one of the busiest stations in the BART system. The improved sports venues will attract significantly higher attendance, creating bigger peak demands, while the proposed surrounding development will increase daily commute demand.

The Project includes a comprehensive redevelopment of the existing BART station with new links it to an integrated Intermodal Transit Hub (see **Figure 3-12**). This Transit Hub will become the gateway to the Coliseum District and a critical part of its success. The following improvements to the Coliseum BART station are part of the proposed Project to enhance the Coliseum/Airport BART Station to provide a seamless and welcoming pedestrian connection to and from the BART Station including (but not limited to):

Figure 3-12
Coliseum BART Area Transit Hub

Source: JRDV Urban International

- A side platform located over San Leandro Street to increase station capacity. This would provide a second platform serving southbound passengers, instead of the single one shared by riders going in both directions. The side platform would extend an additional 25 feet from the existing station over San Leandro Street. To accommodate vertical circulation serving the side platform, San Leandro Street would need to be realigned approximately 17 feet to the west.
- Alternative capacity improvements could include an extension of the existing platform to the north (about 350 feet), or a side platform on the east side of the station if the Union Pacific right-of-way were to be acquired.
- San Leandro Street entrance and intermodal improvements.
- New fare gate arrays at the ground level concourse to improve passenger distribution and bring the current elevator into the paid area.
- New vertical circulation to improve passenger flows within the station.
- Construct at-street station improvements east of the station so both non-BART and BART patrons can cross between San Leandro Street and Snell Street (requires coordination with railroad for crossing railroad right-of-way).
- Construct the elevated concourse from the new stadiums to the BART Station toward the south end, or center of the BART platform and extend the concourse over the BART platform 200 to 300 feet to provide multiple vertical circulation opportunities between the BART platform and the elevated concourse.
- Provide a visual link between the elevated concourse and the street-level access so special event patrons will use both the concourse and the street level access to travel to and from BART. This is needed distribute riders more evenly across platform.
- An upper concourse with protective canopy that would connect directly to the elevated concourse (including fare gates at the upper concourse level) and extend along the BART platform to distribute passengers along the platform. The upper concourse may also further connect to the eastern side of the station.

It is anticipated that completion of the Transit Hub can increase the share of transit-based BART trips as compared to all Project-generated trips.

Pedestrian Concourse

The Project proposes to connect the Coliseum District (including the new Arena) to the improved Transit Hub via a new pedestrian concourse connection to be relocated along the 73rd Avenue right-of-way. This new pedestrian connection will be used as a concourse to the new Stadium, Ballpark and Arena, and to the surrounding Sports Entertainment Zone. The connector will also be a linear park that extends over I-880, providing a direct link from BART to the Bay (see **Figure 3-13**). This improved transit connection is also a central element of increasing transit use to the Sports and Event venues and for attracting necessary new ancillary development in the Sports District. The concourse will cover a total of 14.2 acres within the Coliseum District. The upper level of the concourse will be lined with entertainment and retail uses (see description of Sports-Related Entertainment District, below), and the interior levels of the concourse (i.e., the supporting structure) will serve as a parking garage.

Figure 3-13
Pedestrian Concourse

Sports-Related Entertainment District

The Project's proposed sports venues are integrated into an active urban center that contains retail, entertainment, arts and cultural uses, creating new opportunities for multi-use facilities that accommodate a much higher ratio of non-game events than is currently experienced. These new uses are intended to attract new commercial uses to an active retail entertainment place. The Sports-Related Entertainment District is expected to include as much as 225,000 square feet of retail/entertainment uses and two new hotels. The tenant mix of the Entertainment District has not been set, but is expected to include such uses as restaurants, bars and night-clubs, a bowling alley, potentially a movie theater, and other consumer goods retail (apparel and similar stores) that extend and enhance the experience of sports venue patrons (including non-sports events) by providing additional on-site activities and shopping opportunities (see **Figure 3-14**). The Entertainment District is located generally adjacent to and along the outside edges of the Stadium and the Ballpark and accessed directly via the new concourse. A 2.2 acre "Grand Plaza" lined with retail uses links the concourse from the new Stadium to the Ballpark.

A new hotel of 360 rooms is proposed adjacent to the new Intermodal Transit Hub (near the existing Coliseum BART station, and a second, approximately 200-room on-site hotel is integrated into the design of the new MLB Ballpark.

BART Adjacent Transit-Oriented District (TOD)

The approximately 24.7-acre area surrounding the Coliseum BART station is planned to be a moderate- to high-density residential community (see **Figure 3-15**). Portions of the new housing in this location will be moderate density housing (i.e., mid-rise, wood frame construction at densities of 85 to 90 units per net acre), especially in those portions of the TOD nearest to existing neighborhoods, whereas those portions of the TOD district closest to the ABRT station and with easy direct access to ABRT transit would be developed at even higher densities (as much as 155 to 120 units per net acre). The TOD will also benefit from having direct access to the Entertainment District developed along the adjacent Stadium/Ballpark concourse. New development along the west side of San Leandro Street will necessitate property acquisition and land assembly of the properties from 66th Avenue to Hegenberger Expressway, and the redevelopment of the Coliseum BART station surface parking lot. The overall development program for the Coliseum BART TOD includes:

- Assembled land along the west side of San Leandro Street will be redeveloped in a "super-block" development pattern of low-rise multi-family and townhome products. To the north nearest to 66th Avenue, residential product-types will be primarily townhomes of 2- to 4-stories in height, similar in scale and design to the adjacent Lion Creek Crossings development on the opposite, east side of San Leandro Street. Building heights would increase as they get closer to the BART station, and the most southerly superblock would up to 20,000 square feet of ground-floor, neighborhood-serving retail space. In total, this area would accommodate as many as 1,050 new residential units. Each residential unit would have a single associated parking space provided within on-site secured parking garages.
- On the east side of San Leandro Street the existing BART surface parking lot will be redeveloped as a TOD-style residential development. Building types nearest to the existing residential neighborhood across 70th Avenue would include low- to mid-rise (2-4 story) multi-family residential buildings designed to complement the setting. Between 71st Avenue and Hegenberger Road, the buildings would increase in height and density with mid-rise (4 to 5 story) multi-family buildings, and high-rise (6-9 story) residential towers would be nearest to the BART station. In total, this area would accommodate as many as 740 new residential units. Each residential unit would have a single associated parking space provided within on-site, podium-style parking garages.

Figure 3-14
Sports-Related Entertainment District

Source: JRDV Urban International

Figure 3-15
BART-Adjacent Transit-Oriented District

Source: JRDV Urban International

- Adjacent to the BART station on the west side of San Leandro Street would be a complex of inter-related buildings designed to inter-connect with the station (redeveloped as an Intermodal Transit Hub) and the pedestrian concourse. Land uses included within this transit-connected area include a 320-room high-rise hotel, approximately 40,000 square feet of neighborhood-serving and convenience retail, and up to 500 residential units within residential tower structures. This area would also include structured parking garages to serve the new development.

The BART-Adjacent TOD is intended to provide a transition from the lower densities of the surrounding neighborhoods to the high-density uses internal to the Coliseum District, and a connection from the surrounding neighborhoods through the transit hub and on to the Coliseum District's retail, entertainment and sports venue facilities.

Mixed Use Residential Sports Neighborhood

Within the central portion of the Coliseum District, north of the new Stadium and concourse and south of the new Ballpark, is a proposed new mixed-use residential neighborhood (see **Figure 3-16**). This mixed-use neighborhood is intended to appeal to younger, active people who desire to live in a vibrant, urban setting adjacent to the sports and entertainment uses within Coliseum City. Vehicle access to the Sports Neighborhood is via network of new surface streets designed in a close grid pattern. Pedestrian access to the Sports Neighborhood is proposed via a large staircase/escalator/elevator that would lead from the Concourse and the NFL Stadium down to a proposed 2.2-acre Grand Plaza – a pedestrian street lined with retail uses - that ultimately leads to the MLB Ballpark. Vehicular access across the Grand Plaza is intended to be open to traffic during normal operating hours, but cross streets could be temporarily closed during large events.

Lining the Grand Plaza on either side are mid-rise and high-rise residential towers (up to a maximum of 370 feet tall), that contain as many as 1,570 new apartment-styled housing units. Wrapping the ground floor of each of these new residential towers would be as much as 120,000 square feet of neighborhood-serving retail uses, potentially including a grocery store, pharmacy and other essential services. Parking for this area would be included in podium-style parking garages incorporated into the building's lower levels.

Science and Technology District

The Coliseum District includes an extension of the science and technology district known as the "Innovation Gateway", most of which is located on the west side of I-880 (see description of Plan Buildout, below). Within the Coliseum District, the extension of science and technology land uses consists of a row of technology and office use buildings fronting onto the east side of I-800, between the freeway and the new sports venues. This nearly 24-acre district contains no residential uses, but instead is devoted to job-generating technology, office and a small amount of retail use. The Coliseum District's portion of the Science and Technology District includes approximately 1.5 million square feet of technology and office space, 30,000 square feet of retail use, and on-site parking within podium structured garages for up to 3,360 parking spaces.

Additionally, this District also includes a site for a new 360-room hotel, which is linked directly to the NFL Stadium and the Concourse. The hotel includes an enclosed parking garage.

Figure 3-16
Mixed-Use Residential Sports Neighborhood

Source: JRDV Urban International

Open Space and Site Drainage

The proposed Project includes a total of 26.5 acres of parks and open space within the Coliseum District, (see **Figure 3-17**) consisting of:

- the 2.2-acre "Grand Plaza" pedestrian streetscape as included as part of the Mixed Use Sports Neighborhood,
- the 14.2-acre pedestrian/potential future transit Concourse, which includes a linear park and pedestrian ways as more fully described above,
- a 1.9- acre park next to the MLB Ballpark; and
- an 8.2-acre storm drainage and open space improvement along the easterly and northerly boundaries of the Coliseum District (near the Amtrak railroad tracks and 66th Avenue).

Ballpark Park

The 1.9 acre park would be located beyond the Ballpark outfield along the edge of Damon Slough. This park connects to the surrounding trail system and includes picnic facilities. The site would be designed to enable views into the Ballpark. This recreational area would be BART-accessible and would provide a low-cost way to enjoy games and encourage residents and families to enjoy the outdoor areas provided by the new development.

Damon Slough and Elmhurst Creek Improvements

Damon Slough is primarily a storm drain channel which conveys flood flows and runoff through a drainage channel located along the Amtrak railroad tracks and along 66th Avenue, and on to the San Leandro Bay. The Slough is located in the existing Coliseum parking lot and receives storm-water runoff from the paved parking area and adjacent industrial facilities, and currently provides little to no habitat or aesthetic value.

Similar to Damon Slough, Elmhurst Creek is also a storm drain facility that conveys flood flows and runoff through a drainage channel located within the southerly portion of the existing Coliseum parking lot, and on to the San Leandro Bay. Elmhurst Creek receives storm-water runoff from the paved parking area and up-stream industrial facilities, and currently provides little to no habitat or aesthetic value.

The proposed Project includes several options for the treatment and disposition of Damon Slough and Elmhurst Creek. These options include changes to the 5.8-acre piece of land located between Damon Slough, 66th Avenue, the railroad tracks, and the easternmost Coliseum Way bridge. This area consists of two parcels and is also known as the "Cruise America" site (located at 796 66th Avenue).

- Creeks Option A:
  - Elmhurst Creek – No change to Elmhurst Creek. In this option, the alignment and condition of Elmhurst will Creek will remain unchanged, whereas the areas surrounding it are upgraded with the new Coliseum complex and parking areas. No new bridges will span the Creek, so all circulation must use existing crossings at Coliseum Way.
  - Damon Slough – Damon Slough would be the subject of a creek restoration effort intended to enhance and increase the habitat and storm water filtration value of this segment of the creek. The design parameters of the creek restoration effort would include retaining the overall flow capacity (volume) of the primary creek channel to maintain its flood control function, establishing a low-flow channel within which stormwater runoff would be conveyed to the Bay,

and creating an enhanced and widened tidal slough/mud flat habitat between the low-flow and high-flow channels.

- "Cruise America" site (796 66th Avenue) – Removal of paving and buildings from the property (including remediation of hazardous soil contamination), then restored to a more natural condition by seeding this site with common, upland coastal scrub plant species similar to those established in selected locations along the banks of Damon Slough. The site would be visible from the proposed Ballpark and would provide aesthetic value to the area as compared to the current parking lot.

- Creeks Option B:
  - Elmhurst Creek – Elmhurst Creek stays in its current alignment but with pedestrian and vehicular bridges constructed to provide access between the parking areas and the proposed Coliseum. These bridges would be "clear spans" that do not have any structures resting in the water or the creek shoreline. Aesthetic and possibly habitat enhancements will also occur. Permitting requirements for this alternative may require an expansion of the creek width.
  - Damon Slough – Same as Option A, plus additional upland restoration of riparian habitat beyond the tidal slough to create a more functional habitat area, fenced to prevent public access.
  - "Cruise America" site – Same as Option A
- Creeks Option C (preferred option, see **Figure 3-18**):
  - Elmhurst Creek – The preferred option is to realign Elmhurst Creek far enough to the south to provide clearance for construction of the new Stadium. The preferred alignment for Elmhurst Creek would be capture the creek within an underground culvert at the point where it enters into the Coliseum District from a culvert under Hegenberger Road, and to continue the creek within a new culvert following along or within the Hegenberger Road right-of-way. The underground culvert would then daylight on the east side of I-880 near the confluence of several other local drainages near the Hegenberger Road interchange. This option would enable the flood control function of Elmhurst Creek to continue to operate as it currently exists, with flood flow volumes entering San Leandro Bay at the current Elmhurst Creek outfall. The tidal ebbs and flows in Elmhurst Creek would be limited at the existing I-880 culvert.
  - Damon Slough – Same as Option A.
  - "Cruise America" site – The 8-acre property at 796 66th Avenue will be transformed into a tidal wetland, fenced off from public access, designed to be self-sustaining in hydrological and habitat function and –if possible – visually appealing when viewed from the Ballpark. At a 2:1 ratio, approximately 2.4 acres of the new wetland will serve as mitigation for the removal of 1,500 feet of Elmhurst Creek.

It is recognized that Option B and Option C (the preferred option) will likely require obtaining numerous subsequent permits (City Creek Protection permit, US Army Corps of Engineers permits, California Fish and Wildlife streambed alteration agreement, etc.). To the extent that these subsequent permits can be obtained, then the preferred option becomes an integral component of the proposed Project. However, if these subsequent permits cannot be obtained through reasonable efforts, then Option A above is intended to provide a choice with a no-impact option, to enable ongoing implementation of the overall Project.

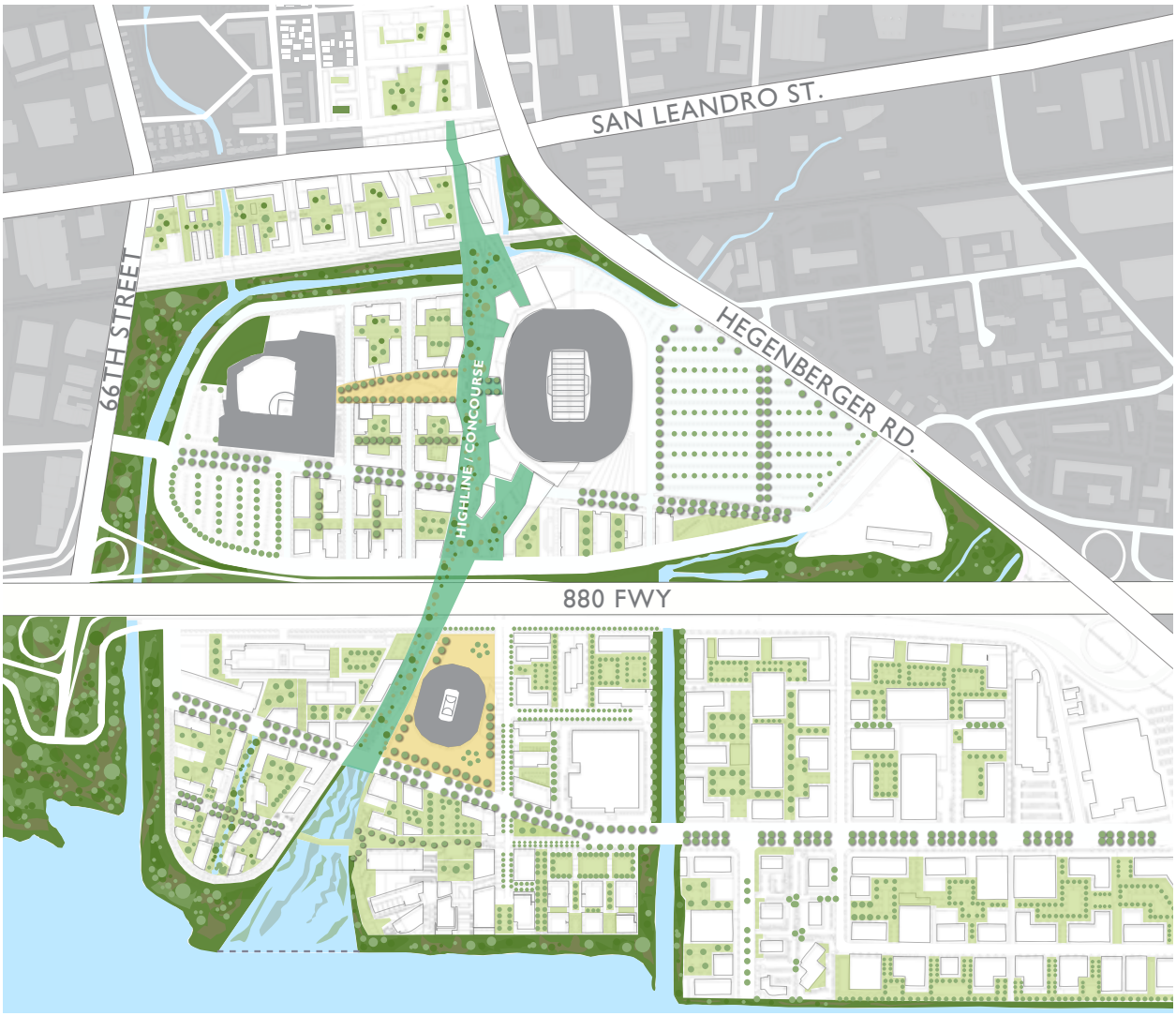

Figure 3-17
Planned Open Space Improvements

Source: JRDV Urban, International

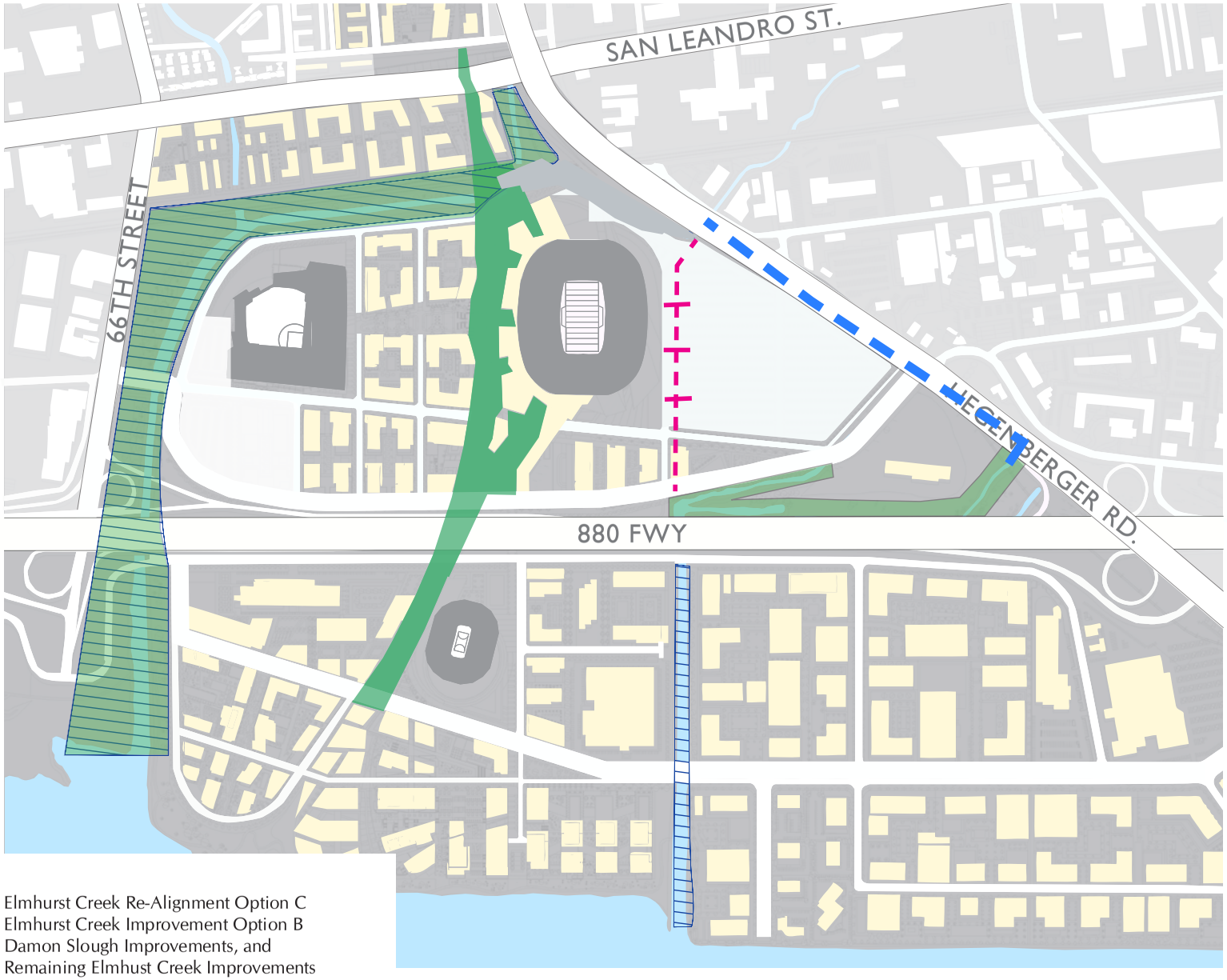

Figure 3-18
Damon Slough & Elmhurst Creek Preferred Improvement Option

Source: JRDV Urban International, BKF Engineers

Transportation Improvements

Vehicle Circulation

The proposed Project includes an internal network of new and improved streets, as well as off-site street and intersection improvements needed to provide adequate access to the Coliseum District under large event conditions (see **Figure 3-19**). These street improvements include:

- Internal Loop Road. The Project proposes completion of an internal loop road around the Coliseum District, connecting Baldwin Street at the east with Hegenberger Road at the west. The Loop Road consists of a continuation of existing Coliseum Way, which enters the Coliseum District at Hegenberger Road. Instead of terminating at 66th Avenue, the new Loop Road would travel around the Stadium site, through the High-Technology District, around the Ballpark site and the re-connects under Hegenberger Road at Baldwin Road. The Loop Road would generally have a five lane cross-section on the west side of the District, reduced to a two-lane cross-section around the Ballpark, and then accommodate three lanes as it passes under the Hegenberger Road overpass at Baldwin Road. The Loop Road would include widening existing Baldwin Road to a 3-lane (36-foot wide) travel way. The Loop Road facilitates two-way circulation around the perimeter of the District so that vehicle traffic can be distributed to the local streets within the District, and enables select streets within the District to be closed for special events. The Loop Road also serves to separate local traffic from freeway-destined traffic.
- Coliseum Way Separation and Signal Improvements. Currently, Coliseum Way provides two-directional traffic flow from Hegenberger Road to the Coliseum parking lot, terminating southbound traffic flow at Elmhurst Creek. It continues northbound from Elmhurst Creek as a one-way north-bound street and serves as the northbound off-ramp from I-880, connecting directly to 66th Avenue. To construct the proposed new two-directional Loop Road, Coliseum Way will be split at the point where it currently transitions form 1-way to 2-way. The New Loop Road will be designed as a continuation of the 2-way segment, and Coliseum Way will be retained to facilitate vehicle flow to the 66th Avenue interchange with I-880. Signalized intersection controls and a modify intersection layout at 66th Avenue will facilitate vehicle and pedestrian flows.
- Secondary North-South Street. The Project proposes construction of a new secondary street (shown as E Street), providing a secondary circulation road through the Coliseum District so that vehicle traffic can be distributed to the local streets. The Secondary North-South Street would include 3 lanes of traffic (one in each direction and a median/left-turn lane) that serves on-street parking and site circulation. The new North-South Street would include a replacement of the existing the Coliseum Way overcrossing of Damon Slough with a new clear-span bridge crossing aligned with E Street. The new bridge would include 6 travel lanes to adequately convey event-based trips to the Loop Road and the North-South Road, and would include provisions for bike lanes and sidewalks on both sides to better accommodate the multi-modal facilities serving the Coliseum District.
- Internal Grid. Internal to the Coliseum District, the Project proposes to construct a new grid of 2-lane streets that intersect the Loop Road and the North-South Street (shown as A Street, B Street, C Street, and D Street). These internal grid streets would provide access to the individual development sites internal to the Coliseum District, and would provide on-street parking and access to structured parking facilities.

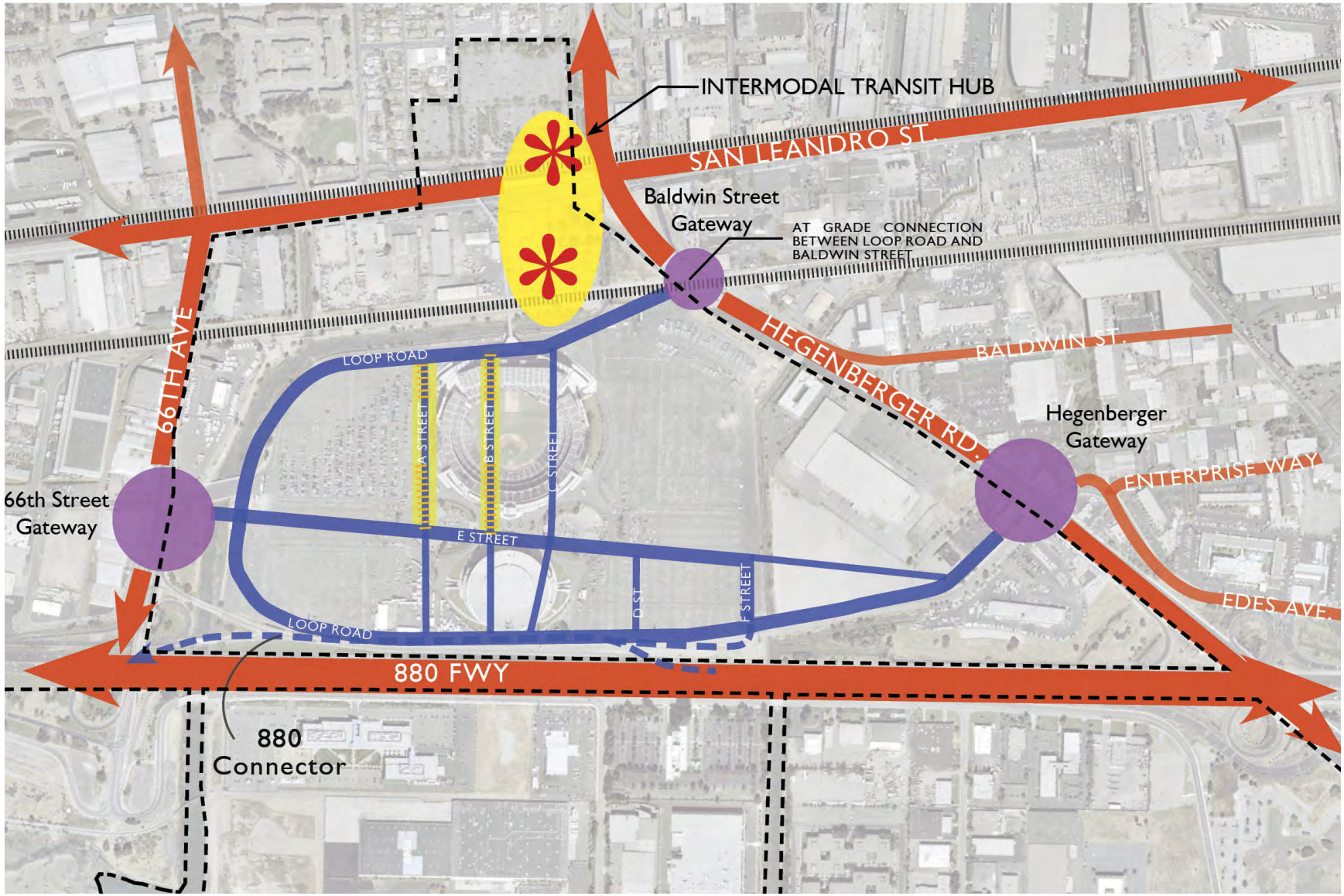

Figure 3-19
Coliseum Site: Vehicle Circulation

Source: JRDV Urban, International, with Fehr & Peers

- On-Site Signal Controls. The Project would provide signalized intersection controls to facilitate vehicle and pedestrian flows. Signals should be installed on E Street at the two Loop Road intersections and at A Street, B Street, C Street, and D Street; on the Loop Road along the west side of the Plan Area at A Street and C Street; at 66th Avenue at I-880 Northbound off-ramp; and at 66th Avenue at the I-880 southbound off-ramp. The signal controls would serve to disperse vehicle traffic equally across the local streets so that no single street is overburdened with vehicle traffic.

Pedestrian Circulation

Pedestrian circulation within the Coliseum District is provided at two separate levels. The upper level is the Pedestrian Concourse (or promenade) that replaces the existing pedestrian bridge connecting the BART and Amtrak stations to the Coliseum. The new Pedestrian Concourse will start at the Coliseum BART station, continue past the Coliseum to serve the Ballpark and the surrounding Sports Entertainment Zone, and will ultimately be extended as a new linear parkway that extends over I-880, providing a direct link from BART to the Bay.

The lower level pedestrian network consists of a gridded network of streets with wide sidewalks (8-foot pedestrian clear zone within a 15-foot sidewalk realm on both sides of streets) providing pedestrian inter-connectivity throughout the District. The sidewalk network is to include pedestrian facilities and amenities (such as street furniture, café seating, landscaping, lighting, as well as the door zone for parked vehicles and for building access) that create a safe and aesthetically pleasing environment that encourages walking and accommodates high levels of pedestrian activity.

In the center of the Coliseum District, central to the new Stadium, Ballpark and Sports Neighborhood District, is a 2.2-acre Grand Plaza, a pedestrian-only street lined with retail uses. Vehicular access across the Grand Plaza is intended to be open to traffic during normal operating hours, but cross streets could be temporarily closed during large events. The Grand Plaza links the upper level Concourse and lower level sidewalks via a large staircase with possible escalator or elevator connections. Multiple pedestrian connections between the Concourse and the lower, ground level are proposed to better facilitate pedestrian connections for the Coliseum District to the transit facilities.

Infrastructure Improvements

Within Sub-Area A, the existing 115 kV overhead high tension electrical wires and supporting structures will be temporarily relocated to an alignment roughly parallel to the easterly leg of Damon Slough, to enable construction of the new Stadium (see **Figure 3-20**). In the long term, this high tension electrical line is planned to be placed underground, preferably within the shortest run through the Coliseum District parallel to I-880.

In order to provide water, sewer and storm drainage service to the new development, new local utility service lines would be constructed throughout the Coliseum District. The local sewer lines would collect to one or two primary on-site mains, which would each connect to the EMBUD South Interceptor sewer line, which would remain in its current location (as also shown on Figure 3-20). The EBMUD South Interceptor easement would remain as is, and the easement would be within the right-of-way of the new north-south arterial roadway internal to the Coliseum District.

Major Water and Sewer Lines, to Remain

PG&E Overhead Electrical Line Relocation

Figure 3-20
Coliseum Site: Major Infrastructure Improvement Options

Parking and Transit Mode Split

Proposed parking supply provided within the Coliseum District is based on the projected parking demand for each of the proposed land uses, as well as current assumptions regarding transit-modes to be used by fans and future residents and workers. On-site parking will be provided through a combination of surface lots, dedicated event parking garages, and shared parking facilities. The parking strategy inherent in the Project assumes a substantial amount of shared parking facilities. For example, the parking that is designed to accommodate regular weekday workers at the Science and Technology District is shared (or used by) patrons attending larger events during the weekends. Parking demand associated with future residential development and on-site hotels will be accommodated within parking facilities dedicated to those uses alone. Event uses during the weekdays will rely on dedicated event parking, and the multiple modes of regional and local transit that serve the District.

The current use of regional transit opportunities to the Coliseum District accounts for approximately 25 to 30 percent of all trips during weekend sports and other events, and 30 to 35 percent of all trips during weekday evening sports and other events (see Chapter 4.10 for additional details regarding transit usage). The immediate availability of existing transit facilities (i.e., the existing BART station as currently configured, the Amtrak rail service and AC Transit bus service) indicates that the mode split for all future trips generated by land uses within the Coliseum District will be as high as 32 percent. In other words, all future trips associated with new development within the Coliseum District, given current transit access and availability is expected to be split between 32% transit ridership and 68% auto trips. This mode split, multiplied by the total trip demand associated with each land use, defines the total number of vehicle trips expected at the District and the parking demand associated with those trips.

In total, the Coliseum District includes 4,330 surface parking spaces and as many as 13,840 parking spaces within parking garages. **Table 3-8** defines the on-site parking supply provided at the Coliseum District.

Table 3-8: Proposed Parking Spaces, by Location

	Structured Spaces	Surface Spaces	Total Parking Spaces
Concourse Parking Garages, east and west	4,500		4,500
Stadium Lot – south of Stadium		3,060	3,060
Ballpark Garage	1,000		1,000
North Ballpark Lots		520	520
Arena Garage	800		800
Science and Technology District (total of 6 podium structures and 2 surface lots)	2,275	750	3,050
Sports Neighborhood (podium parking structures below residential)	2,025		2,025
Coliseum BART TOD (podium parking structures below residential and hotel)	2,140		2,140
San Leandro Street Residential (podium parking structures below residential)	1,100		1,000
Total	**13,840**	**4,330**	**18,170**

Coliseum District Buildout Assumptions

Non-Residential Space

Table 3-9 summarizes the total non-residential development as proposed within the Coliseum District. New development within the Coliseum District will include:

- a new Stadium of approximately 2.2 million square feet in size, with a seating capacity of 72,000 attendees,
- a new Ballpark of approximately 1.2 million square feet in size, with a seating capacity of 39,000 attendees,
- A new Arena of approximately 850,000 square feet in size, with a seating capacity of 20,000 attendees,
- three new hotels with a total room count of 875 rooms,
- up to 525,000 square feet of new event-based retail space, split between 225,000 square feet on the Concourse area adjacent to the new Stadium, and 300,000 square feet at the new Area site on the westerly side of I-880,
- approximately 190,000 square feet of neighborhood-serving and convenience retail space located primarily within ground-floor locations within the BART-Adjacent TOD, the Sports Neighborhood and the Science and Technology District, and
- up to 1.5 million square feet of new science and technology space (primarily office and R&D-type uses) within the Science and Technology District.

Table 3-9: Non-Residential Development Buildout of Coliseum District, by Land Use Type (building square feet)

Land Use Type:	Sports Venue District [1]	Sports Entertainment District	BART-Adjacent TOD District	Sports Neighborhood District	Science & Tech. District	Open Space	Total
Total Acres	71.1	14.2	24.7	11.9	23.9	8.3	154.2 acres
Stadium:							
seats	72,000						
square feet	2,200,000						
Ballfield:							
seats	39,000						
square feet	1,200,000						
Arena:							
seats	20,000						
square feet	850,000						
Hotel:	360	195	320				875
rooms	250,300	138,200	210,000				rooms
square feet							598,500
Event-Based Retail		225,000					225,000
Neighborhood Retail			40,000	120,000	30,000		190,000
Science and Tech./ Office Mix					1,500,000		1,500,000
Government/ Utility			13,000				13,000
Total	3 Sports Venues + 250,300	363,200	263,000	120,000	1,530,000	open space	3 Sports Venues + 2,526,500

Notes:

Sports Venue District includes the new Arena site on the west side of I-880

Residential Development

Table 3-10 summarizes the total residential development as proposed within the Coliseum District. New residential development will include as many as:

- 340 new residential units in low- to mid-rise townhome-types buildings, primarily along San Leandro Street from 66th Avenue southward, and
- as many as 3,660 new residential units in high-rise residential towers located both within the BART-Adjacent Transit-Oriented Development District and within the centrally located Sports Neighborhood District.

This could result in a total development of up to 4,000 new residential units, providing housing for up to 7,386 new residents.

Table 3-10: Residential Development Buildout – Coliseum District

Land Use Type:	Sports Venue District	Sports Entertain-ment District	BART-Adjacent TOD District	Sports Neigh. District	Science & Tech. District	Open Space	Total
Total Acres	71.1	14.2	24.7	11.9	23.9	8.3	154.2 acres
Acres in Residential Use	1		24.7	9.7			35.4
Mid-Rise (acres)			20.3				20.3
Units			1,786				1,786
Avg. Density (units/acre)			88 du/ac				
Population			3,771				3,771
High Rise (acres)	1		4.4	9.7			15.1
Units	140		504	1,570			2,214
Avg. Density (units/acre)	140 du/ac		115 du/ac	162 du/ac			
Population	230		823	2,562			3,615
Total Units	**140**	**0**	**2,290**	**1,570**	**0**	**0**	**4,000**
Total Population	**230**		**4,594**	**2,562**			**7,386**

Total Net New Development

All of the new development planned within the Coliseum District represents new, private redevelopment of an existing developed site which currently contains the existing Coliseum and Arena and their associated surface parking lots, a number of small businesses along San Leandro Street and Hegenberger Road, and the existing Coliseum BART station and its associated surface parking lots. The Project-specific analysis presented in this EIR is therefore representative of the overall net new development that would occur within the District. **Table 3-11** presents a summary of this net new development.

This net change in development within the Coliseum District would include construction of 47,400 net new sports/events-related seats; 875 net new hotel rooms; 4,000 net new (all new) residential units; and approximately 1,519,000 square feet of net new non-residential building space.

This net increase in development potential has been converted to net new vehicle trips as the means by which the Specific Plan's "Trip Budget" has been calculated. The Trip Budget defines the maximum number of vehicles which can enter or exit the Coliseum District during the regular weekday PM peak hour period, but not including those trips generated by sports or other events at each of the three new venues which are considered "special trip generators" and accounted for separately within the Specific Plan and this EIR. The Trip Budget is used as a proxy for the number of dwelling units or square feet that

can be developed within the Coliseum District. The maximum development capacity of the Specific Plan is achieved when all of the vehicle trips have been used.

Table 3-11: Net Change in Development, Coliseum District

	Existing	Removed	Added	Buildout	Net Change
Stadium (seats)	63,000	(63,000)	72,000	72,000	9,000
Ballfield (seats)	see above	see above	38,000	38,000	38,000
Arena (seats)	19,600	(19,600)	20,000	20,000	400
Hotel (rooms)	0	NA	875	875	875
Event-Based Retail (sf)	0	NA	225,000	225,000	225,000
Neighborhood Retail (sf)	6,950	(6,950)	190.000	190,000	183,050
Auto-Related Retail (sf)	89,000	(89,000)	0	0	(89,000)
Science & Tech/ Off. Mix (sf)	0	NA	1,500,126	1,500,126	1,500,126
Office (sf)	82,500	(82,500)	0	0	(82,500)
Light Industry (sf)	147,600	(147,600)	0	0	(147,600)
Government/Utility (sf)	75,300	(62,400)	0	12,900	(62,400)
Institutional (sf)	7,750	(7,750)	0	0	(7,750)
Residential (units)	0	NA	4,000	4,000	4,000
Event Seats:	82,600	-82,600	111,000	111,000	47,400
Hotel Rooms:	0	NA	875	875	875
Non-Res Building Space:	409,100	-396,200	1,915,126	1,928,026	1,518,926
Residential Units:	0	NA	4,000	4,000	4,000

Population and Employment

New development within the Coliseum District will result in a substantial increase in the on-site population and employment base of the area. As shown in **Table 3-12**, the residential population will increase by approximately as a result of the new housing units, and on-site employment will increase by as much as employees.

Table 3-12: Net Change in On-Site Jobs and Population, Coliseum District

	Existing	Buildout	Net Change
Employment			
Sports Venue-related jobs	2,350 [1]	3,545 [2]	1,195
Hotel jobs		740	740
Event-Based Retail jobs	0	550	550
Retail jobs	34	465	431
Auto-Related Retail jobs	46	0	-46
Science & Tech/ Off. Mix jobs		4,550	4,550
Office jobs	238	0	-238
Light Industrial jobs	232	0	-232
Government/Utility jobs	12	20	8
Institutional jobs	8	0	-8
Total Jobs	**2,920**	**9,870**	**6,950**
Population			
Mid-rise residential buildings	0	3,770	3,770
High Rise residential buildings	0	3,615	3,615
Total Residential Population:	0	7,385	7,385
Total Employed Residents:	0	5,122	5,122

Notes:

1. Actual full-time and part time employment as reported by U.S. Dept. of Commerce Census Bureau and California Employment Development Department (EDD). Accounts for event-based employment, as well as on-site employment by concessionaires, 188 full time staff for management and operations of facilities, and Oakland A's baseball organization personnel. Does not include sports teams' players. Full-time equivalent (FTE) = 1,099 jobs.
2. Total full-time and part time employment. Full-time equivalent = 1,638 jobs.

Source: HEG, 2014

Definition of the CEQA Project: Plan Buildout

In addition to the development program for the Coliseum District as defined and described above, the Specific Plan's Buildout assumptions include development and redevelopment throughout the Project Area, including the remainder of Sub-Area B as well as Sub-Areas C, D and E. The development program analyzed in this EIR for future buildout of those portions of the Specific Plan Area outside of the Coliseum District includes the non-sports venue portion of Sub-Area B, as well as Sub-Areas C, D and E) is commensurate with the level of detail currently available. For example, the Coliseum City Master Plan illustrates the potential for creating a small inlet to the San Leandro Bay by grading and dredging out a portion of Sub-Area B. How this grading and dredging operation would be conducted, the permits and approvals necessary and other details of its implementation have not been formulated to the extent that specific, detailed environmental effects can be analyzed. Therefore, this EIR provides an assessment of the potential environmental effects related to that particular Bay inlet concept that corresponds to the level of detail available. Many of the development plans and concepts presented in the Coliseum City Master Plan for development in Sub-Areas B, C, D and E are of a similar level of detail. For the

Specific Plan Buildout, this EIR provides a level of review and analysis commensurate with the level of detail included in the Coliseum City Master Plan.

For purposes of this environmental review, Plan Buildout is also expected to occur by year 2035.

Description of Sub-Are Buildout

Sub-Area B: Waterfront / Science and Technology District

With the exception of three significant buildings that are located within Sub-Area B, the Specific Plan Buildout anticipates substantial private land assembly and redevelopment opportunities through this sub-area. The three existing buildings that are anticipated to remain as part of the buildout scenario include the Zhone Technologies buildings at 7195 Oakport Street, the Oakland Tribune office tower at 7677 Oakport Street, and the Rainin Instruments building at 7500 Edgewater Drive. Other than these three buildings, the remainder of Sub-Area B is expected to undergo substantial redevelopment by year 2035 to accommodate new development as contemplated under Specific Plan buildout.

Sub-Area B is proposed to include two different types of new urban districts, as well as open space and habitat, transportation and infrastructure improvements (see **Figure 3-21**). The extension of the Coliseum District into Sub-Area B for the new Arena is described in detail above under the Coliseum District development program. The remainder of the Specific Plan Buildout within Sub-Area B is further described below.

Mixed Use Waterfront Residential District

The Specific Plan Buildout includes plans to create a more publicly accessible waterfront along the San Leandro Bay as a catalyst toward redevelopment of this area. The waterfront is planned as an amenity for the new Arena as well as for the city as a whole. Pedestrian paths and actively used park spaces will line the waterfront, becoming integrated into a new residential and mixed-use community that complements adjacent Science and Technology District. An approximately 10-acre Waterfront Residential District is proposed to include approximately 1,750 new residential units within a variety of multi-family mid- and high-rise buildings. The Waterfront Residential District would be supplemented with approximately 59,000 square feet of neighborhood-serving retail uses. All parking within this District would be provided with structured parking garages accommodating a single parking space per unit.

The majority of a Waterfront Residential District is proposed to be constructed on what is currently the approximately 8-acre Edgewater Seasonal Wetland. This site was historically a tidal salt marsh and mudflat that was previously filled and developed. In the year 2000, this site was designated as a wetlands mitigation site for the Oakland Airport Runway 11-29 Rehabilitation Project. That mitigation program included recreating and enhancing wetland features on the site. The restored Edgewater Seasonal Wetland now holds water six or seven months of the year and is used by migratory birds along the Pacific Flyway. The soils are saline because as a result of Bay dredge that filled the site, but design of the restoration allow for fresh water to pond on the site, diluting the salts in the soils. As the ponded area dries out in the spring, the vegetation species change as do the wildlife species using this wetland. The proposed Specific Plan Buildout would eliminate this approximately 9.0 acres of restored seasonal wetland and surrounding upland, replacing it with new public outdoor space along Damon Slough and with the proposed Waterfront Residential District. The acreage would be replaced in Sub-Area E (see “Habitat Restoration” description below).

Figure 3-21
Plan Buildout, Sub-Area B

Source: JRDV Urban, International

Science and Technology District

The majority of Sub-Area B's buildout is planned to provide an important institutional anchor location within Oakland, and potential business tenants may be local or international institutions looking for a strategic location to take advantage of the Bay Area's "innovation economy". These institutional research anchors will form a nucleus around which corporate and other research entities will locate.

One or more anchors are possible, with examples including university research, public/private research, consortiums, government-sponsored research often through universities, and hospital-affiliated research. Buildout of Sub-Area B identifies several waterfront and near-waterfront locations intended to attract potential institutional anchor tenants. These waterfront locations are integrated into a proposed new Bay inlet (see description below), which establishes a high-amenity, expanded shoreline.

Developing the Science and Technology District within Sub-Area B will require relocation of the City of Oakland's existing corporation yard, assembling smaller parcels and improving the Sub-Area's infrastructure, including improved roadways and transit access, utilities, state-of-the-art telecommunications and high-speed internet connections, together with waterfront amenities.

The Science and Technology District is proposed to include approximately 53 acres within Sub-Area B, accommodating a total buildout of up to approximately 3.5 million square feet of technology and office uses and a small (0.4 acre) park. Parking will be provided throughout the Science and Technology District in a combination of surface parking spaces and structured parking garages.

Bay Inlet

Buildout of Sub-Area B proposes the creation of an approximately 12-acre new inlet of San Leandro Bay. This inlet would be created by excavating/dredging the area and allowing Bay waters to enter. This excavation would result in a removal of fill and an increase in Bay surface area. Existing infrastructures in this area would be removed and/or modified by the surrounding Science and Technology District development. The new inlet is not proposed as a navigable waterway (i.e., no ferries or boat docks), but instead would include intertidal mudflats that would support shorebird foraging and possibly high-tide roosting habitat. The primary purpose of the new bay Inlet would be to create new waterfront edge within this Sub-Area as an attraction and amenity for new development.

Concourse/Transit Connection across I-880

As indicated in the description of the Coliseum District, the Project proposes to connect the Coliseum site to the new Arena (located in Sub-Area B) with a new pedestrian concourse, or bridge, which will span across I-880 and link the Arena to the new Stadium, the Ballpark, the Sport Entertainment Zone and associated parking in Sub-Area A (see **Figure 3-22**). As part of the Specific Plan Buildout assumptions, this concourse will also be designed to accommodate a future enhanced transit system (i.e., a streetcar or shuttle service) that will use the concourse to create a transit loop from the Coliseum BART station, through the Coliseum District, and across the freeway into Sub-Areas B and C. Phase 1 of the transit system would run between the new Intermodal transit Hub at the existing BART station to the Bay inlet, and Phase 2 would extend from the Bay inlet through the Science and Technology District into Sub-Areas B and C.

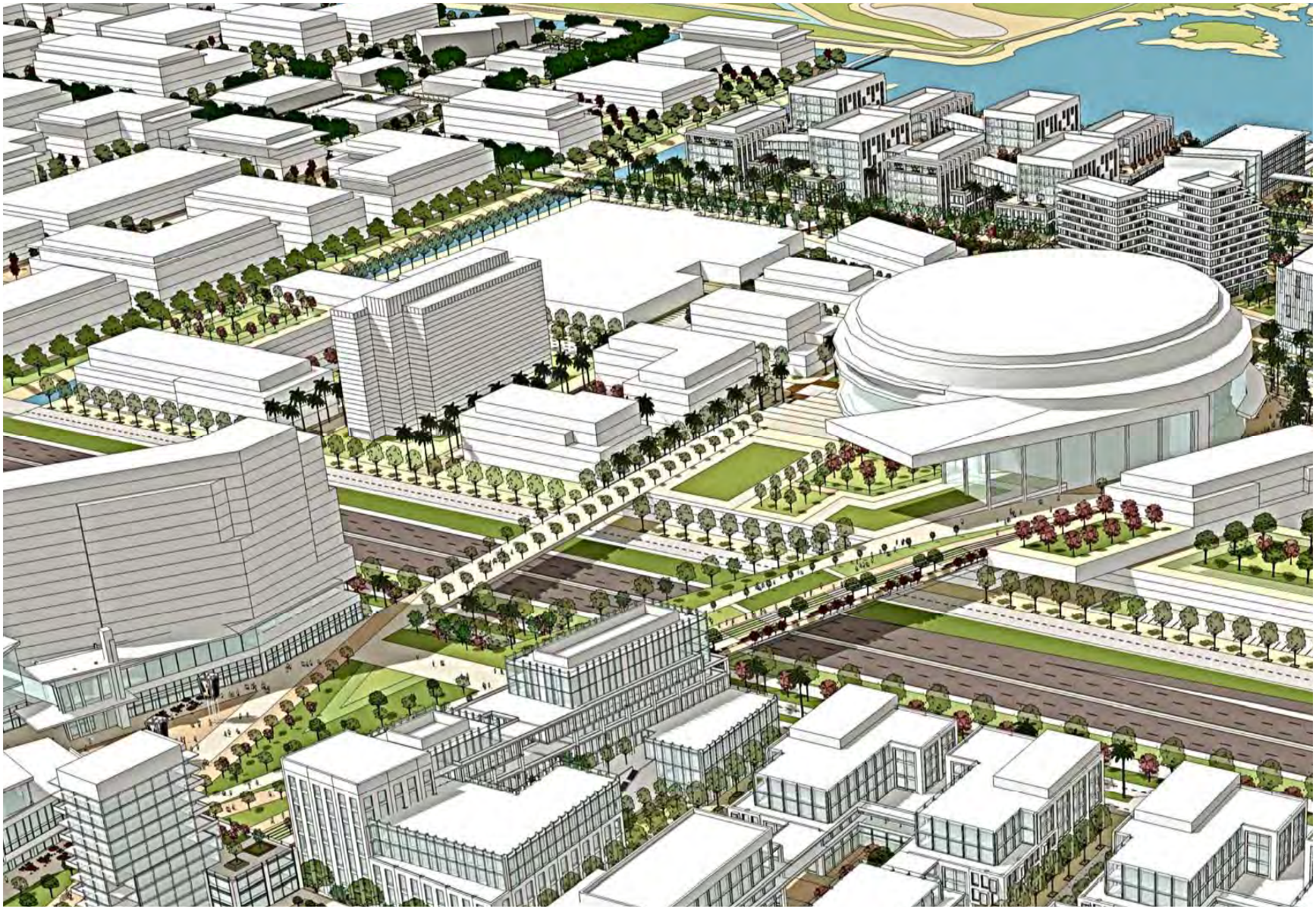

Figure 3-22
Concourse/Transit Connection Across I-880

Source: JRDV Urban International

Sub-Area C: Technology Support District

Similar to Sub-Area B, the Specific Plan buildout scenario for Sub-Area C anticipates substantial redevelopment of this area to accommodate new development. Much of the currently developed space within Sub-Area C consists of older and market-challenged business park buildings that provide space for a mix of light industrial, small office, and some non-profit and government uses. Buildout of Sub-Area C anticipates that as the Science and Technology District in the adjacent Sub-Area B becomes more established, Sub-Area C will transition into an area that contains new uses supportive of the institutional science and technology uses, such as advanced technology and other manufacturing; research and development and test product design; and sales, marketing, professional service, and finance uses supporting technology businesses (see **Figure 3-23**). Smaller, science/technology/green/clean companies seeking less costly space also could locate in Sub-Area C. This area is anticipated to include new development that is comparatively lower-cost, lower-density, and more flexible than the mix of buildings being developed in Sub-Area B. Expected buildout of Sub-Area C is anticipated to include more than 5.1 million square feet of these newer land uses.

Sub-Area D: Airport and Logistics District

Specific Plan Buildout anticipates a slightly more modest development projection of Sub-Area D, with most of the existing uses in this area remaining in the future and new infill development with new uses that support airport-related economic development. This area will provide locations for businesses that value proximity to the airport and the I-880 freeway, including larger logistics and distribution businesses/activities as well as hotel, retail, and eating and drinking uses along Hegenberger Road. Buildout of Sub-Area C is expected to include approximately 2 million square feet of total non-residential development space.

Sub-Area E: Habitat Restoration

As described above under Sub-Area B, Specific Plan Buildout proposes to eliminate approximately 8 acres of restored seasonal wetland and surrounding upland habitat at the existing Edgewater Seasonal Wetlands. To compensate for this loss, the Specific Plan suggests a land swap that would create up to 15 acres of new wetland habitat within the adjacent Sub-Area E in exchange for developing the 8-acre Edgewater Seasonal Wetland site. The property that has been preliminarily identified for this new wetland mitigation/swap includes an approximately 14.4 acre rectangular parcel on Oakport Street, currently owned by the East Bay Municipal Utility District (EBMUD), and used as an outdoor storage area, spill-over parking for Coliseum events, and occasional use for special events (Christmas tree lot, annual travelling circus/carnival, etc.). Currently, this lot is partially paved and the existing vegetation is ruderal, low quality habitat for wildlife. Before implementation of such a land swap could occur, EBMUD would need to become a willing partner in this concept, in exchange for financial or real estate considerations. No such arrangement with EBMUD has yet been made.

Assuming that the EBMUD parcel could be made available, the Specific Plan Buildout scenario proposes to re-create this site into an approximately 15-acre freshwater seasonal wetland habitat that would replace habitat lost at the Edgewater Seasonal Wetland site within Sub-Area B. Proposed improvements would include removing paved material and re-grading the site to create low areas that would retain fresh water and rainfall, and creating surrounding uplands to provide roosting habitat. The area would be planted with appropriate native plants to achieve a functioning seasonal wetland and fenced to exclude people and land-based predators.

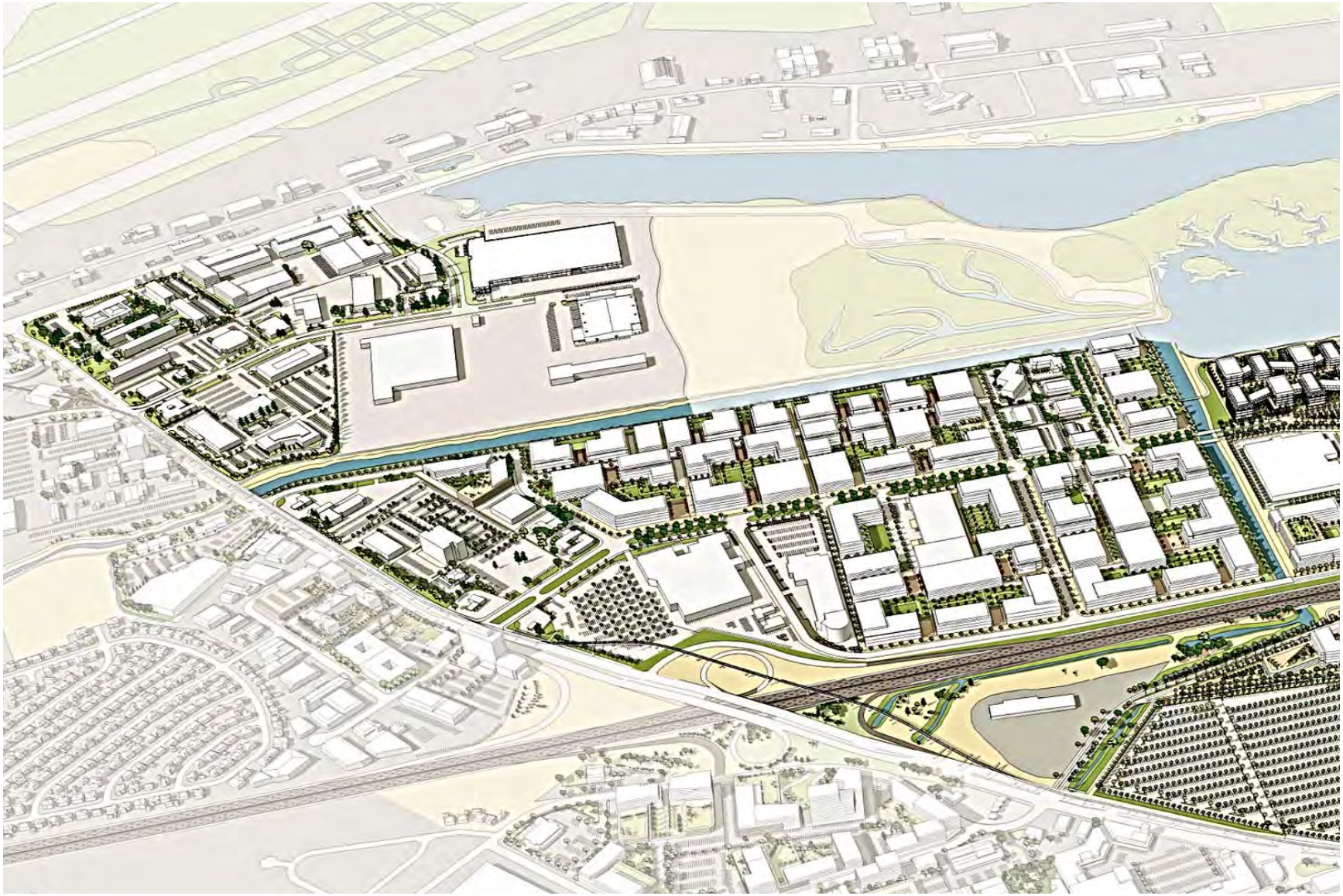

Figure 3-23
Plan Buildout, Sub-Area C

Source: JRDV Urban, International

The City-owned open space (approximately 24 acres), would be improved by wetland and habitat restoration, and for the recreation areas (such as the existing soccer field), with better signage and trails. The Plan envisions that, of the parcels owned by East Bay Municipal Utility District (EBMUD), a new Coliseum District zone (D-CO-6) would be mapped, allowing:

- the existing Oakport wet weather Facility to continue operations;
- the 14.4 acre parcel fronting Oakport Street at 66th Avenue could transition to open space, pending its sale or other agreements with EBMUD; and
- the waterfront-facing parcel at East Creek Slough would be improved by wetland and habitat restoration, as open space (it is currently leased by EBMUD to the East Bay Regional Parks District).

The Martin Luther King Jr. Regional Shoreline is located to the west of this site, directly adjacent to the Bay. An additional pedestrian/bike path along the eastern edge of this site could provide excellent wildlife viewing opportunities for the public, while maintaining low disturbance for the birds. This proposed new wetland mitigation site is immediately adjacent to Damon Slough and on the San Leandro Bay, which are both designated as important bird habitat.

The proposed Project would increase the total acreage of contiguous breeding and wintering habitat along the eastern shoreline of the Bay. This site would also have a hydrologic connection to the Bay and have tidal influence, enhancing its potential for restoration as a salt marsh. Restoration to a tidal salt marsh may benefit California clapper rail, which are abundant at the nearby Arrowhead Marsh, by providing foraging and breeding habitat.

Overall Plan Buildout

The following **Table 3-13** summarizes the non-residential and residential buildout scenario of Plan Buildout. These summary tables show the development potential of the Coliseum District (Sub-Area A plus the Arena) combined with the total Plan Buildout assumptions for Sub-Areas B, C, D and E.

Table 3-13: Plan Buildout, by Land Use Type (in square feet)

Land Use Type:	Sub-Area A	Sub-Area B	Sub-Area C	Sub-Area D	Sub-Area E	Total
Total Acres	243	127	189	136	105	800
Stadium	new					new
Ballpark	new					new
Arena	new					new
Event-Based Retail	225,000					225,000
Other Retail	190,000	58,800	222,480	35,600		506,880
Auto Retail			170,000	39,500		209,500
Hotel	598,500			457,000		1,055,500
Office		297,000	445,870	324,700	-	1,067,570
Science and Tech	1,500,000	3,214,650	-	-	-	4,714,780
S&T/ Off. /Light. Industrial			4,658,320	-		4,658,320
Light Industrial				26,300		26,300
Logistics/Distribu-tion				1,142,210		1,142,210
Institutional						0
Government/ Utility	13,000				32,500	32,500
Total Square Feet:	**2,526,470**	**3,570,450**	**5,496,670**	**2,029,300**	**32,500**	**13,655,420**
Residential Units:	**4,000**	**1,750**	**-**	**-**	**-**	**5,750**

Notes:

1. Sports Venue District includes the new Arena site on the west side of I-880

Net New Development, Plan Buildout

All of the new development anticipated under Plan Buildout represents new, private redevelopment of existing developed sites which are currently included within the Coliseum District, the Oakland Airport Business Park, and other existing surrounding public and private properties. The analysis of Plan Buildout as presented in this EIR is representative of the overall net land use changes that would occur as a result of new development and redevelopment within the Project Area, representing the overall change from existing conditions. **Table 3-14** presents a summary of this net new development.

This net change in development within the Planning Area would include:

- replacement of the Coliseum and Arena with three new sports and events venues (a net increase of 47,400 net new sports/events-related seats;
- 875 new hotel rooms, representing approximately 595,000 square feet of building space;
- a net addition of approximately 467,930 square feet of various types of retail space;
- a net increase of approximately 6,944,700 square feet of non-residential, employment generating office, technology and industrial uses;

- removal of approximately 93,950 square feet of institutional and government/utility building space; and
- construction of 5,175 new residential units.

Table 3-14: Net Change in Land Use at Plan Buildout (in square feet)

Land Use Type:	Sub-Area A	Sub-Area B	Sub-Area C	Sub-Area D	Sub-Area E	Total
Total Acres	243	127	189	136	105	800
Stadium	new					new
Ballpark	new					new
Arena	new					new
Event-Based Retail	225,000					225,000
Retail	183,050	58,800	43,280	17,800		302,930
Auto Retail	(89,000)		29,000			(60,000)
Hotel	598,500					598,500
Office	(82,500)		98,970	68,000		84,470
Science and Tech	1,500,130	2,817,570				4,317,700
S&T/ Off. /Light Industrial	-		3,101,520			3,101,520
Light Industrial	-	(676,800)	(21,300)			(845,700)
Logistics/Distribu-tion				286,710		286,710
Institutional	(7,750)		(8,000)			(15,750)
Government/ Utility	(62,400)	(15,800)				(78,200)
Total Square Feet	**2,117,430**	**2,183,770**	**3,243,470**	**372,510**		**7,917,180**
Residential Units	**4,000**	**1,750**				**5,750**

Notes:

1. Sports Venue District includes the new Arena site on the west side of I-880

Net Change in Population and Employment

New development within the Coliseum District will result in a substantial increase in the on-site population and employment base of the area. As shown in **Table 3-15**, the residential population will increase by nearly 10,250 people as a result of the new housing units, and on-site employment will increase by as much as nearly 21,000 jobs.

Table 3-15: Net Change in On-Site Population, Plan Buildout			
	Existing	**Buildout**	**Net Change**
Employment			
Sports Venues [1]	2,350	3,545	1,195
Hotel jobs	345	1,100	755
Retail / Restaurant jobs	456	1,795	1,330
Auto-Related Retail jobs	250	205	(45)
Science & Tech jobs	370	12,110	11,740
S&T/Office/ Light Ind. jobs	4,200	9,455	5,255
Office jobs	2,445	3,075	630
Logistics/Dist. jobs	490	635	145
Government/Utility /Inst. jobs	100	65	(35)
Total Jobs	**11,015**	**31,985**	**20,970**
Population			
Mid-rise residential buildings	0	3,770	3,770
High Rise residential buildings	0	6,470	3,615
Total Residential Population:	**0**	**10,240**	**10,240**
Total Employed Residents:	**0**	**6,970**	**6,970**

Note:

1. Includes both full-time and part-time event-based employment. Conversions to full-time equivalent jobs is 2,350 existing jobs = 1,099 FTE jobs, and 3,545 buildout jobs = 1,638 FTE jobs

Approvals Required to Implement the Project

City of Oakland's Subsequent Approvals

As indicated in Chapter 1: Intended Uses of this EIR, it is anticipated that this EIR will provide the environmental review necessary for City of Oakland approvals of the Specific Plan, as well as a number of General Plan amendments and re-zonings throughout the Project Area. Furthermore, this EIR may provide sufficient detail to enable the City and other responsible governmental agencies to make informed site-specific decisions on individual projects. The City intends to use the streamlining and tiering provisions of CEQA to the maximum feasible extent so that future environmental review of specific private development projects and public improvement projects carried out in furtherance of the Specific Plan are expeditiously undertaken, without the need for repetition and redundancy.

Coliseum District

A number of City permits and approvals would be required before the development of the Project could proceed. As Lead Agency for the proposed Project, the City of Oakland would be responsible for the approvals required for development. A list of required permits and approvals that may be required by the City includes:

- Approval of the proposed Coliseum Area Specific Plan;

- Approval of one General Plan Amendment and one General Plan correction, to bring the area on San Leandro Street, between 66th Avenue, 76th Avenue, Coliseum BART station and the Railroad tracks, into the Community Commercial designation;
- Approval of new zoning districts ("D-CO-1" through "D-CO-3") in the Oakland Planning Code, and approval of a new zoning map to allow new residential, hotel, sports facilities uses, as well as add open space to the Coliseum District;
- Approval of a Preliminary Development Plan (PDP) for the Coliseum District;
- Approval of subsequent Final Development Plans (FDPs) for each phase of new development within the Coliseum District;
- Approval of all necessary subsequent Conditional Use Permits (CUPs) for new stadiums, ballparks and arenas, and any new housing within those portions of the Coliseum District;
- Approval of Subdivision Maps or lot line adjustments, as may be necessary to create individual development sites;
- Design Review approvals for all subsequent individual development projects within the Coliseum District, pursuant to Chapter 17.136 of the Oakland Planning Code;
- Approval of a Category IV Creek Protection Permit for exterior development and work conducted within 20 feet from the top of bank of Elmhurst Creek or Damon Slough, and/or a Category III Creek Protection Permit for development and work conducted within 100 feet from the centerline of Elmhurst Creek or Damon Slough, pursuant to Chapter 13.16 of the Oakland Municipal Code;
- Tree removal permits pursuant to the City's Protected Trees Ordinance (Chapter 12.36 of the Oakland Municipal Code);
- Encroachment permits for work within and close to public rights-of-way (Chapter 12.08 of the Oakland Municipal Code); and
- Demolition permits, grading permits, and building permits.

To the extent possible, the City of Oakland will rely on this EIR to provide environmental review for subsequent projects or their sites that are analyzed as part of this EIR.

Plan Buildout

This EIR also provide the necessary environmental review for City of Oakland discretionary approvals and action necessary to initiate implementation of portions of the Plan Buildout. In addition to approval of the Specific Plan, a number of additional City approvals would be required prior to implementation of individual development projects pursuant to the Plan within Sub-Areas B, C, D or E. The City of Oakland would be responsible for the following additional approvals:

- Approval of additional General Plan Amendments, changing the existing designations land use designations to Open Space, Community commercial and Regional Commercial;
- Approval of additional new zoning districts ("D-CO-3" through "D-CO-6") and approval of a new zoning map with zoning changes;
- Approval of Memorandum of Understanding (MOU) or other similar instrument between the City of Oakland and the Port of Oakland, clarifying the regulatory land use jurisdiction over those properties within the Oakland Airport Business Park, or under Port ownership. Implementation of the Specific Plan within areas currently under the Port's regulatory jurisdiction will require either the Port's co-

approval of the Specific Plan along with potential commensurate changes to its Land Use and Development Code (LUDC), or for the Port to cede it's regulatory land use authority for those lands within the Specific Plan to the City of Oakland;

This EIR may also provide the necessary environmental review for City of Oakland discretionary approvals and action necessary towards implementation of Specific Plan buildout. A number of permits and approvals would be required before full Buildout could proceed. As Lead Agency, the City of Oakland would be responsible for the approvals required for development. A list of required permits and approvals that may be required by the City includes:

- Approval of Preliminary Development Plans (PDP) within the Science and Technology District (Sub-Areas B and C), as may be required;
- Approval of subsequent Final Development Plans (FDPs) each phase of new development within these future PUDs;
- Approval of Subdivision Maps or lot line adjustments, as may be necessary to create campus-style development sites;
- Design Review approvals for subsequent individual development projects pursuant to Chapter 17.136 of the Oakland Planning Code;

At such time as individual actions as contemplated under the proposed Project are proposed for implementation within Sub-Areas B, C, D and E, the City will consider whether those action's environmental effects were fully disclosed, analyzed, and as needed, mitigated within this EIR; whether the action is exempt from CEQA; whether the action warrants preparation of a subsequent or supplemental environmental document; or whether the action warrants preparation of focused environmental review limited to certain site-specific issues.

Other Agencies Whose Approval may be Required

In addition to the City of Oakland, there are a number of other agencies whose approvals and authorizations will or may be required to implement the Specific Plan. These possible other agencies and their approvals may include:

- Port of Oakland – Approval of Memorandum of Understanding (MOU) or other similar instrument between the City of Oakland and the Port of Oakland, clarifying the regulatory land use jurisdiction over properties within the Oakland Airport Business Park. Implementation of the Specific Plan within areas currently under the Port's regulatory jurisdiction will require either the Port's co-approval of the Specific Plan along with potential commensurate changes to its Land Use and Development Code (LUDC), or for the Port to cede it's regulatory land use authority for those lands within the Specific Plan to the City of Oakland;
- County of Alameda – lease terms and other agreements related to use of their jointly-owned lands within the Coliseum District;
- California Department of Transportation – approval of encroachment permits and other permits necessary to construct interchange and intersection improvements at locations within their jurisdiction, as well as construction of the overhead pedestrian/transit "high-line" overpass over I-880;

- Bay Area Rapid Transit District – for approvals and construction of planned improvements and enhancements to the Coliseum BART station, including improved pedestrian access, increased fair gate capacity, widened and/or lengthened station platforms and an overhead canopy;
- Bay Area Air Quality Management District (BAAQMD) – Granting of permits for stationary source air emissions and compliance with Regulation 2, Rule 1 for all portable construction equipment subject to that rule;
- East Bay Municipal Utilities District (EBMUD) – Granting new water service connections and meters.
- State Water Resources Control Board (SWRCB) – Acceptance of Notice of Intent to obtain coverage under the General Construction Activity Storm Water Permit.
- Regional Water Quality Control Board – Waste Discharge Requirements (WDRs) or National Pollutant Discharge Elimination System (NPDES) permit
- Alameda County Airport Land Use Commission (or other Federal Aviation Administration approvals) for the three stadiums to be as tall as 175 feet, with lights up to 200 feet within the X zone of the Oakland International Airport.

Specific to work within creeks and along the shoreline:

- United States Army Corps of Engineers - Clean Water Act Section 404 Permit for all work within Elmhurst Creek, Damon Slough and San Leandro Bay shoreline improvements and/or modifications;
- California Department of Fish and Wildlife - Section 1602 Streambed Alteration Permit for work within Elmhurst Creek and Damon Slough;
- SF Regional Water Quality Control Board - Clean Water Act Section 401 Permit for work within Elmhurst Creek and Damon Slough, and for San Leandro shoreline improvements and/or modifications;
- San Francisco Bay Conservation and Development Commission – Major Permit for San Leandro shoreline improvements and/or modifications;
- Regional Water Quality Control Board – Waste Discharge Requirements (WDRs) or National Pollutant Discharge Elimination System (NPDES) permit

Specific to the San Leandro Bay cut inlet concept under Specific Plan Buildout:

- Regional Water Quality Control Board – Construction General Permit Stormwater Pollution Prevention Plan (SWPPP) with a formal Risk Level designation
- California Department of Fish and Wildlife – Technical Assistance Consultation and possible MOU (for State Fully Protected species Salt Marsh Harvest Mouse, California Clapper Rail)
- United States Fish and Wildlife Service - Letter of Concurrence (for Salt Marsh Harvest Mouse, California Clapper Rail
- US NOAA National Marine Fisheries Service - Letter of Concurrence (for steelhead and green sturgeon)
- United States Army Corps - Rivers and Harbors Act Section 10 Permit (also covers United States Coast Guard requirements)
- Interagency Dredge Material Management Office (DMMO) - Dredging-Dredged Material Reuse/Disposal Permit

- California Department of Fish and Wildlife – Incidental Take Permit (for Long fin smelt)
- United States NOAA National Marine Fisheries Service Essential Fish Habitat (EFH) Consultation

4.0

Setting, Impacts and Mitigation Measures

This chapter contains an analysis of the environmental topics relevant to the proposed Project and constitutes the major portion of this Draft EIR. Sections 4.1 through 4.14 describe the existing physical and regulatory settings relevant to the proposed Project for each environmental topic analyzed in this EIR, the potential impacts that could result from implementation of the Coliseum Area Specific Plan, City policies and Standard Conditions of Approval that would minimize those potential impacts, and mitigation measures if necessary to avoid or reduce identified significant impacts.

The following provides an overview of the scope of the analysis included in this chapter, standard terminology, assumptions, the organization of the sections and the methods for determining what impacts are significant, including the use of the City's Standard Conditions of Approval.

Environmental Topics Evaluated in this EIR

The following environmental topics are evaluated in this EIR:

- Aesthetics, shadow and wind
- Air quality
- Biological resources
- Cultural and historic resources
- Geology and soils
- Greenhouse gas emissions and climate change
- Hazards and hazardous materials
- Hydrology and water quality
- Land use and planning
- Noise
- Population, housing and employment
- Public services and recreation
- Traffic and transportation
- Utilities and service systems

It is anticipated that implementation of the proposed Project will not have significant environmental impacts on agriculture and forest resources or mineral resources. Consequently, these environmental factors are not analyzed in the EIR.

Standard Terminology

The Coliseum Area Specific Plan and future development pursuant to the Specific Plan are referred to as the **proposed Project**.

As explained in Chapter 3, Project Description, future development within Sub-Area A plus the proposed new Arena site within Sub-Area B is referred to as the **Coliseum District**. The Master Coliseum City Master Plan provides a conceptual strategy for how the Coliseum District may develop pursuant to the Coliseum Area Specific Plan.

Future development and redevelopment throughout the entire Project Area is referred to as **Plan Buildout**.

Assumptions

In order to assess the effects of the proposed Project, it is necessary to make standard assumptions about existing and future conditions.

- The horizon year of the proposed Project is 2035, by which time the Project Area is anticipated to be fully developed as permitted under the Coliseum Area Specific Plan. The impacts of the proposed Project are assessed by comparing environmental conditions in 2035 to existing conditions.
- The base year for existing conditions for the analysis is 2013. For comparisons where 2013 data are not available, the closest available year is used. An exception to this appears in Chapter 4.6 GHG Emissions and Climate Change. The City's thresholds of significance call for the project's expected greenhouse gas emissions during construction to be annualized over a period of 40 years and then added to the expected emissions during operation for comparison to the threshold; a 40-year period is used because 40 years is considered the average life expectancy of a building before it is remodeled with considerations for increased energy efficiency.
- For the Coliseum District, the development program as illustrated in the Coliseum City Master Plan is treated as a single coherent "project" and evaluated as such by this EIR.
- For Plan Buildout, the impacts of the proposed Project are only addressed in as much detail as the Project Description for buildout in Sub-Areas B, C, D and E provides. Many of the details associated with future development in these areas are as yet undefined. Consequently, further evaluation of potential impacts may be required within these Sub-Areas once greater development details are known.

Format of Topic Sections

Each environmental topic section includes three main subsections: (1) Environmental Setting; (2) Regulatory Setting; and (3) Impacts, Standard Conditions of Approval and Mitigation Measures.

Environmental Setting

This section details the physical conditions in and around the Project Area as of 2013, or the most recent year for which detailed information is available.

Regulatory Settings

This section summarized federal, State, and local laws and policies pertaining to the environmental issue area. These regulations may partially or fully mitigate potential environmental impacts. Local regulations may come from regional agencies as well as the City of Oakland, including the City's Conditions of Approval and uniformly applied development standards imposed as Standard Conditions of Approval; these are broadly referred to as SCAs.

The listed SCAs for an environmental topic are preceded by the condition(s) under which the SCA applies. The SCAs are derived from four documents:

- Standard Conditions of Approval, dated September 9, 2008; which were adopted by the Oakland City Council on November 3, 2008 (Ordinance No. 12899 C.M.S.).
- Supplemental Standard Conditions of Approval, dated July 28, 2011
- Transportation Demand Management Standard Condition of Approval, dated October 31, 2012
- Exposure to Air Pollution (Toxic Air Contaminants) Standard Condition of Approval, dated August 30, 2013

Impacts, Standard Conditions of Approval and Mitigation Measures

This section begins by listing the City's adopted CEQA **Thresholds of Significance**, dated October 28, 2013, for the environmental topic of the chapter; see the Determination of Significance section below for more details. These are followed by a subsection discussing the **Approach to Analysis**. Following those subsections are the impact analyses, which are structured as follows:

- Impact title
  - This is a summary of the threshold of significance.
  - Each threshold has a title, even if the analysis concludes there is no impact.
- Applicable location
  - This header will say either "Coliseum District", "Plan Buildout", or "Coliseum District and Plan Buildout".
  - Some impacts are different within different locations, or with a greater degree of detail known, while others apply equally across the entire Project Area.
- Impact statement
  - For ease of references, impact statements are coded with an abbreviation of the chapter topic, followed by a number that corresponds to the applicable threshold of significance. If there are impacts specific to development of the Coliseum District under the Master Plan proposal, the letter "A" is included, with the letter "B" included for impacts related to the Plan Buildout. If an impact applies to the entire Project Area (i.e., the Coliseum District and Plan Buildout), there is no letter.
  - For example, the impact statement for the first threshold in the Cultural and Historic resources chapter is titled, "Impact Cultural-1A", since it applies to the first threshold (1) and to the Coliseum District only (A). The next impact statement also applies to the first threshold and relates to the entire Plan Buildout, so it is titled "Impact Cultural-1B". The impact for the second

criterion applies to the entire Project Area, and thus is titled "Impact Cultural-2" with no letter designation.

  - The impact statement repeats the threshold of significance and indicates whether the proposed Project would or would not result in a significant impact for that criterion.
  - The impact statement is followed by a determination of significance in bold within parenthesis. See the Determination of Significance section below for further details.

- Impact discussion
  - An analysis of the impact is provided, explaining whether and how the proposed Project would result in a significant impact.
- Standard Conditions of Approval
  - Any SCAs that would reduce the impact are cited, with their mitigation explained. See the Standard Conditions of Approval section below for more details.
- Mitigation Measures
  - If the impact is potentially significant and would not be fully mitigated by existing regulations, including SCAs, then one or more mitigation measures are provided to reduce the anticipated impact, if possible.
  - Each measure is titled as "MM" followed by the impact code and a number, which increases consecutively for each additional measure.
  - For example, the first mitigation measure for the first impact in the Cultural and Historic Resources chapter (which only applies to the Coliseum District), is titled "MM Cultural 1A-1", while the second mitigation measure for the same impact is titled "MM Cultural 1A-2".
- Significance After Mitigation
  - If the impact requires mitigation measures, this section is included to explain whether it has been reduced to a less than significant level or is significant and unavoidable.

Determination of Significance

Under CEQA, a significant effect is defined as a substantial or potentially substantial adverse change in the physical environment. Each of the impact evaluations is prefaced by criteria of significance which are the thresholds for determining whether an impact is significant. The criteria of significance used in this EIR are derived from the City of Oakland's CEQA Thresholds/Criteria of Significance. The Thresholds are offered as guidance in preparing environmental review documents. The City requires use of these Thresholds unless there is something unique about the project location which would indicate the need to address thresholds of another agency as well, or other unique factors that would warrant the use of different or additional thresholds. The Thresholds are intended to implement and supplement provisions in the CEQA Guidelines for determining the significance of environmental effects, including Sections 15064, 15064.5, 15065, 15382 and Appendix G, and form the basis of the City's Initial Study and Environmental Review Checklist.

The Thresholds are intended to be used in conjunction with the City's Uniformly Applied Development Standards and Conditions of Approval (see discussion below), which are incorporated into projects as Conditions of Approval regardless of the determination regarding a project's environmental impacts.

CEQA requires the analysis of potential adverse effects of the project on the environment. Potential effects of the environment on the project are legally not required to be analyzed or mitigated under CEQA. However, this document nevertheless analyzes potential effects of the environment on the project in order to provide information to the public and City decision-makers. Where a potential significant effect of the environment on the project is identified, the document, as appropriate, identifies Standard Conditions of Approval and/or project-specific non-CEQA recommendations to address these issues (see discussion below).

Each impact is assessed by its level of significance, which is one of the following:

- **No Impact** - No noticeable adverse effect on the environmental would occur.
- **Less than Significant** – The proposed Project would cause an environmental effect, but that effect would not exceed the City's threshold of significance.
- **Less than Significant with Standard Conditions of Approval (SCAs)** – The proposed Project would not result in an adverse impact due to the required implementation of City of Oakland SCAs. Because these SCAs are mandatory City requirements, the impact analysis assumes that these will be imposed and implemented by the Project. Where implementation of a required Standard Condition of Approval would reduce an otherwise potentially significant impact to less than significant, the impact will be determined to be less than significant.
- **Less than Significant with Mitigation Measures** – The proposed Project would cause an adverse impact, but that impact can be reduced to a less than significant level with implementation of recommended mitigation measures as identified in this EIR.
- **Significant and Unavoidable** – The proposed Project would cause an adverse impact that exceeds the threshold of significance and cannot be avoided or reduced through implementation of SCAs or recommended mitigation measures.

Standard Conditions of Approval

The City's Thresholds are intended to be used in conjunction with the City's Uniformly Applied Development Standards and Conditions of Approval. These Uniformly Applied Development Standards and Conditions of Approval (referred to in the EIR as Standard Conditions of Approval or SCA) are incorporated into projects as conditions of approval regardless of the determination of a project's environmental impacts. As applicable, the Standard Conditions of Approval are adopted as requirements of an individual project when it is approved by the City and are designed to, and will, avoid or substantially reduce a project's environmental effects.

In reviewing project applications, the City determines which Standard Conditions of Approval apply based upon the zoning district, community plan, and the type(s) of permit(s)/approvals(s) required for the project. Depending on the specific characteristics of the project type and/or project site, the City will determine which Standard Conditions of Approval apply to a specific project; for example, Standard Conditions of Approval related to creek protection permits will only be applied to projects on creek side properties. Because these Standard Conditions of Approval are mandatory City requirements imposed on a citywide basis, the impact analysis assumes that these will be imposed and implemented by the project. If a Standard Condition of Approval would reduce a potentially significant impact to less than significant, the impact will be determined to be less than significant and no mitigation is imposed.

The Standard Conditions of Approval incorporate development policies and standards from various adopted plans, policies, and ordinances (such as the Oakland Planning and Municipal Codes, Oakland

Creek Protection, Stormwater Water Management and Discharge Control Ordinance, Oakland Tree Protection Ordinance, Oakland Grading Regulations, National Pollutant Discharge Elimination System (NPDES) permit requirements, Housing Element-related mitigation measures, Green Building Ordinance, historic/Landmark status, California Building Code, and Uniform Fire Code, among others), which have been found to substantially mitigate environmental effects. Where there are peculiar circumstances associated with a project or project site that will result in significant environmental impacts despite implementation of the Standard Conditions of Approval, the City will determine whether there are feasible mitigation measures to reduce the impact to less-than-significant levels.

Cumulative Analysis Context

CEQA defines cumulative as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts when the project's incremental effect is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. These impacts can result from a combination of the proposed project together with other projects causing related impacts. "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 probable future projects."

The methodology used for assessing cumulative impacts typically varies depending on the specific topic being analyzed. For example, the geographic and temporal (time-related) parameters related to a cumulative analysis of air quality impacts are not necessarily the same as those for a cumulative analysis of noise or aesthetic impacts. This is because the geographic area that relates to air quality is much larger and regional in character than the geographic area that could be impacted by potential noise or aesthetic impacts from a proposed project and other cumulative projects/growth. The noise and aesthetic cumulative impacts inherently are more localized than air quality and transportation impacts which are more regional in nature. Accordingly, the parameters of the respective cumulative analyses in this document are determined by the degree to which impacts from this Project are likely to occur in combination with other development projects.

Forecast-Based Cumulative Growth

Since 2000, the City of Oakland has developed and maintained a cumulative growth scenario and land use database primarily for use in cumulative transportation analyses and associated air quality and noise studies for Oakland EIRs. Oakland's growth scenario is developed using a forecast-based approach (i.e., an approach based on regional forecasts of economic activity and demographic trends). The Association of Bay Area Government's (ABAG) projections provide the citywide and regional economic and demographic inputs. The Alameda County Transportation Commission traffic model released in June 2011, which uses land use and socio-economic data consistent with Association of Bay Area Government (ABAG) Projection 2009, was used as the base for the cumulative growth scenario. The cumulative scenario also incorporates extensive local information and input regarding the locations for growth and change within the City including past, present, existing, pending and reasonably foreseeable future development in the area surrounding the Project, including changes in land use proposed by the Broadway Valdez Specific Plan, Lake Merritt Station Area Plan and West Oakland Specific Plan, other major developments on the City's Active Major Project list, and the proposed Alameda Point development in Alameda. This local input provides greater specificity about growth and development in

Oakland for use in allocating growth to subareas and traffic analysis zones (TAZs) within the City. Transportation analyses using the Alameda County Transportation Commission (ACTC) travel demand model require inputs at the TAZ level. The scenario also includes existing development conditions within the baseline and growth projections for adjacent jurisdictions. The forecast-based approach for defining the cumulative growth scenario is used as a basis for cumulative analysis of transportation and transportation-related noise, air quality and greenhouse gas emissions impacts.

During the timeframe for preparation of this EIR, ABAG adopted the Plan Bay Area as an update or revision to its Projections 2009. CEQA Guidelines Section 15125 provides that the description of the environmental conditions used in an EIR shall be as they exist at the time the Notice of Preparation is published, or if no NOP is published, at the time environmental analysis is commenced. The NOP for this EIR was published on April 19, 2013 and the environmental analysis commenced immediately thereafter, before the Plan Bay Area was adopted in July 2013. Thus, the use of travel forecasts using the June 2011 version of the Alameda CTC Countywide Travel Demand Model (which is consistent with Association of Bay Area Governments' Projections 2009, the latest MTC Regional Transportation Plan, and the latest Alameda Countywide Plan), is based upon the information that was available at the time analysis began. For informational purposes, the Population, Housing and Employment chapter of this EIR provides a comparison of the ABAG Projections 2009 and Plan Bay Area projections for the Project Area.

List-Based Cumulative Development

For other cumulative topics analyzed in this EIR which have a closer geographic cumulative context (e.g., biological resources, hydrology, geology, etc.), a "list method" of past, present and reasonably foreseeable future projects, based on the City's latest list of Major Development Projects, is used. The list-based approach uses the City's list of Major Development Projects as of the date of circulation of the Notice of Preparation of this EIR. A list of other closely related past, present and reasonably foreseeable probable future projects located outside but near the Coliseum Area include the following:

- Lion Creek Crossings. This five-phase affordable housing development is located immediately adjacent to the Project Area boundary, just east of the BART tracks between 66th and 69th Avenues. The first four phases have already been completed and include 283 housing units, 7,500 square feet of civic and commercial space, and a park. The fifth and final phase is under construction, and will include 129 senior housing units.
- Aspire Public Schools. At 1009 66th Avenue, adjacent to the Lion Creek Crossings development and just north of the Project Area, a vacant industrial building was demolished and replaced with a school accommodating 420 students. The project was completed in 2011.
- 9400 International Boulevard. Located just over a mile to the south of the Project Area, this mixed-use residential development was approved in 2012 to build 59 affordable housing units and 3,500 square feet for commercial uses.
- Arcadia Park. A 168 unit residential project near the intersection of 98th Avenue and San Leandro Street; completed in 2012.
- East Oakland Sports Center. Located at 9175 Edes Avenue, under a mile south of Sub-Area A. This City project consisted of a phased master plan for a sports center at Ira Jenkins Park, and includes a 26,000 square foot indoor swimming pool, dance/exercise room, multi-purpose room/learning center, and other accessory activities, and another 23,000 square foot facility and outdoor amenities. The project was completed in 2007.

Other Specific Plans

The City of Oakland has three other Specific Plan planning efforts underway:

- The Broadway Valdez District Specific Plan's preferred land use concept envisions a retail core in the Valdez Triangle with a mix of housing and office uses in the approximately 96-acre area around Broadway, which is generally bounded by Interstate-580 to the north, Grand Avenue to the south, Webster Street and Valley Street to the west, and Harrison Street, Bay Place, 27th Street, Richmond Avenue, and Brook Street to the east. The final Broadway Valdez Specific Plan was adopted and its EIR certified on concurrent meetings of the Oakland City Council held on June 17 and July 1, 2014.
- The Lake Merritt Station Area Plan's preferred land use plan envisions a mix of transit-oriented retail, housing and office uses to take advantage of the transit-rich Plan area, within a half-mile of the Lake Merritt BART station (generally bounded by I-880 to the south, 14th Street to the north, Broadway to the west and 5th Avenue to the east). The final Lake Merritt Station Area Plan and Final EIR were released for public review in July 2014, and hearings to consider approval and certification are scheduled for September 2014.
- The West Oakland Specific Plan's preferred land use plan envisions an overall private redevelopment within certain Opportunity Areas of West Oakland designed to reduce blight, attract new industry, maintain and support existing businesses and industry, promote smart growth and transit-oriented development, encourage mass transit and create living wage jobs for West Oakland residents. It maximizes the advantages of West Oakland's combination of a rich cultural legacy with an abundance of underutilized, accessible land in the very heart of such an economically productive region. The final West Oakland Specific Plan was adopted and its EIR certified on concurrent meetings of the Oakland City Council held on July 15 and July 29, 2014.

The cumulative discussions that are contained within each environmental topic area explain the geographic scope of the area affected by each cumulative effect, and draw on the information in the cumulative growth scenario consistent with the defined geographic area.

4.1

Aesthetics, Shadow, and Wind

Environmental Setting

Visual Character and Quality

The Project Area covers 800 acres—over one square mile—and contains a variety of settings unique to each Sub-Area.

- Sub-Area A is an urbanized area dominated by the Coliseum sports and entertainment complex, as well as surface parking on asphalt, industrial buildings, and transportation infrastructure. The area to the east of the Coliseum BART station consists of modestly landscaped parking lots surrounded by deteriorating single family houses, both light and heavy industrial uses, and the recently built Lion Creek Crossings apartments. This parking area is bordered by the elevated BART line and station. West of San Leandro Street is a narrow strip of degrading industrial storage with an active foundry located just to the south of the Project Area boundary. This industrial area is separated from the Coliseum complex by Damon Slough (see Chapter 4.3 Biological Resources for discussion of its existing condition) and at-grade railroad tracks. The Coliseum Complex consists of the Coliseum and the Arena, which are surrounded by parking lots; see Chapter 4.4 Cultural and Historical Resources for a full discussion of the structures. These sports venues are highly visible from I-880, the Coliseum BART Station, and Hegenberger Road. The BART station and elevated BART tracks form a significant visual barrier within the Sub-Area, effectively splitting it into two segments. The Coliseum and Arena also block views between the northern and southern portions of the Sub-Area.
- The southern edge of Sub-Area A is dominated by the elevated Hegenberger Road. I-880 borders the western edge of Sub-Area A; the view across I-880 is dominated by single high-rise building (Airport Corporate Centre, at 180 feet). The northern edge of Sub-Area A looks into warehouse and industrial district.
- Sub-Area B consists of freeway-oriented retail and office buildings along I-880, and the Oakland Airport Business Park, along Edgewater Drive: older, but generally well-maintained and landscaped one-story light industrial and office park. The shoreline of Sub-Area B consists of the MLK Shoreline Park, which features a vegetated pedestrian trail and bike path with views looking across San Leandro Bay.
- Sub-Area C includes the Oakland Airport Business Park along Edgewater Drive and the MLK Shoreline Park. The Hegenberger corridor, however, features big box retail and regional shopping organized around a Wal-Mart and its large surface parking lot.
- Sub-Area D consists of large-scale warehouse and distribution buildings, effectively two to three stories in height, which have larger parcels and footprints than seen in the buildings of Sub-Area C. The Hegenberger corridor of Sub-Area D has a mix of retail, offices, and hotels. The western edge of Sub-Area D consists of the Arrowhead Marsh and allows for clear viewing across to the City of Alameda.

- The entire length of Hegenberger Road within the Project Area has outdoor signs of varying size that create the appearance of a strip commercial area. There is great variety in architectural style and no harmonious design theme to the overall development profile. The portion of Hegenberger Road between Edgewater Road and San Leandro Creek is visually more attractive than other segments of Hegenberger Road because of the large building setbacks and street trees. The Oakland Airport Connector is currently being built in the median above Hegenberger Road, with approximately 17 to 20 feet of clearance above grade.
- Sub-Area E consists of open space, semi-developed parkland, vacant land, and an EBMUD wet weather facility and corporation yard. From I-880, this Sub-Area appears generally overgrown or unmaintained land used for open storage.

The BART Oakland Airport Connector (OAC) is currently under construction in and adjacent to the Project Area. The OAC is an elevated monorail that will run from the Coliseum BART station to Oakland International Airport. It is located above the centerline of Hegenberger Road, and thus is located along the edges and visible from portions of Sub-Areas A, C, and D.

Pacific Gas and Electric Company (PG&E) owns and operates two dual circuit 115kV overhead transmission mains that bisect Sub-Area A within a 95' easement. The lines enter Sub-Area A across Hegenberger Road just east of I-880; after crossing Coliseum Way, they angle eastward directly toward the BART station; at Damon Slough, they turn northward and are aligned directly over the waterway; after crossing Lion Creek, they turn southward, skirting the edge of the Coliseum parking lot; and then turn northward again at the Coliseum Way bridge across Damon Slough and exit the Project Area by passing 66th Avenue. The power lines are supported by high tension towers which are quite tall, as the lines pass over the pedestrian bridge between BART and the Coliseum. Consequently, the power lines and the support towers visually dominate the Coliseum Complex, especially at the north entrance, and affect the visual experience of Damon Slough by giving it an industrialized look.

Scenic Vistas

The Oakland Hills several miles to the north and northeast are a primary scenic resource visible from the Project Area, especially Sub-Area A, and from I-880 within and beyond the Project Area. The shoreline along San Leandro Bay has views of homes and marinas on Bay Farm Island and the City of Alameda, as well as Arrowhead Marsh, across the water.

Scenic Highways

According to the City of Oakland General Plan's Scenic Highways Element, scenic routes are "distinctively attractive roadways that traverse the City and the visual corridors which surround them." Current and future scenic routes may include officially designated State scenic highways, municipally designated City roadways or informally recognized local scenic byways.[1]

Interstate 580 (the MacArthur Freeway) extends 12 miles through Oakland, from the San Leandro city limits to the San Francisco-Oakland Bay Bridge. The entire length of I-580 within Oakland is identified as a designated scenic route in the City of Oakland General Plan Scenic Highways Element. I-980 is identified as a route that could be considered for possible future designation. The segment of I-580 from the San Leandro city limit to State Route 24 (post miles 34.5 to 45.1) is also an officially designated State

[1] City of Oakland, City of Oakland General Plan Scenic Highways Element, September 1974, p. 1.

scenic highway. The Project Area is not readily visible from either I-580 or I-980, however, due to distance and intervening vegetation and terrain. I-880, the main freeway in the Project Area, is not included in the Scenic Highways Element.

Light and Glare

Existing sources of nighttime light in and around the Project Area include those common to urban areas, including street and freeway lights, parking lot lighting, building lighting, illuminated signs, vehicle headlamps and interior lighting visible through windows. Visible light sources and stray lighting from some industrial buildings and yards is incompatible with adjacent residential uses. Inadequate street lighting in some locations makes these areas feel unsafe. Existing sources of glare include reflection of sunlight and artificial light off of windows, buildings and other surfaces in the day, and glare from inadequately shielded and improperly directed light sources at night.

Shadow

The effects of shading by one structure upon another structure or space can be either positive or negative, depending upon site-specific circumstances. Perceived adverse effects of shadow may include loss of natural light, including natural light for passive or active solar energy applications, or loss of desired warming during cool weather. Factors influencing the perceived impact of shadow can include building placement; the height, bulk and setback of structures; the time of year; the duration of shading in a day; weather; landscaping; and the sensitivity of adjacent land uses to loss of sunlight.

Shadows cast by structures vary in length and direction throughout the day and from season to season. The longest shadows are cast during the winter months, when the sun is lowest on the horizon; the shortest shadows are cast during the summer months. Shadows are longer in the early morning and late afternoon. Shadow lengths increase during the low sun or winter season and are longest on December 21-22, the winter solstice. The winter solstice, therefore, represents the "worst-case" shadow condition and the time when the potential for loss of access to sunlight due to an adjacent structure is greatest. Shadow lengths are shortest on June 21-22, the summer solstice. Shadow lengths fall midway between the summer and winter extremes on March 20-21 and September 22-23, the spring and fall equinoxes, respectively.

Shadows are cast to the west by objects during the morning hours when the sun is coming up on the horizon in the east. During late morning and early afternoon, the shadows of objects move northerly and by late afternoon they are cast easterly as the sun moves across the sky from east to west.

Land uses are generally considered shadow-sensitive when sunlight is important to function, physical comfort, or the conduct of commerce. Shadow-sensitive land uses and features of concern as identified by the City's CEQA Thresholds of Significance include any public or quasi-public park, lawn, garden, or open space; shadow-sensitive significant historic resource; and solar collectors or buildings using passive solar heat collection.

Existing shadow conditions within the Project Area are typical of shadow conditions in developed urban environments. The Coliseum and Arena currently cast shadows, but generally within their own parking lots, and these shadows are limited by these stadia being partially below-grade. The elevated BART track also casts shadows, but generally on immediately adjacent streets and properties.

Wind

The Project Area lies within a climatological sub-region of the San Francisco Bay Area where the marine air that travels through the Golden Gate and across San Francisco Bay is a dominant weather factor. The Oakland-Berkeley Hills cause the westerly flow of marine air to split off to the north and south of Oakland; this phenomenon tends to diminish wind speeds in Oakland. Wind flow is generally from the west, and average wind speeds vary from season to season with the strongest average winds occurring during summer and the lightest average winds during winter. Together, the west, north-northwest and south-southeast winds are the most frequent winds that exceed 25 miles per hour (mph).

Wind conditions within the City result from the interaction of the approaching wind with the physical features of the environment: buildings, topography and landscape. Buildings much taller than surrounding structures intercept winds that might otherwise flow overhead, and bring those winds down the vertical face of the building to ground level, where they create ground-level wind and turbulence. These redirected winds can be incompatible with the intended uses of nearby ground-level spaces.

Ground-level wind acceleration near buildings is controlled by exposure, massing, and orientation. Exposure is a measure of the extent that the building extends above surrounding structures and into the wind stream. A building that is surrounded by taller structures is not likely to cause adverse wind acceleration at ground level, while even a small building can cause wind problems if it is freestanding and exposed. Massing is important in determining wind impact because it controls how much wind is intercepted by the structure and whether building generated wind acceleration occurs above ground or at ground level. Orientation determines how much wind is intercepted by the structure, a factor that directly determines wind acceleration. In general, buildings that are oriented with their long axis across the prevailing wind direction will have a greater impact on ground-level winds than a building oriented with its long axis along the prevailing wind direction.

Regulatory Setting

State

California Scenic Highway Program

The California Scenic Highway Program protects scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to identified scenic highways. “Officially Designated State Scenic Highways” must have a scenic corridor protection program, or its equivalent adopted by the local jurisdiction, to preserve the scenic quality of the corridor and address land use, development density, earthmoving, landscaping, building design, and outdoor advertising, including billboards, within the corridor. Within Oakland, I-580 from the San Leandro city limit to State Route 24 (post miles 34.5 to 45.1) is an officially designated State scenic highway. There are no officially designated or eligible State scenic highways within or immediately adjacent to the Project Area.

California Solar Shade Control Act

Under the California Solar Shade Control Act, no property owner shall allow a tree or shrub to be placed or to grow so as to cast a shadow greater than 10 percent at any one time between the hours of 10 a.m. and 2 p.m. over an existing solar collector on an adjacent property, used for water heating, space heating or cooling, or power generation. These limitations apply to the placement of new trees or shrubs, and do not apply to trees and shrubs that already cast a shadow upon that solar collector. The

location of a new solar collector is required to comply with local building and setback regulations, but must be setback not less than five feet from the property line, and must be no less than 10 feet above the ground.[2]

Title 24 Outdoor Lighting Zones

In 2001, the California Legislature passed a bill requiring the California Energy Commission (CEC) to adopt energy-efficient standards for outdoor lighting for both the public and private sector. In November 2003, the CEC adopted changes to the Building Energy Efficiency Standards within Title 24 of the California Code of Regulations. The standards specify outdoor lighting requirements for residential and non-residential development. The intent of these standards is to improve the quality of outdoor lighting and reduce the impacts of light pollution, light trespass and glare. The standards regulate lighting characteristics, such as maximum power and brightness, shielding, and use of sensor controls to turn lighting on and off. Different State lighting standards have been established for four lighting zone classifications. Based on population figures in the 2000 Census, areas can be designated by this State specification system as LZ1 (dark), LZ2 (low), LZ3 (medium), or LZ4 (high). Lighting standards for dark and rural areas are stricter, for example, to provide appropriate protection from new sources of light pollution and light trespass. According to the U.S. Census Bureau, the entire Project Area is defined as an urban area and is therefore designated as LZ3 per the CEC classification standards.[3]

Local

General Plan

Land Use and Transportation Element

The following City of Oakland General Plan Land Use and Transportation Element policies are relevant to the aesthetics, shadow and wind impacts of the proposed Project:

- *Policy W3.4: Preserving Views and Vistas.* Buildings and facilities should respect scenic viewsheds and enhance opportunities for visual access of the waterfront and its activities.
- *Policy T6.2: Improving Streetscapes*. The City should make major efforts to improve the visual quality of streetscapes. Design of the streetscape, particularly in neighborhoods and commercial centers, should be pedestrian-oriented and include lighting, directional signs, trees, benches, and other support facilities.
- *Policy N1.5: Designing Commercial Development*. Commercial development should be designed in a manner that is sensitive to surrounding residential uses.
- *Policy I/C4.3: Reducing Billboards*. Billboards should be reduced or eliminated in commercial and residential areas in Oakland neighborhoods through mechanisms that minimize or do not require the expenditure of city funds.
- *Policy N1.8: Making Compatible Development*. The height and bulk of commercial development in "Neighborhood Mixed-Use Center" and "Community Commercial" areas should be compatible with that which is allowed for residential development.

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[2] California Codes, Public Resource Code Sections 25980-25986. The California Public Resources Code can be found at http://www.leginfo.ca.gov/calaw.html.

[3] http://www.energy.ca.gov /title24/2008standards/outdoor lighting

- *Policy T6.5: Protecting Scenic Routes.* The City should protect and encourage enhancement of the distinctive character of scenic routes within the City, through prohibition of billboards, design review, and other means.
- *Policy N9.5: Marking Significant Sites.* Identify locations of interest and historic significance by markers, signs, public art, landscape, installations, or by other means.
- *Policy N8.2: Making Compatible Interfaces between Densities.* The height of development in urban residential and other higher density residential areas should step down as it nears lower density residential areas to minimize conflicts at the interface between the different types of development.

Open Space, Conservation and Recreation Element

The Open Space, Conservation and Recreation Element (OSCAR) promotes the preservation and good design of open space, and the protection of natural resources to improve aesthetic quality in Oakland. The following OSCAR policies are relevant to the aesthetics, shadow and wind impacts of the proposed Specific Plan:

- *Action OS-3.6.1: Landscape Screening Along Freeways.* Require retention of existing landscape screening as a condition of development approval for any property adjacent to Highway 13, Highway 580, or Highway 24.
- *Policy OS-2.1*: *Protection of Park Open Space*: Manage Oakland's urban parks to protect and enhance their open space character while accommodating a wide range of outdoor activities.
- *Policy OS-2.2*: *Schoolyard Enhancement*: Enhance the availability and usefulness of Oakland's schoolyards and athletic fields as open space resources by (a) working with the Oakland Unified School District to make schoolyards and school athletic fields available to the public during non-school hours; (b) softening the harsh appearance of schoolyards by varying paving materials, landscaping, and restoring elements of the natural landscape, and (c) encouraging private schools, including church schools, to improve the visual appearance of asphalt yard areas.
- *Policy OS-4.4: Elimination of Blighted Vacant Lots.* Discourage property owners from allowing vacant land to become a source of neighborhood blight, particularly in residential areas with large numbers of vacant lots.
- *Policy OS-9.3: Gateway Improvements.* Enhance neighborhood and city identity by maintaining or creating gateways. Maintain view corridors and enhance the sense of arrival at the major entrances to the city, including freeways, BART lines, and the airport entry. Use public art, landscaping, and signage to create stronger City and neighborhood gateways.
- *Objective OS-10: Scenic Resources.* Protect scenic views and improve visual quality.
- *Policy OS-10.1: View Protection*. Protect the character of existing scenic views in Oakland, paying particular attention to: (a) views of the Oakland Hills from the flatlands; (b) views of downtown and Lake Merritt; (c) views of the shoreline; and (d) panoramic views from Skyline Boulevard, Grizzly Peak Road, and other hillside locations.
- *Policy OS-10.2: Minimizing Adverse Visual Impacts*. Encourage site planning for new development which minimizes adverse visual impacts and takes advantage of opportunities for new vistas and scenic enhancement.
- *Policy OS-10.3: Underutilized Visual Resources*. Enhance Oakland's underutilized visual resources, including the waterfront, creeks, San Leandro Bay, architecturally significant buildings or landmarks, and major thoroughfares.

- *Objective OS-11: Civic Open Spaces.* To maintain and develop plazas, pocket parks, pedestrian walkways, and rooftop gardens in Oakland's major activity centers, and enhance the appearance of these and other public spaces with landscaping and art.
- *Policy OS-11.2: New Civic Open Space.* Create new civic open spaces at BART Stations, in neighborhood commercial areas, on parking garages, and in other areas where high-intensity redevelopment is proposed.
- *Policy OS-11.3: Public Art Requirements.* Continue to require public art as a part of new public buildings or facilities. Consider expanding the requirement or creating voluntary incentives to private buildings with substantial public spaces.
- *Action OS-11.3.1: Expanded Private Role in Providing Public Art.* Study possible approaches to expanding the private sector's role in the city's public art program. Options should include development incentives (density bonuses) and an in-lieu fee based on square footage for major downtown development.
- *Policy OS-11.4: Siting Public Art.* Site public art with sensitivity to its surroundings. Locate public art in a manner which does not reduce useable open space in City parks or impede recreational activities.
- *Objective OS-12: Street Trees.* "Green" Oakland's residential neighborhoods and commercial areas with street trees.
- *Policy OS-12.1: Street Tree Selection.* Incorporate a broad and varied range of tree species which is reflected on a city-maintained list of approved trees. Street tree selection should respond to the general environmental conditions at the planting site, including climate and micro-climate, soil types, topography, existing tree planting, maintenance of adequate distance between street trees and other features, the character of existing development, and the size and context of the tree planting area.
- *Action OS-12.1.1: Adoption of Street Tree Plan.* Formally adopt a City of Oakland Street Tree Plan which addresses species selection for major streets and neighborhoods and contains criteria for tree planting, maintenance, and removal within the Plan, include a new procedure for implementing, amending, and updating the Plan, including changes to tree selection.
- *Action OS-12.1.2: Priorities for Planting.* Identify streets and neighborhoods with the highest priority for street trees and establish a planting program targeting these areas.
- *Policy CO-7.4*: Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works reasons.

Scenic Highways Element

The Scenic Highways Element seeks to protect and enhance the distinctive character of scenic routes within the City. I-580 is identified as a designated scenic route in the Scenic Highways Element. Interstate 980 is identified as a route that could be considered for possible future designation. The following Scenic Highways Element policies are relevant to the aesthetics impacts of the proposed Specific Plan (even though I-880 is not an identified scenic route in the Element):

- Overhead utilities should be undergrounded along all freeways, scenic routes, and major streets. Programs should be developed to increase the present rate of undergrounding existing overhead utilities.
- Billboards should be prohibited and other signs should be controlled along freeways and parkways.

Oakland Municipal Code

The following provisions of the Oakland Municipal Code are relevant to the aesthetics impacts of the proposed Specific Plan:

Title 8: Health and Safety

- *Chapter 8.10: Graffiti*. This chapter is to protect public and private property from acts of defacement by graffiti.
- *Chapter 8.24: Property Blight*. This chapter requires a level of maintenance of residential, commercial, and industrial property that will protect and preserve the livability, appearance, and social and economic stability of the City.

Title 12: Streets, Sidewalks and Public Places

- *Chapter 12.32: Street Trees*. This chapter outlines the provisions for protecting street trees. No new development shall make any tree or shrub improvement, or destroy, deface, or mutilate any tree or shrub along a public street without having first obtained a written permit from the City of Oakland Director of Parks and Recreation.
- *Chapter 12.36: Protected Trees*. It is the interest of the City of Oakland and the community to protect and preserve trees by regulating their removal; to prevent unnecessary tree loss and minimize environmental damage from improper tree removal; to encourage appropriate tree replacement plantings; to effectively enforce tree preservation regulations; and to promote the appreciation and understanding of trees.

Title 17: Planning

Under the Planning Code, every zone within the City requires that new residential developments are subject to a design review process. No Local Register Property, residential facility, mixed-use development, telecommunications facility, sign, or other associated structure shall be constructed, established, or altered in exterior appearance unless the plans have been approved pursuant to the design review procedure in Chapter 17.136. Title 17 also outlines sign limitations, height restrictions, usable open space requirements, and minimum yards for residential developments located in each zone.

- *Chapter 17.124: Landscaping and Screening Standards*. This chapter prescribes standards for development and maintenance of planting, fences, and walls; for the conservation and protection of property; and through improvements of the appearance of individual properties, neighborhoods, and the City.
- *Chapter 17.136: Design Review Procedure*. In accordance with Chapter 17.136 of the Oakland Planning Code, future individual development projects within the Project Area would be subject to Design review. Design review considers the visible features of a project and the project's relationship to its physical surroundings. Although independent of CEQA and the EIR process, design review is focused on ensuring quality design, and on avoiding potentially adverse aesthetic effects. Projects are evaluated based on site, landscaping, height, bulk, arrangement, texture, materials, colors, appurtenances, potential shadowing effects on adjacent properties, and other characteristics.

Standard Conditions of Approval

The City's Standard Conditions of Approval relevant to this aesthetics, shadow and wind chapter are listed below. These Standard Conditions of Approval would be adopted as mandatory requirements of each individual future project within the Project Area as it is approved by the City, and would ensure that significant impacts would not occur.

SCA Aesthetics-1: Lighting Plan. *Prior to the issuance of an electrical or building permit.* The proposed lighting fixtures shall be adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties. Plans shall be submitted to the Planning and Zoning Division and the Electrical Services Division of the Public Works Agency for review and approval. All lighting shall be architecturally integrated into the site.

SCA Aesthetics-2: Tree Removal Permit. *Prior to issuance of a demolition, grading, or building permit*. Prior to removal of any protected trees, per the Protected Tree Ordinance, located on the project site or in the public right-of-way adjacent to the project, the project applicant must secure a tree removal permit from the Tree Division of the Public Works Agency, and abide by the conditions of that permit.

SCA Aesthetics-3: Tree Replacement Plantings. *Prior to issuance of a final inspection of the building permit*. Replacement plantings shall be required for erosion control, groundwater replenishment, visual screening and wildlife habitat, and in order to prevent excessive loss of shade, in accordance with the following criteria:

a. No tree replacement shall be required for the removal of nonnative species, for the removal of trees which is required for the benefit of remaining trees, or where insufficient planting area exists for a mature tree of the species being considered.

b. Replacement tree species shall consist of *Sequoia sempervirens* (Coast Redwood), *Quercus agrifolia* (Coast Live Oak), *Arbutus menziesii* (Madrone), *Aesculus californica* (California Buckeye) or *Umbellularia californica* (California Bay Laurel) or other tree species acceptable to the Tree Services Division.

c. Replacement trees shall be at least of twenty-four (24) inch box size, unless a smaller size is recommended by the arborist, except that three fifteen (15) gallon size trees may be substituted for each twenty-four (24) inch box size tree where appropriate.

d. Minimum planting areas must be available on site as follows:

    i. For *Sequoia sempervirens*, three hundred fifteen square feet per tree;

    ii. For all other species listed in #2 above, seven hundred (700) square feet per tree.

e. In the event that replacement trees are required but cannot be planted due to site constraints, an in lieu fee as determined by the master fee schedule of the city may be substituted for required replacement plantings, with all such revenues applied toward tree planting in city parks, streets and medians.

f. Plantings shall be installed prior to the issuance of a final inspection of the building permit, subject to seasonal constraints, and shall be maintained by the project applicant until established. The Tree Reviewer of the Tree Division of the Public Works Agency may require a landscape plan showing the replacement planting and the method of irrigation. Any replacement planting which fails to become established within one year of planting shall be replanted at the project applicant's expense.

SCA Aesthetics-4: Tree Protection During Construction. *Prior to issuance of a demolition, grading, or building permit*. Adequate protection shall be provided during the construction period for any trees which are to remain standing, including the following, plus any recommendations of an arborist:

a. Before the start of any clearing, excavation, construction or other work on the site, every protected tree deemed to be potentially endangered by said site work shall be securely fenced off at a distance

from the base of the tree to be determined by the City Tree Reviewer. Such fences shall remain in place for duration of all such work. All trees to be removed shall be clearly marked. A scheme shall be established for the removal and disposal of logs, brush, earth and other debris which will avoid injury to any protected tree.

b. Where proposed development or other site work is to encroach upon the protected perimeter of any protected tree, special measures shall be incorporated to allow the roots to breathe and obtain water and nutrients. Any excavation, cutting, filing, or compaction of the existing ground surface within the protected perimeter shall be minimized. No change in existing ground level shall occur within a distance to be determined by the City Tree Reviewer from the base of any protected tree at any time. No burning or use of equipment with an open flame shall occur near or within the protected perimeter of any protected tree.

c. No storage or dumping of oil, gas, chemicals, or other substances that may be harmful to trees shall occur within the distance to be determined by the Tree Reviewer from the base of any protected trees, or any other location on the site from which such substances might enter the protected perimeter. No heavy construction equipment or construction materials shall be operated or stored within a distance from the base of any protected trees to be determined by the tree reviewer. Wires, ropes, or other devices shall not be attached to any protected tree, except as needed for support of the tree. No sign, other than a tag showing the botanical classification, shall be attached to any protected tree.

d. Periodically during construction, the leaves of protected trees shall be thoroughly sprayed with water to prevent buildup of dust and other pollution that would inhibit leaf transpiration.

e. If any damage to a protected tree should occur during or as a result of work on the site, the project applicant shall immediately notify the Public Works Agency of such damage. If, in the professional opinion of the Tree Reviewer, such tree cannot be preserved in a healthy state, the Tree Reviewer shall require replacement of any tree removed with another tree or trees on the same site deemed adequate by the Tree Reviewer to compensate for the loss of the tree that is removed.

f. All debris created as a result of any tree removal work shall be removed by the project applicant from the property within two weeks of debris creation, and such debris shall be properly disposed of by the project applicant in accordance with all applicable laws, ordinances, and regulations.

Impacts, Standard Conditions of Approval and Mitigation Measures

This section discusses potential impacts to aesthetics or from shadow and wind that could result from implementation of the proposed Project. It presents the thresholds of significance, describes the approach to the analysis, and identifies potential impacts and mitigation measures, as appropriate.

Thresholds of Significance

The proposed Project would have a significant impact on the environment if it would:

1. Have a substantial adverse effect on a public scenic vista [NOTE: Only impacts to scenic views enjoyed by members of the public generally (but not private views) are potentially significant.];
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, located within a state or locally designated scenic highway;

3. Substantially degrade the existing visual character or quality of the site and its surroundings;[4]
4. Create a new source of substantial light or glare which would substantially and adversely affect day or nighttime views in the area;
5. Introduce landscape that would now or in the future cast substantial shadows on existing solar collectors (in conflict with California Public Resource Code sections 25980-25986);
6. Cast shadow that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors;
7. Cast shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space;
8. Cast shadow on an historic resource, as defined by CEQA Guidelines section 15064.5(a), such that the shadow would materially impair the resource's historic significance by materially altering those physical characteristics of the resource that convey its historical significance and that justify its inclusion on or eligibility for listing in the National Register of Historic Places, California Register of Historical Resources, Local Register of historical resources, or a historical resource survey form (DPR Form 523) with a rating of 1-5;
9. Require an exception (variance) to the policies and regulations in the General Plan, Planning Code, or Uniform Building Code, and the exception causes a fundamental conflict with policies and regulations in the General Plan, Planning Code, and Uniform Building Code addressing the provision of adequate light related to appropriate uses; or
10. Create winds that exceed 36 mph for more than one hour during daylight hours during the year. [NOTE: The wind analysis only needs to be done if the project's height is 100 feet or greater (measured to the roof) and one of the following conditions exist: (a) the project is located adjacent to a substantial water body (i.e., Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the project is located in Downtown. Downtown is defined in the Land Use and Transportation Element of the General Plan (page 67) as the area generally bounded by West Grand Avenue to the north, Lake Merritt and Channel Park to the east, the Oakland Estuary to the south and I-980/Brush Street to the west. The wind analysis must consider the project's contribution to wind impacts to on- and off-site public and private spaces. Only impacts to public spaces (on- and off-site) and off-site private spaces are considered CEQA impacts. Although impacts to on-site private spaces are considered a planning-related non-CEQA issue, such potential impacts still must be analyzed.]

Approach to Analysis

For aesthetic impacts, the height and massing models developed for the Coliseum City Master Plan were evaluated in comparison to existing conditions. The Master Plan represents the proposed Project evaluated in this EIR within the Coliseum District. Notable visual changes to the Coliseum District under the proposed Project include:

- Two news sports stadiums in Sub-Area A, which will likely be as or taller than the existing Coliseum.

[4] For projects requiring design review, briefly evaluate the project's consistency with the applicable design review criteria. Projects consistent with the design review criteria will generally be found to result in a less than significant impact.

- A new Arena in Sub-Area B, between I-880 and Edgewater Drive, likely similar in size to the existing Arena.
- Mid-rise residential development east of the BART tracks and north of the BART station.
- High-rise development east of the BART tracks and immediately adjacent to the BART station.
- High-rise residential mixed-use development between the new baseball and football stadiums, organized around a public plaza.
- A mid-rise concourse running east-west through Sub-Area A, consisting of a multi-story parking garage topped with retail uses and an open space plaza. The concourse will also provide a pedestrian and transit bridge connecting the BART station with the sports and entertainment district and crossing I-880 to link with the new Arena.
- A re-routing of the existing overhead transmission lines, as discussed in Chapter 4.14 Utilities and Service Systems, to accommodate the new football stadium. Figure 4.14-2 in that chapter shows the four relocation options which could occur under the proposed Project:
  - Option 1 is a temporary relocation, involving retention of most of the overhead transmission lines within the Coliseum District, and relocating the minimum length of line necessary. This would push a segment south of the Coliseum closer to Hegenberger Road. This alignment could remain as a permanent relocation, but would likely be in conflict with other future development at the Coliseum District.
  - Option 2 involves relocating the overhead transmission lines in an alignment adjacent to, or within the Caltrans right-of-way along I-880. The feasibility of this alignment will depend on the required easement width and approval of encroachment permits by Caltrans.
  - Option 3 routes the overhead transmission lines to a new underground alignment adjacent to the Hegenberger right-of-way. This could complicate future development plans for properties along Hegenberger Road, and potentially conflict with BART support structures and the realignment of Elmhurst Creek.
  - Option 4 is also an underground alignment which would place new underground conduits with an easement adjacent to the existing EBMUD South Interceptor main. This alignment may further constrain future development at the Coliseum District since it will require an approximately 100’ wide easement. However, the existing EBMUD Interceptor easement is already a development constraint that has been incorporated into the proposed Project.
- An enhanced BART station / transit hub, which is planned to include the following improvements:
  - A side platform located over San Leandro Street to increase station capacity. The side platform would extend an additional 25 feet from the existing station over San Leandro Street. To accommodate vertical circulation serving the side platform, San Leandro Street would need to be realigned approximately 17 feet to the west.
  - Alternative capacity improvements could include an extension of the existing platform to the north (about 350 feet), or a side platform on the east side of the station if the Union Pacific right-of-way were to be acquired.
  - San Leandro Street entrance and intermodal improvements.
  - New fare gate arrays at the ground level concourse to improve passenger distribution and bring the current elevator into the paid area.

  - New vertical circulation to improve passenger flows within the station.
  - Construct at-street station improvements so both non-BART and BART patrons can cross between San Leandro Street and Snell Street (requires coordination with railroad for crossing railroad right-of-way).
  - Construct the elevated concourse from the new stadiums to the BART Station toward the south end of the BART platform and extend the concourse over the BART platform 200 to 300 feet to provide multiple vertical circulation opportunities between the BART platform and the elevated concourse.
  - Provide a visual link between the elevated concourse and the street-level access so special event patrons will use both the concourse and the street level access to travel to and from BART. This is needed distribute riders more evenly across platform.
  - An upper concourse with protective canopy that would connect directly to the elevated concourse (including fare gates at the upper concourse level) and extend along the BART platform to distribute passengers along the platform. The upper concourse may also further connect to the eastern side of the station.
- Mid- to high-rise science and technology and hotel developments along the western edge of Sub-Area A, fronting I-880.
- An enhanced natural environment for Damon Slough, with recreation paths along it.
- A restored wetland between Damon Slough and 66th Avenue on the Cruise America site.

The conceptual development rendered for Plan Buildout in the Master Plan was also utilized to evaluated possible aesthetic impacts of the proposed Project. Notable visual changes under Plan Buildout include:

- Redevelopment of Sub-Area B with mid-rise residential and science and technology uses.
- Improved access to the Sub-Area B shoreline and its integration into adjacent development and the additional of public plazas or parklets throughout the Sub-Area.
- Continued infill development and redevelopment in Sub-Areas C and D, which may result in two- or three-story structures in an area dominated by single story buildings.
- Removal of the mitigated wetland in Sub-Area B and the creation of a larger wetland in Sub-Area E on currently vacant land.
- Creation of a new inlet of San Leandro Bay into Sub-Area B.

For shadow impacts, a shadow study was prepared of the proposed Coliseum District development (the Coliseum City Master Plan) at 9:00 a.m., 12:00 p.m., and 3:00 p.m. on the Spring Equinox, Summer Solstice, Fall Equinox, and Winter Solstice. That study is provided in **Appendix 4.1A**.

Scenic Vista

Coliseum District

Impact Aesthetics 1A: New development of the Coliseum District would not have a substantial adverse effect on a public scenic vista. **(LTS)**

Development of the Coliseum District could block the existing expansive views of the Oakland hills from that portion of I-880 that passes through the Project Area and from the Coliseum/Airport BART station. Relocation of overhead transmission lines along I-880 could also affect views of the hills, although it would not block the vistas; furthermore the existing view from I-880 incorporates billboards, a large parking lot, and streetlights, so the power lines and related towers would generally not result in a worsened view. In addition, this alignment would remove the power lines from their current alignment above Damon Slough, resulting in greatly improved views of that waterway, which will be enhanced under the proposed Project.

Conformance with the following OSCAR policies, which should result in view corridors being maintained from public rights-of-way to the Oakland hills, would keep this impact at a **less than significant** level:

- *Policy OS-10.1: View Protection*. Protect the character of existing scenic views in Oakland, paying particular attention to: (a) views of the Oakland Hills from the flatlands; (b) views of downtown and Lake Merritt; (c) views of the shoreline; and (d) panoramic views from Skyline Boulevard, Grizzly Peak Road, and other hillside locations.
- *Policy OS-10.2: Minimizing Adverse Visual Impacts*. Encourage site planning for new development which minimizes adverse visual impacts and takes advantage of opportunities for new vistas and scenic enhancement.

Mitigation Measures

None needed

Plan Buildout

Impact Aesthetics 1B: Future development pursuant to Plan Buildout would not have a substantial adverse effect on a public scenic vista. **(LTS)**

Plan Buildout would not be expected to block or otherwise adversely affect scenic views or scenic resources. The Project Area is essentially built out and is generally limited terms of scenic views. In addition to the effects discussed under Impact Aesthetics-1A, the proposed Project would not impact the views across San Leandro Bay from the Project Area and would improve public access to the shoreline. Along with the two policies listed under Impact Aesthetics-1A, implementation of the following General Plan policy would keep this impact at a **less than significant** level:

- *Policy W3.4: Preserving Views and Vistas.* Buildings and facilities should respect scenic viewsheds and enhance opportunities for visual access of the waterfront and its activities.

Mitigation Measures

None needed

Scenic Resources

Coliseum District and Plan Buildout

Impact Aesthetics 2: Future development would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, located within a state or locally designated scenic highway. **(No Impact)**

There are no designated or eligible scenic highways in or adjacent to the Project Area.

Mitigation Measures

None needed

Visual Character and Quality

Coliseum District and Plan Buildout

Impact Aesthetics 3: Future development would not substantially degrade the existing visual character or quality of the site and its surroundings. **(LTS)**

As described in the Environmental Settings section, the Project Area is a mix of uses that range from industrial and asphalt dominated in Sub-Area A, to modest landscaped office park in Sub-Areas B, C, and D, to the varied Hegenberger corridor to the open space along the bay shoreline and in Sub-Area E. Generally speaking, the proposed Project would provide a positive improvement to the existing visual character of the Project Area, transforming Sub-Area A and portions of Sub-Area B from a largely vacant and underused location to a populated district with new sports and entertainment facilities, new housing and office buildings, as well as public plazas and landscaped streets. Relocating the existing high tension power lines will result in, at worst, no net change in visual character and likely an improvement if the lines are removed from Damon Slough and if they are undergrounded.

The investments in developing Sub-Areas A and B are expected to lead to further investment in Sub-Areas C and D which will build on their existing character. The proposed Project will not impact the Shoreline Park but will increase visibility and access to it. Furthermore the proposed Project will greatly improve the visual and biological state of Damon Slough and Elmhurst Creek, as well as the vacant parcel in Sub-Area E. Views into the Project Area from its surroundings will look upon new buildings and landscaping rather than parking lots. Consequently, this impact is **less than significant.**

Mitigation Measures

None needed

Light and Glare

Coliseum District and Plan Buildout

Impact Aesthetics 4: Future development could create a new source of substantial light or glare which would substantially and adversely affect day or nighttime views in the area. **(LTS with SCA)**

Development of the proposed Project would create new sources of light or glare, but these new sources would be consistent with the existing light and glare conditions in the area, due to the current Coliseum complex. The Project Area is already an urbanized environment with associated light and glare. Over time, surface parking lots and associated flood lighting would be replaced with taller buildings. These structures would introduce light from upper story office and residential uses as well as ground level lighting associated with commercial uses and office or residential entryways. Individual developments would not be expected to change or affect day or nighttime views as a result of increased light or glare

to a significant extent. Such projects would be subject to standard project review and approval processes as required by the City of Oakland, and may require additional design review.

Standard Conditions of Approval

Individual projects would be required to implement SCA Aesthetics-1: Lighting Plan, which would minimize potential impacts resulting from lighting and ensure that lighting and glare effects remain **less than significant**.

Mitigation Measures

None needed

Shadows

Coliseum District

Impact Aesthetics 5A: New development of the Coliseum District could introduce structures and/or landscape that would now or in the future cast substantial shadows on existing solar collectors and could cast a shadow that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors. New development within the Coliseum District would not cast a shadow that would substantially impair the beneficial use of a public park, lawn, garden, or open space, nor would it cast a shadow on a historic resource such that the shadow would materially impair the resource's historic significance. **(LTS with MM)**

Shadows on Existing Solar Collectors

Figure 4.1-1 shows the location of permitted solar panels in and around the Project Area. Within the immediately vicinity of the Coliseum District there are two structures that have existing solar collectors:

- the AC Transit depot along San Leandro Street north of 66th Avenue, and
- the Lion Creek Crossings apartments located between 66th Avenue, 70th Avenue, the BART tracks, and extending to the east. The Lion Creek buildings along the BART tracks have photovoltaic solar collectors, as do the buildings that extend along 66th Avenue.

Appendix 4.1A includes shadow studies of the proposed Project at 9:00 a.m., 12:00 p.m., and 3:00 p.m. on the Spring Equinox, Summer Solstice, Fall Equinox, and Winter Solstice dates. Based on these studies, development within the Coliseum District would not cast a shadow on the AC Transit depot. However, during the winter months, new structures in the Coliseum District could cast shadows on some of the solar collectors at the Lion Creek Crossings development.

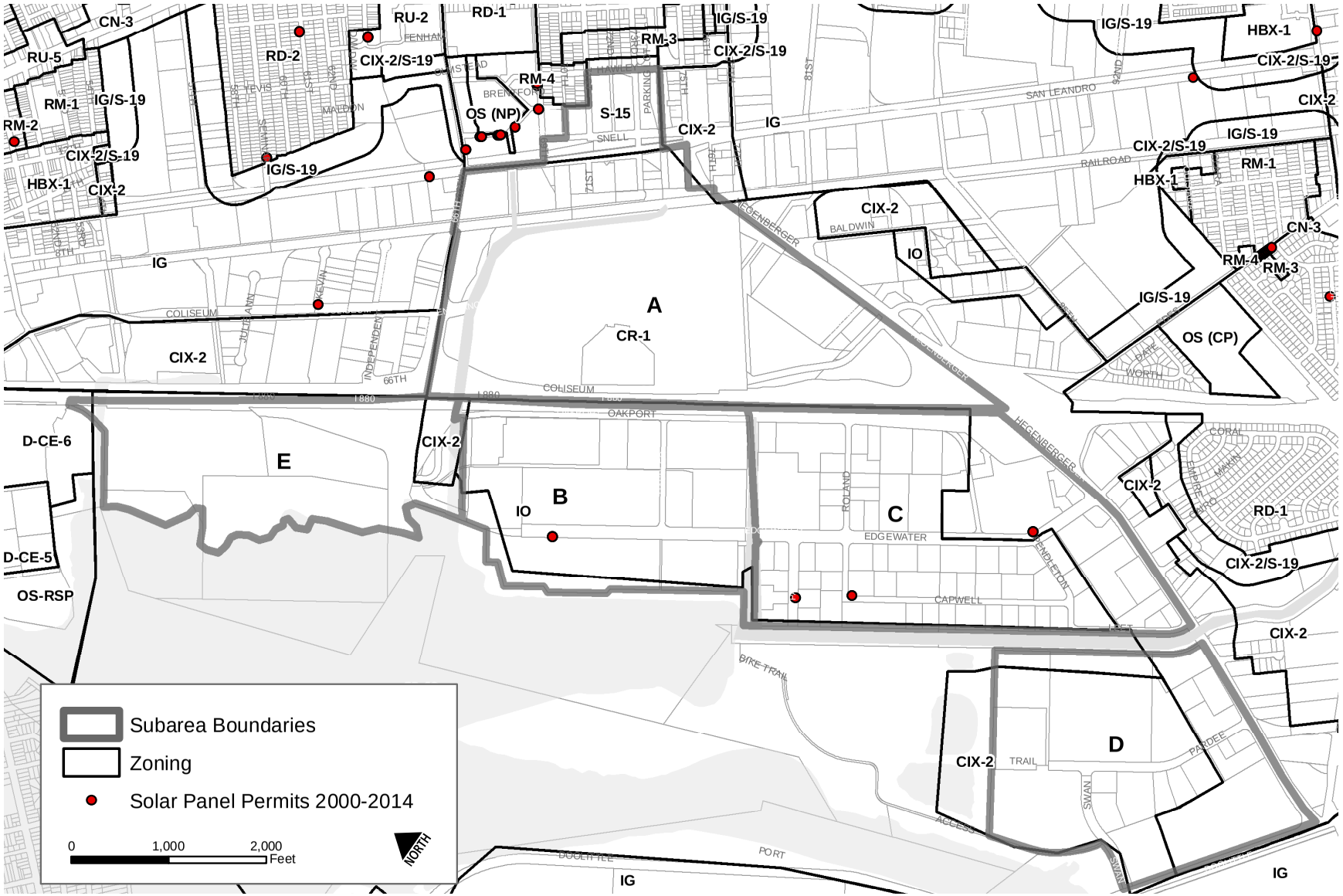

Figure 4.1-1
Permitted Solar Panels In and Around Project Area

Source: City of Oakland, Department of Planning & Building (January 2014)

In general, solar collectors collect sun power during the period from two hours prior and two hours post solar noon—the time at which the sun is directly south. Due to daylight savings, this period is approximately 10 AM to 2 PM during winter months. The solar collectors on the Lion Creek Crossings buildings would be unshaded between 9 AM and 12 Noon, with shadows being cast sometime between 12 noon and 3 PM during winter months. While this additional shading may slightly reduce the ability of solar collectors at this address to collect sun power, the new shadow would likely not compromise their effectiveness and not result in a substantial loss of power, income, or use from the collectors. Furthermore, the proposed development within the Coliseum District would only shade some of the solar collectors during the winter months, not all of the collectors.

Shadows that Impair Solar Functions

The Lion Creek Crossings buildings located between 69th and 70th Avenues on the eastern edge of Snell Street are designed to incorporate passive solar (building orientation or shading). Per the shadow studies in Appendix 4.1A, development of the Coliseum District would cast winter shadows on the Lion Creek Crossings buildings.

Shadow on Park or Open Space

Development of the Coliseum District as proposed would cast shadows on Damon Slough in the afternoons for most of the year and during winter mornings. Further, the proposed new Ballpark may cast a shadow on the proposed wetlands enhancements along Damon Slough in the early afternoons, depending on the ballpark design. Given that these shadows do not occur over the entire day and they would not impact open space that is actively used by the public on a regular basis, this is a less than significant impact.

The pedestrian concourse from the BART station to the new Stadium will pass over Damon Slough and create a shadow at all times. The existing pedestrian bridge currently casts a shadow, but the proposed new concourse would be wider than the existing bridge and would cast a larger shadow on Damon Slough. While Damon Slough is currently inaccessible to the public, the proposed Project calls for a public pathway along its western edge. This shadow would be relatively minor and would not shadow an existing public open space, but new public space being made available as a result of the proposed Project, therefore this is a less than significant impact.

It is unlikely, but possible, that the proposed BART station improvements would cast a shadow onto a portion of Damon Slough that is located between San Leandro Street and the Union Pacific railroad tracks. This channelized segment of Damon Slough is not an existing visual asset, it is not readily visible to the public and is not considered high-value wildlife habitat, and so this would be a less than significant impact.

Finally, if the existing overhead transmission lines are re-routed away from Damon Slough, the proposed Project would eliminate the existing shadows cast by these power lines and the support towers currently located along Damon Slough.

Shadow on Historic Resource

Chapter 4.4: Historic Resources indicates that the only identified historic resource within the Coliseum District is the Coliseum Complex itself. The proposed Project calls for the removal of the Coliseum Complex, in which case the potential shadowing of the historic resource would not be relevant. If the Coliseum Complex were to be retained and new tall structures build in the area surrounding it, the shadows of new tall buildings would not materially alter the character-defining features of the remaining portions of the Complex.

The shadow study shows that the only shadows that Coliseum District development would cast beyond the Project Area are to the northeast of San Leandro Street. Winter shadows would be cast on the Lions Crossing development as well as on structures in the surrounding neighborhood (mostly single family homes) and several industrial uses in the following areas:

- From 69th Avenue to 71st Avenue, about halfway between the Project Area boundary and Hawley Street.
- On the south side of 72nd Avenue on the first three or four parcels to the east of Hawley Court.
- On the north side of 73rd Avenue, about two-thirds of the block to the east of Hawley Court.

There are no known registered historic resources within these locations. Furthermore, the shadows would only be cast on these areas for part of the day (after 12:00 noon until sunset) for part of the year (between the autumn and spring equinoxes). The temporal nature of these shadows would not materially impair the significance of any of historic resources that may exist in these areas.

Standard Conditions of Approval

There are no SCAs that apply.

However, conformance with the City's design review process per Chapter 17.136 of the Oakland Planning Code, will include an evaluation of the project's potential shadowing effects on adjacent properties to ensure that a proposed structure that created shadows on those collectors alter its design to reduce this impact if at all feasible.

Mitigation Measures

MM Aesthetics 5A-1: If feasible, new structures and landscape should be sited and designed to avoid casting winter shadows specifically on the photovoltaic panels at Lion Creek Crossings apartments, such that solar effectiveness would be compromised and result in a substantial loss of power, income, or use. If the casting of shadows on the Lion Creek Crossings development cannot be avoided, the developer shall work with the owners of Lion Creek Crossings to provide compensatory funding for any extra power cost that could be incurred for increased utility bills from affected solar collectors.

Significance after Mitigation

Implementation of Mitigation Measure Aesthetics would reduce this impact to a **less than significant** level by avoiding the impact or ensuring that no financial loss as a result of impaired solar collectors results.

Plan Buildout

Impact Aesthetics 5B: Future development pursuant to Plan Buildout could introduce additional new buildings and landscape (beyond that discussed above for the Coliseum District), but this new development would not cast substantial shadows on existing solar collectors; would not cast shadows that substantially impair the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors; would not cast shadows that substantially impair the beneficial use of a public park, lawn, garden, or open space; and would not cast shadows that materially impair the significance of an historic resource. **(LTS)**

Shadows on Existing Solar Collectors

As shown in **Figure 4.1-1**, there are four additional structures within the Project Area (outside of the Coliseum District) that have existing permitted solar collectors:

- the City's corporation yard in Sub-Area B,
- a privately owned building at 7730 Pardee Lane in Sub-Area C
- another private building at 7801 Capwell Drive in Sub-Area C, and
- one or more structures within the shopping center at Edgewater Drive and Hegenberger Road.

The proposed Project would redevelop the City's corporation yard and replace it with new uses, and therefore there would be no impact regarding shadows on that particular solar collector. New development in Sub-Area C could result in shadows being cast on the solar collectors at the Pardee Lane building, the Capwell building and at the Edgewater Drive retail center. However, no details regarding the location or heights of new buildings within Sub-Area C are known with any certainty at this time, such that the extent of possible new shadows cannot be known.

Shadow on Park or Open Space

Plan Buildout as proposed could cast shadows from new structures and landscaping in Sub-Area B on Damon Slough, San Leandro Bay, and the MLK Shoreline Park at 9:00 AM through 12:00 noon on the Winter Solstice. New structures and landscaping in Sub-Area C could cast shadows on Elmhurst Creek and the MLK Shoreline Park from 9:00 AM to 12:00 noon on the Winter Solstice. Given that these shadows only occur during less than half the year, during less than half the day, and only impact small portions of the Shoreline Trail, Damon Slough trail and these waterways, this is a less than significant impact.

Shadow on Historic Resource

Chapter 4.4 identifies three structures within the Project Area and outside of the Coliseum District that could potentially be considered historic resources:

- Fire Station Engine No. 27 at 8501 Pardee Drive,
- UPS at 8400 Pardee Drive, and
- Warehouse Union Local 6 Building at 99 Hegenberger Road.

These three historic resources are all located in Sub-Area D, which is planned for airport-related logistics and warehouse uses. These uses are unlikely to be more than one or two stories in height. Future uses along Hegenberger Road such as hotels could be tall enough to cast a shadow on adjacent structures, but such shadows would not materially impair the character-defining features of these resources and this impact would be less than significant.

Standard Conditions of Approval

There are no SCAs that apply.

Conformance with the City's design review process per Chapter 17.136 of the Oakland Planning Code would include an evaluation of each project's potential shadowing effects on adjacent properties, and would seek to reduce shadows created by new buildings on these identified solar collectors to the extent feasible.

Mitigation Measures

None required

Adequate Light

Coliseum District and Plan Buildout

Impact Aesthetics 6: Future development would not require an exception or variance to the policies and regulations in the General Plan, Planning Code, or Uniform Building Code that causes a fundamental conflict with policies and regulations addressing the provision of adequate light related to appropriate uses. **(No Impact)**

The proposed Project does not anticipate requiring a variance or exception to existing regulations regarding provision of adequate light. Conformance with the City's design review process, per Chapter 17.136 of the Oakland Planning Code would ensure that proposed structures will provide adequate light for its occupants and users as well as those in other structures.

Mitigation Measures

None needed

Winds

Coliseum District

The threshold of significance does not apply to development in the Coliseum District, as it is neither located adjacent to a substantial water body (it is ¾ miles away from the Bay shore), nor is it located in Downtown.

Plan Buildout

Impact Aesthetics 7B: Future development pursuant to Plan Buildout could create winds that exceed 36 mph for more than one hour during daylight hours during the year. **(LTS with MM)**

Portions of the Project Area within Sub-Areas B and C are located adjacent to San Leandro Bay. It is possible that development within Sub-Area B may ultimately propose new structures taller than 100 feet in height (measured to the roof) along the shoreline. At this time, the precise design for any such structures is unknown, and a wind study that would provide accurate information cannot be conducted. However, wind effects at these locations could be significant.

Standard Conditions of Approval

There are no SCAs that apply.

Mitigation Measures

MM Aesthetics 7: Any structures proposed within 100 feet of San Leandro Bay that would exceed 100 feet in height must undertake a wind study consistent with the requirements of the City of Oakland. The wind analysis must consider the project's contribution to wind impacts to on- and off-site public and private spaces. Based on the findings of the wind analysis, the structure must

be redesigned to prevent it from creating winds in excess of 36 mph for more than one hour during daylight hours. Significance after Mitigation

Implementation of Mitigation Measure Aesthetics 7 would reduce this impact to a less than significant level.

Cumulative Analysis

Cumulative Impact Aesthetic 8: Cumulative development within the Project Area and its surroundings would change the visual character of the area toward a less industrial and more urban character, with more commercial, residential and sports/entertainment uses than exist under existing conditions. The policies of the Specific Plan and other existing plans, regulations and guidelines (including Design Review and the City's Standard Conditions of Approval) would address visual quality. Cumulative aesthetics, shadow and wind impacts would be less than significant. (**LTS**)

Development of the proposed Project, combined with other reasonably foreseeable development, would cumulatively change the visual character of the areas toward a less industrial and more intensive, urban character. The policies of the Specific Plan and other existing plans, regulations and guidelines, including Design Review and the City's Standard Conditions of Approval, would adequately address localized visual quality and compatibility. In addition, the Specific Plan would be expected to result in beneficial impacts or less-than-significant impacts with respect to visual character and quality, scenic vistas, scenic highways, light and glare, and shadows.

Development of the proposed Project, combined with other reasonably foreseeable development, would cumulatively affect views of the Oakland hills from a segment of I-880 and possibly from the BART station platform. New, tall buildings may block some view corridors. However, these views are not considered designated views or specially designated scenic resources and this would not be a cumulatively significant impact. The proposed Project and other reasonably foreseeable development would not block existing views across San Leandro Bay, as all new development would be required to maintain a 100-foot setback from the shoreline edge. The proposed Project and other reasonably foreseeable development will add landscaped roadways and new structures within in Sub-Areas A and B, replacing vacant structures, blighted industrial buildings and parking lots, and will also enhance the appearance and habitat functionality of Damon Slough. Overall, cumulative development would not substantially obstruct scenic vistas or degrade the visual character of the Project Area.

Cumulative development would generally increase nighttime lighting. However, all future cumulative development will be required to adhere to Title 24 lighting power allowances and implementation of City SCAs pertaining to *Lighting Plans*, and cumulative light and glare impacts would be less than significant.

Development of the proposed Project, combined with other reasonably foreseeable development, would cumulatively cast new shadows on existing solar collectors and historic structures. This impact would generally be mitigated to a less than significant level by implementation of the City's Design Review process.

The Coliseum District does not lie within the area requiring modeling for evaluation of wind impacts and thus would not result in a considerable contribution to any significant cumulative impacts related to wind. Future cumulative development located within 100 feet of San Leandro Bay that would exceed

100 feet in height could result in a cumulative wind impact, but such effects cannot be known with certainty at this point in time.

4.2

Air Quality

This section considers the air quality implications of the Coliseum Area Specific Plan in Alameda County. This air quality analysis is conducted to quantify the regional and localized pollutant emission changes associated with development of the Coliseum District and Plan Buildout and to compare these changes to air quality standards established by local, state, and federal air quality regulatory agencies and to significance thresholds recommended by those agencies.

This section provides an overview of the existing air quality conditions, a summary of local, state, and federal air quality regulations and guidelines, and an analysis of the potential air quality impacts associated with the Coliseum Area Specific Plan. The methods of emissions analysis for short-term construction, long-term operations, cumulative risks from toxic air contaminants (TACs), including those emitted from local mobile and stationary sources, and odors, are consistent with the current recommendations of the Bay Area Air Quality Management District (BAAQMD) and the California Air Resources Board (ARB). Mitigation measures are recommended, as necessary, to reduce significant air quality impacts.

Environmental Setting

Regional Climate, Topography, and Meteorology

Ambient concentrations of air pollutant emissions are determined by the amount of emissions released by pollutant sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and the presence of sunlight. Existing air quality conditions in the Planning Area are determined by such natural factors as topography, meteorology, and climate in addition to the amount of emissions that the sources of existing air pollutants release. The San Francisco Bay Area's location in the middle latitudes and on the west coast of the North American continent places it in the relatively rare Mediterranean-type climate. The climate of the Bay Area is determined largely by a high-pressure system that is almost always present over the eastern Pacific Ocean off the West Coast of North America. During winter, the Pacific high-pressure system shifts southward, allowing more storms to pass through the region. During summer and early fall, when few storms pass through the region, emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, such as ozone and secondary particulates, such as nitrates and sulfates.

The Planning Area is located in the City of Oakland in Alameda County, California, which falls within the boundaries of the San Francisco Bay Area Air Basin (SFBAAB or Basin). The Basin encompasses the nine-county region, including all of Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin and Napa counties, and the southern portions of Solano and Sonoma counties. Within the Basin, 11 subregions have been defined based on their unique climatology and topography. The proposed project is located within the Northern Alameda County and Western Contra Costa Counties sub-region. This sub-

region stretches from Richmond to San Leandro and is bound by San Francisco Bay to the west and by the Oakland-Berkeley Hills to the east. The Planning Area is located approximately adjacent to the waterfront of the San Leandro Bay and approximately 2.8 miles east of the open San Francisco Bay. To the east and north of the project area lie the Oakland Hills, approximately 900 feet in elevation.

In this area, marine air traveling through the Golden Gate, as well as across San Francisco and the San Bruno Gap (a gap in the Coastal Range between the ocean and the San Francisco Airport), is a dominant weather factor. The Oakland-Berkeley Hills cause the westerly flow of air to split off to the north and south of Oakland, which causes diminished wind speeds. The air pollution potential in this sub-region is relatively low for portions close to the Bay, due to the largely good ventilation and less influx of pollutants from upwind sources.[1]

The prevailing winds for the region are from the west. Temperatures have a narrow range due to the proximity of the moderating marine area; maximum summer temperatures average in the mid-70s, with minimums in the mid-50s. Winter highs are in the mid- to high-50s, with lows in the low- to mid-40s.

Specifically, based on meteorological data from the five year period from 2007 through 2011, the primary wind direction at the Oakland Airport meteorological station is from the west.[2] The Oakland Airport station is the closest station to the Planning Area and 2007 through 2011 is the most recent five year period of meteorological data available at that station.

Existing Air Quality

Criteria Pollutants

Federal and State Ambient Air Quality Standards

Existing air quality conditions in the area surrounding the Planning Area can be characterized in terms of the primary ambient air quality standards that the State of California and the federal government have established for several different pollutants known as "criteria" pollutants. These primary standards have been set to protect public health. The criteria pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and inhalable particulate matter less than 10 microns in diameter (PM_{10}) and less than 2.5 microns in diameter ($PM_{2.5}$), and lead. For each criteria pollutant, those areas having pollutant levels less than the standards are called attainment areas (that is, these areas attain the air quality standard), and those with pollutant levels greater than the standards are called nonattainment areas (that is, these areas do not attain the air quality standard). The attainment status of the SFBAAB is presented in **Table 4.2-1** and discussed below.

[1] BAAQMD. CEQA Air Quality Guidelines. June 2012. Appendix C

[2] National Oceanic and Atmospheric Administration. Meteorological data for the Oakland Airport (KOAK) station. ftp://ftp3.ncdc.noaa.gov/pub/data/noaa/

Table 4.2-1: State and National Criteria Air Pollutant Attainment Status, Effects, and Sources

Pollutant	Averaging Time	State Standard[1] Concentration	State Standard[1] Attainment Status	National Standard[2] Concentration	National Standard[2] Attainment Status	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone (O_3)	1-Hour	0.09 ppm	N	[3]	[3]	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases and NOX react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial industrial mobile equipment.
	8-Hour	0.070 ppm	N	0.075 ppm	N		
Carbon Monoxide (CO)	1-Hour	20 ppm	A	35 ppm	A	Classified as a chemical asphyxiate, CO interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8-Hour	9.0 ppm	A	9 ppm	A		
Nitrogen Dioxide (NO_2)	1-Hour	0.18 ppm	A	100 ppb	U/A	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	Annual	0.030 ppm	A	0.053 ppm	U/A		
Sulfur Dioxide (SO_2)	1-Hour	0.25 ppm	A	75 ppb	A	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants,	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	3-Hour	-	-	[4]	-		
	24-Hour	0.04 ppm	A	0.14 ppm [5]	A [5]		

	Annual	-	-	0.030 ppm [5]	A [5]	destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	
Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	N	150 µg/m^3	U	May irritate eyes and respiratory tract, and cause decreases in lung capacity, increases in certain cancers, and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual	20 µg/m^3	N	[6]	[6]		
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	-	-	35µg/m^3	N	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from photochemical reactions of other pollutants, including NOX, $S0_2$, and organics.
	Annual	12 µg/m^3	N	12 µg/m^3 [7]	N		
Lead	30-day Average	1.5 µg/m3	A	-	-	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	-	-	1.5 ug/m^3 [8]	A [8]		
	Rolling 3 Month Average	-	-	0.15 ug/m^3	U/A		

Notes:

A = Attainment

N = Nonattainment

U = Unclassified

U/A = Unclassified/Attainment (insufficient data collected to determine classification; generally indicates low concern for the pollutant levels)

ppm = parts per million

µg/m3 = micrograms per cubic meter

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and suspended particulate matter - PM10, are values that are not to be exceeded. The standards for Lake Tahoe carbon monoxide, and lead are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average (i.e., all standards except for lead and the PM10 annual standard), then some measurements may be excluded. In particular, measurements are excluded that California Air Resources Board determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level two-thirds the National and State standard.

2. National standards shown are the "primary standards" designed to protect public health. The national primary standards reflect the level of air quality necessary, with an adequate margin of safety to protect the public health. National standards other than for ozone, particulates, and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.075 ppm or less. The 24-hour PM10 standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentile is less than 35 µg/m3.

3. The national 1-hour ozone standard was revoked on June 15, 2005.

4. The national secondary 3-hour SO2 standard is 0.5 ppm.

5. On June 2, 2010, the 1971 national annual and 24-hour SO2 standards were revoked. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

6. The national annual PM10 standard was revoked in 2006.

7. The national secondary annual $PM_{2.5}$ standard is 15 µg/m3. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m3 to 12.0 µg/m3.

8. On October 15, 2008, the national rolling 3-month average lead standard was established. The 1978 national quarterly lead standard remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Sources:

BAAQMD, accessed on August 21, 2013. Air Quality Standards and Attainment Status. http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm. Accessed August, 2013.
ARB, accessed on August 21, 2013. California Ambient Air Quality Standards. http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm.
ARB, accessed on August 21, 2013. Ambient Air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.
ARB, accessed on August 21, 2013. 2012 Area Designations. http://www.arb.ca.gov/regact/2012/area12/area12.htm.
ARB. 2012. Proposed 2012 Amendments to Area Designations for State Ambient Air Quality Standards, Attachment C. July 20.
USEPA, accessed on August 21, 2013. National Ambient Air Quality Standards. http://www.epa.gov/air/criteria.html.
USEPA, accessed on August 21, 2013. The Green Book Nonattainment Areas for Criteria Pollutants. http://www.epa.gov/air/oaqps/greenbk/index.html.

The United States Environmental Protection Agency (USEPA) has designated the SFBAAB as in nonattainment for the federal 8-hour O_3 standard, the 24-hour $PM_{2.5}$ standard, and the annual $PM_{2.5}$ primary standard. The USEPA has designated the SFBAAB as unclassifiable[3] for NO_2, PM_{10}, and lead, and in attainment of the federal carbon monoxide[4] and SO_2 standards. The State has designated the SFBAAB as in serious nonattainment of the State 1-hour O_3 standard and in nonattainment of the State PM_{10} and $PM_{2.5}$ standards. The SFBAAB has also been designated as being in attainment of the State CO, NO_2, SO_2, and lead standards.

These designations are based on the latest changes in the ambient air quality standards. For example, on October 15, 2008, the national rolling 3-month average lead standard was established; on June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked; and on December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 microgram per cubic meter ($\mu g/m^{3)}$ to 12.0 $\mu g/m^3$. The 2012 State Area Designation changes were approved by the Office of Administrative Law on January 22, 2013 and became effective on April 1, 2013.[5] The federal designations are current as of July 31, 2013. [6]

Pollutants of Concern

The pollutants of greatest concern in the area surrounding the Planning Area are O_3, PM_{10}, $PM_{2.5}$, and CO. As discussed above, the SFBAAB does not meet attainment standards for either the O_3, PM_{10}, and $PM_{2.5}$ State standards, or the O_3 and $PM_{2.5}$ federal standards. Although the SFBAAB is in attainment of both State and federal CO standards, CO is a pollutant of concern because the number of motor vehicles and vehicle miles traveled in the area continue to grow, and the potential for elevated levels of CO remains.

While attainment of the NO_2 standard has not been a problem in the Bay Area, oxides of nitrogen (NOX) emissions are of concern as a precursor to O_3. Reactive organic gases (ROGs) are not criteria pollutants, but their emissions are of concern as ROG are also precursors to O_3

SO_2 is no longer considered a problem pollutant in the State, because the ambient levels are fairly low, and the State has attained this standard for some time. SO_2 emissions have decreased substantially over the past 30 years due to improved industrial source controls and use of natural gas instead of fuel oil for electricity generation. In addition, SO_2 emissions from mobile sources have decreased due to lower sulfur content in fuels.

Ozone

Ozone (O_3), or smog, is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between ROG and NOX in the presence of sunlight. O_3 formation is greatest

[3] Area are designated as unclassifiable when EPA cannot designate the area as meeting or not meeting the standards based on available information. CAA Section 107(d)(1)(A)(iii). Unclassifiable areas are treated the same as attainment areas under the Clean Air Act.

[4] The SFBAAB was previously designated as a CO nonattainment area. Since the area was re-designated, it is subject to federal Clean Air Act requirements for maintaining attainment, discussed in the Clean Air Act section of this document.

[5] Air Resources Board (ARB), accessed on August 21, 2013. State Standard Area Designations. http://www.arb.ca.gov/desig/statedesig.htm#prior.

[6] USEPA, accessed on August 21, 2013. The Green Book Nonattainment Areas for Criteria Pollutants. http://epa.gov/airquality/greenbk/.

on warm, windless, sunny days. The main sources of NOX and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines); the evaporation of solvents, paints, and fuels; and biogenic sources. Automobiles are the single largest source of ozone precursors in the SFBAAB.

O_3 levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O_3 can also damage plants and trees, and materials such as rubber and fabrics.

Inhalable Particulate Matter

Particulate Matter (PM) refers to a wide range of solid or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. $PM_{2.5}$ includes a subgroup of finer particles that have an aerodynamic diameter of 2.5 micrometers or less. In the SFBAAB most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates.

Extended exposure to particulate matter can increase the risk of chronic respiratory disease. Some particulate matter, such as pollen, is naturally occurring. PM_{10} is of concern because it bypasses the body's natural filtration system more easily than larger particles, and can lodge deep in the lungs. The USEPA and the state of California revised their PM standards several years ago to apply only to these fine particles. $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and contain substances that are particularly harmful to human health.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas that is formed by the incomplete combustion of fuels. The single largest source of CO in the SFBAAB is motor vehicles. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia, as well as fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.

Ambient Concentrations

The existing air quality conditions in the area surrounding the Planning Area can be characterized by monitoring data collected in the region. The BAAQMD maintains pollutant-monitoring stations in Oakland East and Oakland West, as well as Fremont, Berkeley, and Livermore. Local ambient air quality data from Alameda County for the years 2010 through 2012 are summarized in **Table 4.2-2**.

Table 4.2-2: Ambient Air Quality around the Planning Area

Pollutant	Avg Time	CAAQS	NAAQS	Units	2010 Conc.	2010 CAAQS Exc. (d)	2010 NAAQS Exc. (d)	2011 Conc.	2011 CAAQS Exc. (d)	2011 NAAQS Exc. (d)	2012 Conc.	2012 CAAQS Exc. (d)	2012 NAAQS Exc. (d)
Ozone	1-Hour	0.09	n/a	ppm	0.097	1	n/a	0.091	0	n/a	0.072	0	n/a
	8-Hour	0.07	0.075	ppm	0.058	0	0	0.051/0.052	0	0	0.045	0	0
Carbon Monoxide	1-Hour	20	35	ppm	3.0	0	0	4.1	0	0	2.9	0	0
	8-Hour	9	9	ppm	1.6	0	0	1.5	0	0	1.6	0	0
Nitrogen Dioxide	1-Hour	0.18	0.1	ppm	64	0	0	57	0	0	65	0	0
	Annual	0.03	0.053	ppm	13	n/a	n/a	13	n/a	n/a	12	n/a	n/a
Sulfur Dioxide	1-Hour	0.25	0.075	ppm	0.011	0	0	0.019	0	0	0.068	0	0
	24-Hour	0.04	n/a	ppm	0.004	(-)	n/a	0.004	(-)	n/a	0.008	(-)	n/a
Particulate Matter (PM_{10})	24-hour	50	150	ug/m^3	41.2/42.8	0	0	(-)/(-)	(-)	(-)	(-)/(-)	(-)	(-)
	Annual	20	n/a	ug/m^3	20.3/(-)	(-)	n/a	(-)/(-)	(-)	n/a	(-)/(-)	(-)	n/a
Fine Particulate Matter ($PM_{2.5}$)	24-hour	n/a	35	ug/m^3	25.2	n/a	0	49.3	n/a	3.0	33.6	n/a	0
	Annual	12	12	ug/m^3	7.7	(-)	(-)	10.1	(-)	(-)	9.4	(-)	(-)

Table 4.2-2: Ambient Air Quality around the Planning Area

Abbreviations and Symbols:
ARB = Air Resources Board
BAAQMD = Bay Area Air Quality Management District
CAAQS = California Ambient Air Quality Standards
d = days
n/a = Not applicable
NAAQS = National Ambient Air Quality Standards
ppm = parts per million
µg/m3 = micrograms per cubic meter
USEPA = United Stated Environmental Protection Agency
(-) = not collected

Notes:
1. Values for 1 hour and 8 hour periods are maximum concentrations. Annual values are average concentrations.
2. Where two values are given, values are listed as (National/State)
3. Data were taken from the Oakland East Station at 9925 International Blvd when available. When data were not available from the Oakland East station, data were taken from the next closest Alameda County Stations, Oakland West and Berkeley. Data for SO_2 were taken from the Oakland West station at 1100 21st Street. Data for PM_{10} were taken from the Berkeley station at 1340 6th Street.
4. Data for ozone, PM_{10}, and $PM_{2.5}$ were obtained from ARB Air Quality Data Statistics
5. Data for 2010 PM_{10} CAAQS exceedances were taken from BAAQMD Annual Bay Area Air Quality Summaries
6. Except as noted below, carbon monoxide and sulfur dioxide concentrations and NAAQS exceedances, as well as nitrogen dioxide NAAQS exceedances were taken from EPA monitor values reports.
7. CO, NO_2, and SO_2 CAAQS exceedances and nitrogen dioxide concentrations were taken from BAAQMD air monitoring data. Sulfur dioxide 24-hour CAAQS exceedances were also taken from BAAQMD air monitoring data.
8. Revoked Standards: The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. The national annual and 3-yr PM_{10} standard was revoked in December 2006 and is no longer in effect.
9. State and national statistics may differ for the following reasons: state statistics are based on California-approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State statistics are based on local conditions while national statistics are based on standard conditions. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
10. NO_2 concentrations were available through BAAQMD's online air monitoring data display system, though data after September 2010 is still marked as raw data and has not been validated

Sources:
ARB, accessed on October 4 2013. Air Quality Data Statistics, http://www.arb.ca.gov/adam/
BAAQMD, accessed on October 4, 2013. Air Monitoring Data. http://gate1.baaqmd.gov/aqmet/aq.aspx
USEPA, Accessed October 4, 2013. Monitor Values Report. http://www.epa.gov/airdata/ad_rep_mon.html
BAAQMD, accessed on October 4, 2012. Annual Bay Area Air Quality Summaries. http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx

The Oakland East Station is the closest station to the Planning Area; recent data are not available for the Oakland East station in some cases, however.[7] Therefore, when data from the East Oakland station were not available, data from the next closest station(s) within Alameda County are shown. Details of the data selected for each given year and pollutant are included in the table footnotes.

As seen from these data, the State ozone standard was exceeded once during the three year period evaluated; otherwise there were no other violations of California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

Criteria Pollutant Emissions - Alameda County

Table 4.2-3 summarizes the emissions inventory for criteria air pollutants within Alameda County and within the entire SFBAAB for various source categories. According to Alameda County's emissions inventory, total mobile sources (on-road and off-road) are the largest contributor to the estimated annual average air pollutant levels of ROG, CO, NOX, and oxides of sulfur (SO_X), accounting for approximately 47 percent, 92 percent, 91 percent, and 53 percent respectively of the total inventory. Area-wide sources (e.g., solvent evaporation from equipment cleaning operations; on-site fuel combustion for space and water heating (e.g., boilers); landscape maintenance equipment such as lawnmowers and leaf blowers) account for approximately 82 percent of Alameda County's PM_{10} emissions and 61 percent of the County's $PM_{2.5}$ emissions.[8]

Although mobile source emissions constitute the majority of the 2010 ROG, CO, NOX, and SO_X inventory both in the SFBAAB and in Alameda County, corresponding emissions from this source category have decreased greatly since the 1970s due to more stringent federal and State emission controls on mobile sources and fuels. Examples of vehicle emissions standards include ARB's low-emission vehicle (LEV) standards, [9] ARB's heavy-duty engine standards, [10] and USEPA's corporate average fuel economy (CAFE) standards for passenger car and light duty trucks.[11] Examples of cleaner fuel standards include the elimination of lead from gasoline, and lowering of sulfur content in fuels.[12]

[7] The Oakland East station is not equipped with a SO_2 sensor; therefore SO_2 data was taken from the next closest monitoring station with available data in Alameda County (Oakland West). Similarly, PM_{10} data were taken from the Berkeley Station.

[8] ARB, accessed on August 17, 2013. Almanac Emission Projection Data http://www.arb.ca.gov/app/emsinv/emssumcat.php. .

[9] ARB, accessed on August 21, 2013. Low-Emission Vehicle Program Accessed August 2013 http://www.arb.ca.gov/msprog/levprog/levprog.htm.

[10] ARB, accessed on August 21, 2013. Truck and Bus Regulation. http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm.

[11] USEPA, accessed on August 21, 2013. Fuel Economy and Emissions Program. http://www.epa.gov/fueleconomy/.

[12] USEPA, accessed on August 21, 2013. Fuel and Fuel Additives. http://www.epa.gov/otaq/fuels/index.htm.

Table 4.2-3: 2010 Estimated Criteria Pollutant Emissions Inventories by Source (County and Air Basin) (tons/day based on annual average)

Source	ROG	CO	NOX	SO_X	PM_{10}	$PM_{2.5}$
Alameda County						
Mobile	34.0	298.0	85.8	1.8	4.5	3.6
Stationary	19.9	4.6	5.5	1.5	3.5	2.0
Area	17.9	21.2	3.4	0.1	35.4	8.6
TOTAL	71.9	323.7	94.6	3.4	43.4	14.2
San Francisco Bay Area Air Basin						
Mobile	163.1	1387.4	345.6	14.4	19.8	15.7
Stationary	107.1	45.2	51.3	47.1	16.6	12.4
Area	89.1	163.2	17.2	0.6	179.3	53.6
TOTAL	359.2	1595.7	414.1	62.2	215.7	81.6

Toxic Air Contaminants (TACs)

In California, TACs are defined by the ARB as those air pollutants that "may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health".[13] To date, ARB has identified more than 21 TACs and adopted USEPA's list of hazardous air pollutants (HAPs) as TACs.[14] USEPA defines HAPs as "pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects". Currently, there are 187 identified HAPs.[15]

The nature and magnitude of the potential health effects of TACs depends on the substance, the concentration, and the period of exposure. Some TACs cause effects in response to short-term (acute) exposure; others cause effects only after sustained exposures over weeks, months, or years. The effects of acute exposure may be minor, such as watery eyes or respiratory irritation; or they may involve damage such as to the reproductive system or nervous system. If exposure to a sufficient concentration occurs for a sufficient period, individuals may have an increased risk of developing cancer, or a greater likelihood of experiencing non-carcinogenic chronic adverse effects. These chronic non-carcinogenic

[13] ARB, accessed on August 24, 2013. Glossary of Air Pollution Terms. http://www.arb.ca.gov/html/gloss.htm#T.

[14] ARB, accessed on August 24, 2013. Toxic Air Contaminant Identification List. http://www.arb.ca.gov/toxics/id/taclist.htm.

[15] USEPA, accessed on August 24, 2013. Toxic Air Pollutants. http://www.epa.gov/oar/toxicair/newtoxics.html.

health effects may be minor, such as nasal rhinitis or respiratory irritation; or they may involve long-term damage to the immune, neurological, reproductive, respiratory, or other systems.[16]

Significant sources of TACs in the environment are industrial processes, such as petroleum refining, chemical manufacturing, electric utilities, metal mining/refining and chrome plating; commercial operations, such as gasoline stations and dry cleaners; and transportation activities, particularly diesel-powered vehicles, including trains, buses, and trucks. In 1998, the ARB identified PM from diesel-powered engines as a TAC. Compared to other air toxics that the ARB has identified and regulated, diesel particulate matter (DPM) emissions are estimated to be responsible for about 70 percent of the total ambient air toxics risk. On a statewide basis, the average potential cancer risk associated with these emissions is over 500 potential cases per million.[17]

Unlike criteria pollutants, the concentrations of individual TACs are not regulated per se; however, concentrations of TACs may be regulated indirectly based on results from a health risk assessment (HRA). An HRA is a scientifically-based tool used to determine if exposure to chemicals(s) pose a significant risk to human health. **Table 4.2-4** summarizes the monitored concentrations of carcinogenic TACs at the Oakland East station in 2010, the most recent year for which data are available. The concentration of TACs indicates the potential for adverse health impacts resulting from breathing ambient air and represents baseline conditions related to toxic air contaminants.

[16] Ibid.

[17] ARB, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.

Table 4.2-4. Ambient Air Concentrations of Carcinogenic TACs in Oakland

	Concentration	
Compound	**ppb**	**µg/m3**
1,3-Butadiene	0.038	0.083
Benzene	0.303	0.969
Carbon Tetrachloride	0.109	0.683
Chloroform	0.018	0.088
Ethylbenzene	0.107	0.464
Ethylene Dibromide	0.005	0.038
Ethylene Dichloride	0.050	0.202
Methylene Chloride	0.299	1.039
Perchloroethylene	0.005	0.034
Toluene	0.908	3.420
Trichloroethylene	0.009	0.050
Vinyl Chloride	0.050	0.128

Notes:

1. Data is taken from the BAAQMD Monitoring Station in East Oakland for 2010. Concentrations in µg/m3 are calculated assuming a temperature of 25 Celsius and a pressure of 1 atmosphere.

2. All data are based on averages of 29 samples. Samples with concentrations below the method detection limit were assigned a value equal to one-half of the detection limit.

3. Ethylene dibromide, ethylene dichloride, and vinyl chloride were not detected above the method detection limit in any of the samples. These are therefore assigned a value of one-half the detection limit.

Abbreviations:
ppb = parts per billion
µg/m3 = micrograms per cubic meter.

Source: BAAQMD 2010 Toxics Air Monitoring Data. Accessed October 24, 2013. http://www.baaqmd.gov/Divisions/Engineering/Air-Toxics/Toxic-Air-Contaminant-Control-Program-Annual-Report.aspx

According to the California Almanac of Emissions and Air Quality,[18] the majority of the estimated health risk from TACs in ambient air is attributed to relatively few compounds, the most dominant being particulate matter exhaust from diesel-fueled engines. Based on available data, the other nine TACs that pose the greatest risk from breathing ambient air in California are benzene, 1,3-butadiene,

[18] ARB. 2009. The California Almanac of Emissions and Air Quality, Chapter 4: Air Basin Trends and Forecasts – Criteria Air Pollutants.

acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.[19]

DPM is a complex mixture of hydrocarbons, particulates, gases, and other compounds. DPM is emitted by diesel-fueled internal combustion engines, and the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Both California's Office of Environmental Health Hazard (OEHHA) and the USEPA consider DPM to be a carcinogen. The cancer potency factor derived by Cal/EPA for DPM is highly uncertain in both the estimation of response and dose. In the past, due to inadequate animal test data and epidemiology data on diesel exhaust, the International Agency for Research on Cancer (IARC), a branch of the World Health Organization (WHO), had classified DPM as Probably Carcinogenic to Humans (Group 2); the USEPA had also concluded that the existing data did not provide an adequate basis for quantitative risk assessment.[20] However, based on two recent scientific studies,[21,22] IARC recently re-classified DPM as Carcinogenic to Humans, placing it in Group 1.[23] This classification means that the agency has determined that there is "sufficient evidence of carcinogenicity" of a substance in humans; it represents the strongest weight-of-evidence rating in IARC's carcinogen classification scheme. The USEPA, OEHHA, and IARC also recognize that exposure to DPM may cause non-cancer effects such as change(s) in lung function and airway inflammation.[24] DPM is a component of PM, and recent scientific data have linked prolonged exposure to PM to premature mortality, respiratory effects, and cardiovascular disease.

The BAAQMD has estimated that the carcinogenic health risks from exposure to DPM in 2003 in the Bay Area region was about 500 to 700 in 1 million.[25] One source of DPM emissions within the Bay Area and within the area surrounding the Planning Area is diesel trucks. Specifically, the California Department of Transportation (Caltrans) estimated that approximately 7.6 percent of the vehicles on I-880 at Hegenberger Road were trucks with 2 or more axles in 2011.[26] Many of these trucks are diesel powered and contribute to DPM risks.

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[19] ARB. 2009. The California Almanac of Emissions and Air Quality, Appendix C: Emissions, Air Quality, and Health Risk for Ten Toxic Air Contaminants.

[20] USEPA. 2002. Health Assessment Document for Diesel Engine Exhaust. National Center for Environmental Assessment, Office of Research and Development, Washington, DC. EPA/600/8-90/057F. May.

[21] Silverman DT, Samanic CM, Lubin JH, Blair AE, Stewart PA, Vermeulen R, Coble JB, Rothman N, Schleiff PL, Travis WD, Ziegler RG, Wacholder S, Attfield MD. 2011. The Diesel Exhaust in Miners Study: A Nested Case-Control Study of Lung Cancer and Diesel Exhaust. J Natl Cancer Inst.

[22] Attfield MD, Schleiff PL, Lubin JH, Blair A, Stewart PA, Vermeulen R, Coble JB, Silverman DT. 2011. The Diesel Exhaust in Miners Study: A Cohort Mortality Study with Emphasis on Lung Cancer. J Natl Cancer Inst.

[23] International Agency for Research on Cancer (IARC). 2012. Press Release No. 213. IARC: Diesel Engine Exhaust Carcinogenic. June.

[24] Office of Environmental Health Hazard Assessment (OEHHA). 1998. Findings of the Scientific Review Panel on The Report on Diesel Exhaust, as adopted at the Panel's April 22, 1998, meeting. April; OEHHA (2002). Air Toxics Hot Spots Program Risk Assessment Guidelines: Part II Technical Support Document for Describing Available Cancer Potency Factors. California Environmental Protection Agency (Cal/EPA). December; United States Environmental Protection Agency (USEPA). 2011 Integrated Risk Information System (IRIS). United States Environmental Protection Agency. http://www.epa.gov/iris/

[25] BAAQMD, 2007. Toxic Air Contaminants 2003 Annual Report. August.

[26] Caltrans, accessed on August 20, 2013. Annual Average Daily Truck Traffic on the California State Highway System, 2011. http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/index.htm.

Odors

Odors, alone, are not generally regarded as a physical health risk. However, manifestations of a person's reaction to strong odors can range from irritation, anger, or anxiety to circulatory and respiratory system effects, nausea, vomiting, or headache.

The ability to detect odors varies considerably among the population. Some individuals are able to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be acceptable to another (e.g., a fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected, and a transient odor is more likely to result in complaints than a constant one. This is caused by a phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Land uses that constitute odor sources include industrial facilities, such as asphalt batch plants, wastewater treatment facilities, and solid-waste transfer facilities. Other examples of minor sources of odors include restaurants and auto body painting establishments. In general, odor dispersal occurs relatively quickly, with noticeable effects diminishing substantially with increasing distance from the source.

Existing Sources and Sensitive Receptors

Existing air pollutant sources are currently located within and around the Planning Area. Using the BAAQMD Stationary Source Screening Tool for Alameda County[27], existing stationary sources within a 1,000 foot buffer of the Plan Buildout area were identified, as shown in **Figure 4.2-1**. Per the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards[28], a 1,000 foot radius is generally recommended around the project property boundary to identify existing sources that may individually or cumulatively impact new receptors and to identify existing sources that may contribute to the cumulative impact of new sources. Existing stationary sources within the 1,000 foot buffer surrounding the Plan Buildout area include generators, gas stations, cleaners, auto/maintenance shops, among others. In addition, warehouses and distribution centers in the vicinity of the Plan Buildout area were identified.[29] Finally, the locomotive activity for Amtrak trains on the main tracks just west of the BART lines and freight trains on the tracks just east of the BART lines were also considered.[30]

[27] BAAQMD. Accessed August 2013. Stationary Source Screening Tool. http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.

[28] BAAQMD. 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards. May.

[29] Email communication between Devan Reiff and Micaela Pronio of City of Oakland and Min Hou of ENVIRON on November, 15, 2013.

[30] Email communication between Sam Tabibnia of Fehr and Peers and Min Hou of ENVIRON on November 12, 2013.

Legend

Stationary Sources

- A B & I Foundry
- Aman Environmental Construction, Inc
- Arco Fac # 4494
- Aspire Public Schools
- Chevron #9-1851
- City of Oakland , Envr Scvs Division
- City of Oakland Environmental Services
- City of Oakland Public Works Agency
- City of Oakland, Envr Scvs Division
- City of Oakland-Municipal Service Center
- Coliseum 76
- Coliseum Shell #135694
- Convenience Retailers LLC 2705191
- Coschem, Inc
- Creative Wood Products
- ECE Custom Body and Paint
- East Bay Municipal Utility Dist
- East Bay Municipal Utility District
- Elliott & Elliott Company
- Everett Graphics
- Golden Gate Truck Center
- Hertz Equipment Rental
- International Gases & Cryogenics Inc
- Interstate Brands Corporation
- KR Properties Inc
- Kaiser Permanente
- Oakland Alameda County Coliseum
- Oakland Coliseum Joint Venture
- Oakland Custom Truck Painting
- Pacific Gas and Electric Company/Envr Fi
- Port of Oakland
- Prime Equipment #557
- Right Away Redy Mix, Inc
- Saxco Demptos, Inc
- Sterling Autobody Centers #89
- Sunny Airport Shell #135691
- United Parcel Service
- Verizon Wireless- 815053 - (HWY 880/Hege
- Western Colloid Products
- Wood Tech Inc

1,000 ft Buffer of Specific Plan Boundary

Figure 4.2-1
Existing Sources of Air Pollution

Source: ENVIRON

Sensitive receptors are locations where individuals with increased sensitivity to the health effects of air pollutants, such as children, hospital patients, and the elderly are usually present. Typical sensitive receptors include schools, school yards, daycare centers, parks, playgrounds, nursing homes, hospitals, and residential communities. **Figure 4.2-2** shows the locations of sensitive receptors within the 1,000 foot buffer surrounding the Planning Area.

Regulatory Setting

Criteria Air Pollutants

Air quality regulations have been established to control and reduce emissions and ambient concentrations of commonly occurring air pollutants. These pollutants are termed "criteria" air pollutants because EPA has developed human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels (in contrast to toxic air contaminants, discussed below). As discussed above in the Existing Air Quality section of this chapter, the criteria pollutants include O_3, CO, NO_2, SO_2, PM_{10} and $PM_{2.5}$. The framework for regulation of criteria pollutants is established at the federal level by the federal Clean Air Act (CAA), which provides the bases for establishment of the NAAQS discussed above. The CAA is also implemented at the state and local levels through State Implementation Plans (SIPS). Individual states or tribes may have stronger air pollution laws, but they may not have weaker pollution limits than those set by EPA. The California Clean Air Act also establishes ambient air quality standards for criteria pollutants, as discussed below.

Toxic Air Contaminants

Air quality regulations also focus on TACs (or in federal terminology, HAPs). In general, for those TACs that may cause cancer, there is no threshold concentration below which risks do not occur. However, standards for carcinogenic TACs are established to reflect increased risks of one in a million to one in ten thousand – values identified as *de minimis* by regulatory agencies. USEPA and ARB regulation of TACs is consistent with this, in that these agencies have statutes and regulations that typically reflect the *de* minimis risk levels noted above, while also generally requiring the use of the maximum achievable control technology (MACT) or best available control technology for toxics (T-BACT) to limit emissions. These, in conjunction with additional rules set forth by BAAQMD, establish the regulatory framework for TACs.

Source-Specific Standards

USEPA, ARB, and BAAQMD administer regulations that limit criteria air pollutant and HAP/TAC emissions (including DPM) from specific sources. The following sections describe the regulations applicable to emissions sources that are included in the Coliseum District project description, including construction equipment, heavy-duty trucks, buses, and emergency generators.

Legend

Sensitive Receptors

- daycare
- park
- school
- 1,000 ft Buffer of Specific Plan Boundary

Figure 4.2-2
Sensitive Receptors within 1,000 Foot Buffer

Source: ENVIRON

Federal Regulations

Federal Clean Air Act

The federal Clean Air Act (CAA), enacted largely in its current form in 1970 and amended in 1977 and 1990, establishes the framework for federal air pollution control. The act directed the USEPA to establish the ambient air quality standards described in Table 4.2-1. An area that does not meet the federal standard for a pollutant, as shown in Table 4.2-1, is called a "nonattainment" area for that pollutant. For federal nonattainment areas, the federal CAA requires states to develop and adopt State Implementation Plans (SIPs), which are air quality plans showing how air quality standards will be attained. The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution.

The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. USEPA has responsibility to review all State SIPs to determine conformation to the mandates of the FCAAA, and to determine if implementation will achieve air quality goals. If the USEPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions being denied to transportation funding and stationary air pollution sources in the air basin. In California, SIPs are prepared and adopted by the local or regional air districts (in the Bay Area, by the BAAQMD) and are reviewed and submitted to the USEPA by ARB.

Federal HAP Regulations

Title III of the FCAAA requires the USEPA to promulgate national emissions standards for hazardous air pollutants (NESHAPs), which can set different requirements for major and area sources. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (tpy) of any HAP or more than 25 tpy of any combination of HAPs; all other sources regulated under Title III of the FCAAA are considered area sources.

Issuance of the emission standards occurs in two phases. The first phase consists of technology-based emission standards designed to produce a high level of emission reductions for major sources of HAPs, which are referred to as MACT standards. For area sources, the standards may be different, based on generally available control technology. In the second phase, USEPA must issue health risk-based emissions standards where such standards are deemed necessary to address risks remaining after implementation of the technology-based NESHAPs. These second-phase standards are generally referred to as "residual MACT" standards.

The FCAAA also required USEPA to issue vehicle or fuel standards containing reasonable requirements to control HAP emissions, applying at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the FCAAA also required the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions, including air toxics.

Mobile Off-Road Engines (Construction Phase): Emission Standards for Non-road Diesel Engines

During the construction phase, emissions will be generated from off-road construction equipment such as loaders, graders, and cranes, as well as heavy-duty trucks. To reduce emissions from non-road diesel equipment, EPA established a series of emission standards, called Tiers, for new non-road diesel engines culminating in the 2004 Non-road Tier 4 Final Rule.[31,32] The Tier standards apply to non-road engines such as engines found in construction, general industrial, and terminal equipment, but not locomotives or marine engines rated above 37 kilowatt (kW) (50 horsepower [HP]). The Tier 1, Tier 2, Tier 3, and Tier 4 standards require compliance with progressively more stringent emission standards. Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category. Tier 2 standards were phased in from 2001 to 2006 and the Tier 3 standards were phased in from 2006 to 2008. To meet these standards, engine manufacturers will produce new engines with advanced emissions control technologies similar to those already expected for on-road heavy-duty diesel vehicles. The Non-road Tier 4 standards are currently being phased in starting with smaller engines in 2008 until all but the very largest diesel engines meet NOX and PM standards in 2015.

Mobile On-Road Engines (Construction Phase): Emissions Standards for Heavy-Duty Engines and Vehicles

During the construction phase, the project alternatives will generate air emissions from on-road heavy-duty trucks such as haul trucks and vendor trucks.

To reduce emissions from on-road, heavy-duty diesel trucks, USEPA established a series of increasingly strict emission standards for new engines, starting in 1988. The EPA promulgated the final and cleanest standards with the 2001 Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements Rule, more commonly known as the 2007 Highway Rule,[33] which integrated engine and fuel controls as a system to gain the greatest emission reductions. This rule established a PM emission standard of 0.01 gram per horsepower-hour (g/hp-hr) for new vehicles beginning with model year 2007. NOX and non-methane hydrocarbon (NMHC) standards of 0.20 g/hp-hr and 0.14 g/hp-hr, respectively, were phased in together between 2007 and 2010 on a percent of sales basis: 50 percent from 2007 to 2009 and 100 percent in 2010.

Emergency Generators

Due to the back-up electricity requirement for sports venues and for R&D uses, as well as California building code requirement for back-up diesel generators for all buildings in excess of 70 feet in height for elevator safety, emergency generators are expected to exist in the Plan Area.

Emergency generators are subject to Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60 Subpart IIII). This rule establishes strict limits on NOx and PM emissions from stationary compression ignition engines. The specific limits depend on the model

[31] USEPA, 1998. Control of Emissions of Air Pollution from Nonroad Diesel Engines, Final Rule. Title 40 Code of Federal Regulations, Parts 9, 86, and 89. October.

[32] USEPA, 2004. Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel, Final Rule. Title 40 Code of Federal Regulations, Parts 9, 69, 80, 86, 89, 94, 1039, 1048, 1051, 1065, and 1068. June.

[33] USEPA, 2001. Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, Final Rule ("2007 Highway Rule"). Title 40 Code of Federal Regulations, Parts 69, 80, and 86. January 18.

year, installation date, and operating speed of the engine.[34] Emergency engines are also subject to National Emission Standards for Hazardous Air Pollutants (NESHPAP) (40 CFR Part 63, Subpart ZZZZ). On January 14, 2013, EPA finalized amendments to the NESHAP for stationary reciprocating internal combustion engines (RICE). The amendments include requirements for use of cleaner fuels and expansion of reporting requirements. [35] On August 29, 2013, the USEPA issued a notice announcing reconsideration of, and requesting public comment on, three specific issues in the agency's 2013 final amendments to its standards limiting air pollutant emissions from stationary reciprocating internal combustion engines.[36]

Diesel Fuel Requirements

In addition to the above source-specific standards that are typically met through emissions control technologies, USEPA also directly regulates the diesel fuel used in many of these sources.

Highway Diesel Fuel Sulfur Requirements

The 2007 Highway Rule also required refineries to begin producing highway diesel fuel that met a maximum sulfur standard of 15 parts per million (ppm), known as Ultra Low Sulfur Diesel (ULSD), by June 2006. All 2007 and later model year diesel-fueled vehicles must be refueled with ULSD. By integrating fuel sulfur standards and advanced pollution control technologies, the 2007 Highway Rule reduces DPM and NOX exhaust emissions of heavy-duty engines by more than 90 percent as compared to previous engine models. In addition, ULSD also enables emissions reductions from other diesel-powered highway vehicles, including cars, SUVs, and light-duty trucks.

Non-road Diesel Fuel Sulfur Requirements

The Non-road Tier 4 Final Rule for non-road diesel engines also established fuel sulfur limits in order to integrate engine and fuel controls as a system to gain the greatest emission reductions. The rule required low *sulfur* (500 ppm) diesel fuel to be phased in starting in 2007, and requires ULSD (15 ppm) to be phased in over 2010-2012 for non-road, locomotive, and marine engines (though only for diesel fuel, not for marine residual fuel which is more typically used by very large ocean-going vessels). The Tier 4 engine and fuel standards complement the 2007 Highway Rule for on-road heavy-duty engine and vehicles discussed above by requiring 90 percent reductions in DPM and NOX exhaust as compared to previous engine models. With the exception of line-haul locomotives, the California Diesel Fuel Regulations (described below) generally pre-empt this rule for other sources such as intrastate locomotives and construction equipment.

[34] Emission limits are detailed in Title 40 Code of Federal Regulations §60.4205: What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

[35] USEPA. Fact Sheet, Final Amendments to the Emission Standards for Reciprocating Internal Combustion Engines. Specifics About Provisions Related to Emergency Engines. http://www.epa.gov/ttn/atw/icengines/docs/20130114emergencyfs.pdf. Accessed December 2013.

[36] USEPA. Fact Sheet. Reconsideration of Final Standards for Stationary and Reciprocating Internal Combustion Engines. http://www.epa.gov/ttn/atw/icengines/docs/20130829fs.pdf. Accessed December 2013.

State Regulations

California Clean Air Act (CAA)

The California CAA of 1988 focuses on attainment of the California Ambient Air Quality Standards (CAAQS), which, for certain pollutants and averaging periods, is more stringent than the comparable federal standards. Responsibility for achieving California standards is placed on the ARB and local air pollution control districts through district-level air quality management plans.

The California CAA requires designation of attainment and nonattainment areas with respect to CAAQS. The California CAA also requires that local and regional air districts expeditiously adopt and prepare an air quality attainment plan if the district violates State air quality standards for CO, SO_2, NO_2, or O_3. No locally prepared attainment plans are in place for areas that violate the State PM_{10} standards, because attainment plans are not required for those areas. This is discussed further below.

The California CAA requires that the State air quality standards be met as expeditiously as practicable, but, unlike the Federal CAA, does not set precise attainment deadlines. Instead, the act established increasingly stringent requirements for areas that will require more time to achieve the standards.

ARB is primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. The ARB is primarily responsible for statewide pollution sources and produces a major part of the SIP. Local air districts are still relied upon to provide additional strategies for sources under their jurisdiction. The ARB combines this data and submits the completed SIP to USEPA.

Other ARB duties include monitoring air quality, in conjunction with air monitoring networks maintained by air pollution control and air quality management districts; establishing CAAQS, which in many cases are more stringent than the NAAQS; determining and updating area designations and maps; and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

State TAC Regulations

TACs in California are primarily regulated through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, or the Hot Spots Act). AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review are necessary before ARB can designate a substance as a TAC. To date, ARB has adopted USEPA's list of HAPs as TACs and identified more than 21 additional TACS. Most recently, Environmental Tobacco Smoke was added to ARB's list of TACs in 2007. [37]

Once a TAC is identified, ARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that a particular TAC. If there is a concentration below which health effects are not likely, the control measure must reduce exposure below that threshold. If there is no safe concentration, the measure must incorporate T-BACT to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare a toxic emissions inventory; conduct a risk assessment if emissions are significant; notify the public of significant risk levels; and prepare and implement risk reduction measures.

[37] ARB, accessed on August 24, 2013. Toxic Air Contaminant Identification List. http://www.arb.ca.gov/toxics/id/taclist.htm.

ARB adopted a comprehensive Risk Reduction Plan in 2000, after identifying DPM as a TAC.[38] Pursuant to this Plan, ARB adopted diesel-exhaust control measures and stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In 2001, ARB adopted the Public Transit Bus Fleet Rule and Emissions Standards for New Urban Buses, which established emissions limits on 1985 and subsequent model year heavy-duty bus engines and vehicles for NOX, CO, non-methane hydrocarbons, PM, and formaldehyde. The emissions standards apply to all heavy-duty urban buses, including diesel-fueled buses. Therefore, the rule limits the emissions of two TACs identified by ARB: DPM and formaldehyde. In 2007, a low-sulfur diesel fuel requirement and tighter emission standards for heavy- duty diesel trucks was put into effect, to be followed in 2011 by the same standards being applied to off-road diesel equipment. Over time, the replacement of older vehicles will result in a fleet that produces substantially lower levels of TACs than the replaced vehicles.

Mobile-source emissions of TACs (e.g., benzene, 1,3-butadiene, DPM) decreased significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low-Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of ARB's Risk Reduction Plan, DPM concentrations are expected to be reduced by 75 percent in 2010 and 85 percent in 2020 from the estimated year-2000 level. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

In 2005, ARB published the Air Quality and Land Use Handbook: A Community Health Perspective, which provides guidance concerning land-use compatibility with TAC sources. Although not a law or adopted policy, the handbook offers recommendations for the siting of sensitive receptors (e.g., proposed residential units) near uses associated with TACs to help limit the exposure of children and other sensitive populations to TACs. Specifically, the Handbook identifies freeways and high traffic roads (100,000 vehicles per day for an urban roadway or 50,000 vehicles per day for a rural roadway) as a source of TACs that could present a potentially significant health risk to nearby sensitive receptors. ARB studies show that concentrations of traffic related pollutants declined with distance from the road, primarily within the first 500 feet. Therefore, ARB recommends avoiding the siting of new sensitive land uses within 500 feet of a freeway or high traffic roadway.[39] The Coliseum Area land use areas designated as residential are located more than 500 feet from the freeway.

Mobile Off-Road Engines (Construction Phase)

During the construction phase, emissions will be generated from off-road construction equipment such as loaders, graders, and cranes, as well as heavy-duty trucks.

ARB Off-Road Emissions Regulation for Compression-Ignition Engines and Equipment

Engines designated as non-road engines by USEPA are known as off-road engines in California state regulations implemented by ARB. Similar to the USEPA Non-road Diesel Rule, the ARB Off-Road Emissions Regulation for Compression-Ignition Engines and Equipment[40,41] applies to diesel engines such

[38] ARB, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. Stationary Source Division and Mobile Source Division. October.

[39] ARB, 2005. Air Quality and Land Use Handbook: A Community Health Perspective. April.

[40] ARB, 2004. Off-Road Compression-Ignition Engines and Equipment. Title 13 California Code of Regulations, Sections 2420 and 2425.1. December.

as those found in construction, general industrial, and terminal equipment, but not locomotives or marine engines rated above 37 kW (50 HP). Initially adopted in 2000 and amended in 2004, the regulation establishes Tier emission standards, test procedures, and warranty and certification requirements. For some model years and engine sizes, the ARB Tier emission standards are more stringent than the USEPA standards.

ARB In-Use Off-Road Diesel Vehicle Regulation

In July 2007 ARB adopted the In-Use Off-Road Diesel Vehicle Regulation and amended it in December 2011.[42,43] The regulation requires owners of off-road mobile equipment powered by diesel engines 25 HP or larger to meet the fleet average or BACT requirements for NOX and PM emissions by January 1 of each year. The regulation also establishes idling restrictions, limitations on buying and selling older off-road diesel vehicles (Tier 0), reporting requirements, and retrofit and replacement requirements. The requirements and compliance dates vary by fleet size, with performance requirements for large fleets beginning in 2014, medium fleets in 2017, and small fleets in 2019. [44] Requirements regarding idling, disclosure, reporting, and labeling took effect in 2008 and 2009. In September 2013 the USEPA granted ARB authorization to enforce all provisions of the In-Use Off-Road Diesel Vehicle Regulation, including the regulation's performance requirements. Enforcement of the restrictions on adding Tier 0 and 1 vehicles will begin January 1, 2014. Enforcement of the first fleet average requirements for large fleets (> 5,000 total fleet horsepower) will begin on July 1, 2014.[45]

ARB Surplus Off-Road Opt-In for NOX

The Surplus Off-Road Opt-In for NOX (SOON) Program was originally adopted with the statewide Regulation for In-Use Off-Road Diesel Vehicles (Off-Road Rule) in 2008 and would apply to districts whose governing board elected to opt into the provision of the program. The SOON Program requires applicable fleets to meet a more stringent fleet-average NOX target than the statewide Off-Road Rule on a compliance schedule. BAAQMD has elected not to opt into the SOON Program.

Mobile On-Road Engines (Construction Phase)

Heavy Duty Diesel Truck Idling Regulation

During the construction phase, the project alternatives will generate air emissions from on-road heavy-duty trucks such as haul trucks and vendor trucks.

[41] ARB, accessed on August 29, 2013. New Off-Road Compression-Ignition (Diesel) Engines and Equipment. http://arb.ca.gov/msprog/offroad/orcomp/orcomp.htm.

[42] ARB, 2011. Regulation for In-Use Off-Road Diesel-Fueled Fleets. Title 13, California Code of Regulations, Section 2449.

[43] ARB, accessed on August 29, 2013. In-Use Off-Road Diesel Vehicle Regulation. http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm.

[44] ARB does not have the authority to enforce the performance requirements or adding vehicle restrictions of the In-Use Off-Road Diesel Vehicle Regulation until USEPA issues authorization. As of August 29, 2013, USEPA has not issued this authorization.

[45] ARB Regulator Advisory. Enforcement of the In-use Off-Road Vehicle Regulation. Mail-out #MSCD 13-25. September 2013. http://www.arb.ca.gov/msprog/mailouts/msc1325/msc1325.pdf.

ARB adopted the in-use heavy duty diesel truck idling ATCM in July 2004. As a follow-up to this ATCM, the ARB approved the Heavy Duty Diesel Truck Idling regulation[46,47] which affected heavy-duty diesel trucks starting in February 2005. The regulation requires in-state and out-of-state registered sleeper berth equipped trucks to shut down their engines if idling for longer than 5 minutes at a time, except in the case of queuing (if the queue is located beyond 100 feet from any homes or schools). The regulation also establishes engine performance standards which require non-programmable engine shutdown systems on heavy-duty diesel engines of model year 2008 and later; these systems shut down the engine after five minutes of idling or, alternatively, the engines can optionally meet strict emission standards for NOX emissions during idling. Trucks with engines of model year 2006 or older may use any California or federally certified diesel-fueled auxiliary power system (APS) or fuel-fired heaters.

Buses

In addition to the 2007 Highway Rule described above, diesel buses are also subject to the ARB Statewide Truck and Bus Regulation. ARB adopted this regulation in December 2008 and amended it in December 2011.[48,49] The regulation requires heavy-duty vehicles to be retrofitted with PM filters beginning January 1, 2012, and requires older vehicles to be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses must have 2010 model year engines or equivalent.

Emergency Generators

ARB regulates emergency generators through the airborne toxic control measure (ATCM) for Stationary Compression Ignition Engines. The ATCM requires a 0.15 g/bhp-hr PM emission limit for all stationary CI engines greater than or equal to 50 hp. Annual maintenance and testing hours are limited to 50 hours per calendar year. New emergency standby engines are required to meet the applicable NMHC+NOx, HC, and CO tier 2 or tier 3 non-road CI engine emission standards, and tier 4 standards that do not require add-on controls. After December 31, 2008, and beginning in model year 2007, any stationary diesel-fueled CI engine, except for fire pump engines, installed in California must be certified to the new non-road CI engine certification emission standards for all pollutants.[50]

In addition, portable diesel engines with a rating of greater than 50 brake horse power are subject to ARB's Portable Engine ATCM.[51] The ATCM establishes fleet-wide standards for portable diesel engines.

[46] ARB, 2004. Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. Title 13 California Code of Regulations, Chapter 10, Section 2485. July.

[47] ARB, accessed on August 29, 2013. Heavy-Duty Vehicle Idling Emission Reduction Program. http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm.

[48] ARB, 2011. Amendments to the Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from in-Use On-Road Diesel-Fueled Vehicles. Title 13 California Code of Regulations, Chapter 1, Section 2025. December.

[49] ARB, accessed on August 29, 2013. Truck and Bus Regulation: On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm.

[50] ARB. FAQ. Airborne Toxic Control Measure for Stationary Compression Ignition Engines. Requirements for Stationary Engines used in Non-Agricultural Applications, http://www.arb.ca.gov/diesel/documents/atcmfaq.pdf. Accessed December 2013.

[51] ARB. Final Regulation Order, Airborne Toxic Control Measure for Diesel Particular Matter from Portable Engines Rated at 50 Horsepower and Greater. http://www.arb.ca.gov/portable/perp/perpatcm.pdf. Accessed December 2013.

The most recent standards went into effect on January 1, 2013 and range between 0.15 and 0.3 g/bhp, depending on the horsepower of the engine.

Diesel Fuel Requirements

In addition to the above source-specific standards that are typically met through emissions control technologies, ARB also directly regulates the diesel fuel used in many of these sources. These California regulations establish the same fuel sulfur content limits as the federal diesel fuel regulations described above (15 ppm or 0.0015%); however, the California fuel regulations accelerate the effective dates of the requirements for non-highway applications within California by three to five years.

Highway Diesel Fuel Sulfur Requirements

The 2007 Highway Rule also required refineries to begin producing highway diesel fuel that met a maximum sulfur standard of 15 parts per million (ppm), known as Ultra Low Sulfur Diesel (ULSD), by June 2006. All 2007 and later model year diesel-fueled vehicles must be refueled with ULSD. By integrating fuel sulfur standards and advanced pollution control technologies, the 2007 Highway Rule reduces DPM and NOX exhaust emissions of heavy-duty engines by more than 90 percent as compared to previous engine models. In addition, ULSD also enables emissions reductions from other diesel-powered highway vehicles, including cars, SUVs, and light-duty trucks.

Non-road Diesel Fuel Sulfur Requirements

The Non-road Tier 4 Final Rule for non-road diesel engines also established fuel sulfur limits in order to integrate engine and fuel controls as a system to gain the greatest emission reductions. The rule required low *sulfur* (500 ppm) diesel fuel to be phased in starting in 2007, and requires ULSD (15 ppm) to be phased in over 2010-2012 for non-road, locomotive, and marine engines (though only for diesel fuel, not for marine residual fuel which is more typically used by very large ocean-going vessels). The Tier 4 engine and fuel standards complement the 2007 Highway Rule for on-road heavy-duty engine and vehicles discussed above by requiring 90 percent reductions in DPM and NOX exhaust as compared to previous engine models. With the exception of line-haul locomotives, the California Diesel Fuel Regulations (described below) generally pre-empt this rule for other sources such as intrastate locomotives and construction equipment.

California Diesel Fuel Regulations

In 1988, ARB proposed an initial diesel fuel regulation limiting *the* sulfur content and aromatic hydrocarbon content of diesel fuel for motor vehicles. In 1998, ARB identified particulate emissions from diesel-fueled engines as a TAC. ARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles[52] and the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines[53] and approved these documents in September 2000. These documents proposed to reduce diesel particulate emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020, and to require the use of state-of-the-art catalyzed diesel particulate filters and ultra-low sulfur diesel fuel. The 1988 initial diesel fuel regulation was subsequently

[52] ARB, accessed on August 29, 2013. Final Diesel Risk Reduction Plan with Appendices. http://www.arb.ca.gov/diesel/documents/rrpapp.htm.

[53] ARB, accessed on August 29, 2013. Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines. http://www.arb.ca.gov/diesel/documents/rmg.htm.

amended, and additional regulations were passed. The following are current standards for diesel fuel in California:[54]

- *Sulfur Content of Diesel Fuel*[55] – This standard prohibited the sale of vehicular diesel fuel with a sulfur content exceeding 500 ppm by weight after 1993. Starting in 2006, the sulfur limit was reduced to 15 ppm to be phased in over June through September 2006.
- *Aromatic Hydrocarbon Content of Diesel Fuel*[56] – This standard prohibited the sale or supply of any diesel fuel after 1993 if the aromatic hydrocarbon content exceeds 10 percent by volume.
- *Lubricity of Diesel Fuel*[57]– This standard prohibits the sale or supply of any diesel fuel unless the fuel meets minimum lubricity level.

California Green Building Standards Code (CALGreen)

CALGreen is the green building code specific to the state of California, adopted in January 2010 and effective as of January 2011 for residential and non-residential new construction projects. This code aims to improve safety, health and general welfare of the public in California by reducing the negative impacts of construction and buildings on the environment and encouraging sustainable construction practices. Through the promotion of sustainable planning and design, energy efficiency, water efficiency and conversion, material conversion and resources efficiency and environmental quality, CALGreen aims to support a high standard for green buildings in California and lower the overall impacts that buildings pose on the environment. The code is composed of mandatory measures that must be implemented by local jurisdictions as well as voluntary measures called Tiers.

Regional Regulations -Bay Area Air Quality Management District

BAAQMD attains and maintains air quality conditions in the SFBAAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of BAAQMD includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. BAAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the federal CAA, FCAAA, and the California CAA.

In 2011, BAAQMD released the update to its CEQA Guidelines. This is an advisory document that provides the lead agency, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. The guidelines also identified CEQA thresholds of significance for toxic air contaminants and $PM_{2.5}$. The updated guidelines were challenged in the case *California Building Industry Association v. Bay Area Air Quality Management District*. On March 5th 2012, the Alameda County Superior Court ruled that the BAAQMD's adoption of thresholds of significance was a "project"

[54] Title 13, CCR, Sections 2281, 2282, 2284

[55] ARB, 2004. Amendments to the California Diesel Fuel Regulations, Sulfur Content of Diesel Fuel. Title 13 California Code of Regulations, Section 2281. August.

[56] ARB, 2004. Amendments to the California Diesel Fuel Regulations, Aromatic Hydrocarbon Content of Diesel Fuel. Title 13 California Code of Regulations, Section 2282. August.

[57] ARB, 2004. Amendments to the California Diesel Fuel Regulations, Lubricity of Diesel Fuel. Title 13 California Code of Regulations, Section 2284. August.

under CEQA, and ordered the BAAQMD to set aside the thresholds until it complied with CEQA requirements.[58] In view of this court order, the BAAQMD ceased recommending that their thresholds be used as a generally applicable measure of a project's significant air quality impacts, and instead recommended that lead agencies determine appropriate air quality thresholds of significance based on substantial evidence in the record. On August 13th 2013, the California First District Court of Appeal reversed the Superior Court's decision, ruling that adoption of CEQA significance thresholds does not constitute a "project" under CEQA, and therefore does not require CEQA review.[59] The California Building Industry Association may seek review of this decision in the California Supreme Court. The BAAQMD has not yet taken action to reinstate the CEQA thresholds or otherwise respond to the Court of Appeal decision. The ultimate outcome of this litigation is still uncertain. In accordance with State CEQA guidelines, in the absence of specific local government or agency thresholds, lead agencies must make significance determinations based on the substantial evidence in the record for each project. The significance thresholds for this project have been adopted by the City of Oakland and are listed in the Impact Assessment section of this chapter.

Air Quality Plans for Criteria Air Pollutants.

As stated above, BAAQMD prepares plans to attain ambient air quality standards in the SFBAAB. The 1994 Carbon Monoxide Maintenance Plan was developed in coordination with the Association of Bay Area Governments (ABAG) to ensure continued attainment of the national CO standard.

In coordination with the Metropolitan Transportation Commission (MTC) and ABAG, the BAAQMD has prepared both federal and State air quality plans to bring the SFBAAB into attainment with federal and State O_3 standards. The Bay Area does not attain either the federal or State O_3 standards. Currently, there are three plans for the Bay Area:

- 2001 Ozone Attainment Plan, which describes the Bay Area's strategy for compliance with the federal 1-hour O_3 standard. Although the USEPA revoked the federal 1-hour O_3 standard on June 15, 2005, the emission reduction commitments in the plan are still being carried out by the BAAQMD.
- 2005 Bay Area Ozone Strategy, which reviews the region's progress in reducing ozone levels. The plan describes current conditions and charts a course for future actions to further reduce ozone and ozone precursor levels in the Bay Area and achieve compliance with the State 1-hour O_3 standard. Control strategies identified in the plan include stationary source measures, mobile source measures, and transportation control measures.
- 2010 Clean Air Plan, which provides control strategies to reduce O_3, PM, air toxics, and greenhouse gases (GHGs) and specifically addresses nonattainment of the State O_3 standards in the SFBAAB. The purpose of the 2010 Clean Air Plan is to:
  - Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California CAA to implement - all feasible measures- to reduce ozone;
  - Provide a control strategy to reduce O_3, PM, air toxics, and GHGs in a single, integrated plan;

[58] Alameda County Superior Court, 2012. California Building Industry Association v. Bay Area Air Quality Management District, Case RG10548693. March 5, 2012. Website: http://apps.alameda.courts.ca.gov/domainweb/html/casesumbody.html.

[59] California Court of Appeals First District, 2013. California Building Industry Association v. Bay Area Air Quality Management District, Case A135335 and A136212. August 13, 2013. Website: http://www.courts.ca.gov/opinions/documents/A135335.PDF.

- Review progress in improving air quality in recent years;
- Establish emission control measures to be adopted or implemented in the 2009-2012 timeframe.

The Bay Area also does not attain the State PM_{10} and $PM_{2.5}$ standards. As explained above; the 2010 Clean Air Plan is an integrated plan which also provides a comprehensive program of control strategies for PM in the Bay Area. This includes measures to reduce emissions and ambient concentrations of PM, as well as population exposure to PM. [60] The control strategy serves as the backbone of the Air District's current PM control program. The 2010 Plan includes 55 control measures to reduce emissions of PM, PM precursors and other air pollutants from a wide variety of emission sources[61]. The control measures can be classified into five main categories:

- Stationary Source Measures (SSMs)
- Mobile Source Measures (MSMs)
- Transportation Control Measures (TCMs)
- Land Use and Local Impact Measures (LUMs)
- Energy and Climate Measures (ECMs)

In addition to the 2010 Clean Air Plan, BAAQMD has also initiated the Community Air Risk Evaluation (CARE) program in 2004. This program has helped identify communities in the Bay Area that are disproportionately impacted by local emission sources. The CARE program serves as a foundation for the District's efforts to reduce population exposure to TACs, including DPM. Further details regarding the CARE program are provided under the TACs local regulation discussion below.

Local Air Toxic Regulations and Policies

At the local level, air pollution control or management districts may adopt and enforce ARB control measures. BAAQMD limits emissions and public exposure to TACs through a number of programs. Under BAAQMD Rule 2-1 (General Permit Requirements), Rule 2-2 (New Source Review [NSR]), and Rule 2-5 (NSR of Toxic Air Contaminants), all sources that have the potential to emit TACs are required to obtain permits from BAAQMD. Permits may be granted if the sources are constructed and operated in accordance with applicable regulations, including NSR standards and ATCM. BAAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions, and on the proximity of the facilities to sensitive receptors.

BAAQMD analyzes sources that require a permit (e.g., performs health risk assessments) based on their potential to emit TACs. If it is determined that the project alternatives' emissions would exceed BAAQMD's threshold of significance for TACs, as identified below, the source has to implement BACT for TACs (T-BACT) to reduce emissions. If a source cannot reduce the risk below the threshold of significance even after implementing T-BACT, then BAAQMD will deny the permit. BAAQMD permit requirements help to prevent problems from new emissions sources and reduce emissions from existing sources by requiring them to apply new technology when retrofitting. BAAQMD's air quality permitting

[60] BAAQMD. 2012. Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area. November.

[61] BAAQMD, accessed on August 19, 2013. Particulate matter (PM) Planning. http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/PM-Planning.aspx.

process applies to stationary sources. New emergency generators included the Project will have to comply with these requirements as applicable.[62]

Properties that are exposed to elevated levels of TACs from non-stationary sources and the non-stationary sources themselves (e.g., on-road vehicles) are not subject to air quality permits. Further, for reasons of feasibility and practicality, mobile sources (e.g., cars, trucks) are not required to implement T-BACT even if they have the potential to expose adjacent properties to elevated levels of TACs. Rather, emissions controls on mobile sources are subject to regulations implemented at the federal and State levels by USEPA and ARB, respectively.

Under the CARE program, BAAQMD aims to identify areas (referred to in this context as "priority" or "impacted" communities) with high TAC emissions and sensitive populations that could be affected by them, and to use this information to establish policies and programs to reduce TAC emissions and exposures.[63]

The main objectives of the program are to:

- Evaluate potential health risks associated with exposure to TACs from both stationary and mobile sources.
- Assess potential exposures to sensitive receptors and identify impacted communities
- Prioritize TAC reduction measures for significant TAC sources in impacted communities
- Develop and implement mitigation measures—such as grants, guidelines, or regulations—to improve air quality, focusing initially on priority communities.

The Coliseum District and the entire Plan Buildout area is located within the Western Alameda County Care community, which is bordered by the I-880 freeway.[64] Under the CARE program, the Cumulative Impacts Working Group was formed in 2009 to discuss revisions to the District's Regulation 2, Rule 5 and to the CEQA Guidelines. The recommendations of the Working Group are incorporated into the BAAQMD 2012 CEQA Guidelines, which, with the City of Oakland CEQA Significance Thresholds, are used in the evaluation of the impacts of the Project. Additionally, new or modified sources in the Plan area could be eligible for grants and incentives from the BAAQMD to achieve the greatest emission reductions from mobile sources and encourage innovative greenhouse gas reduction efforts to improve air quality for the entire Bay Area.

[62] BAAQMD also regulates NOx and CO emissions from stationary engines through Rule 9-8 (Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines), but emergency standby engines are exempt from this regulation (9-8-110.5). http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Rules%20and%20Regs/reg%2009/rg0908.ashx?la=en. Accessed December 2013.

[63] BAAQMD Care Program. Accessed on August 2013. http://www.baaqmd.gov/Divisions/Planning-and-Research/CARE-Program.aspx.

[64] BAAQMD. Applied Method for Developing Polygon Boundaries for CARE Impacted Communities. Dec, 2009. Accessed October 31, 2013. http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/ImpactedCommunitiesMethodsMemo.ashx

New Source Review

The BAAQMD's New Source Review regulations predominantly apply to non-attainment pollutants. The purpose of the New Source Review rule is to provide for the review of new and modified sources and provide mechanisms, including the use of best available control technology for both criteria and toxic air pollutants, and emissions offsets by which authorities to construct such sources could be granted. The New Source Review regulations also include Prevention of Significant Deterioration (PSD) rules for attainment pollutants. PSD rules are designed to ensure that the emission sources will not cause or interfere with the attainment or maintenance of ambient air quality standards.

With respect to the construction phase of the proposed Plan, applicable BAAQMD regulations would relate to portable equipment (e.g., Portland concrete batch plants, and gasoline- or diesel-powered engines used for power generation, pumps, compressors, pile drivers, and cranes), architectural coatings, and paving materials. Equipment used during project construction would be subject to the requirements of BAAQMD Regulation 2 (Permits), Rule 1 (General Requirements) with respect to portable equipment unless exempt under Rule 2-1-105 (Exemption, Registered Statewide Portable Equipment); BAAQMD Regulation 8 (Organic Compounds), Rule 3 (Architectural Coatings); and BAAQMD Regulation 8 (Organic Compounds), Rule 15 (Emulsified and Liquid Asphalts). With respect to the operational phase of the proposed Plan, BAAQMD Regulation 2, Permits would apply to new or modified stationary sources proposed in the Planning Area.

Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant and often can generate citizen complaints to local governments and BAAQMD. BAAQMD's Regulation 7 (Odorous Substances) places general limitations on odorous substances and specific emission limitations on certain odorous compounds in the SFBAAB. This regulation does not apply until the Air Pollution Control Officer (APCO) receives, within a 90-day period, 10 or more odor complaints alleging that a person or entity has caused odors at or beyond the source's property line, which are perceived to be objectionable by the complainants in the normal course of their work, travel, or residence. When this regulation becomes effective as a result of complaints, the limits specified in the regulation remain effective until such time as no complaints have been received by the APCO for 1 year. The limits specified by this regulation become applicable again if the APCO receives odor complaints from five or more complainants within a 90-day period.

Local Regulations

City of Oakland General Plan

Land Use and Transportation Element (LUTE). The LUTE of the Oakland General Plan contains the following policies that address issues related to air quality:

- Objective T2: Provide mixed use, Transit-Oriented Development that encourages public transit use and increases pedestrian and bicycle trips at major transportation nodes.
- Policy T.2.1: Encouraging Transit-Oriented Development. Transit-Oriented Development should be encouraged at existing or proposed transit nodes, defined by the convergence of two or more modes of public transit such as BART, bus, shuttle service, light rail or electric trolley, ferry, and inter-city or commuter rail.
- Policy T.2.2: Guiding Transit-Oriented Development. Transit-Oriented Developments should be pedestrian-oriented, encourage night and day time use, provide the neighborhood with needed

goods and services, contain a mix of land uses, and be designed to be compatible with the character of surrounding neighborhoods.

- Policy T2.5: Linking Transportation Activities. Link transportation facilities and infrastructure improvements to recreational uses, job centers, commercial nodes, and social services (i.e., hospitals, parks, or community centers).
- Policy T3.2: Promoting Strategies to Address Congestion. The city should promote and participate in both local and regional strategies to manage traffic supply and demand where unacceptable levels of service exist or are forecast to exist.
- Policy T3.5: Including Bikeways and Pedestrian Walks. The City should include bikeways and pedestrian ways in the planning of new, reconstructed, or realigned streets, wherever possible.
- Policy T3.6: Encouraging Transit. The City should encourage and promote use of public transit in Oakland by expediting the movement of and access to transit vehicles on designated "transit streets" as shown on the Transportation Plan.
- Policy T3.7: Resolving Transportation Conflicts. The city, in constructing and maintaining its transportation infrastructure, shall resolve any conflicts between public transit and single occupant vehicles in favor of the transportation mode that has the potential to provide the greatest mobility and access for people, rather than vehicles, giving due consideration to the environment, public safety, economic development, health, and social equity impacts.
- Policy T4.1: Incorporating Design Features for Alternative Travel. The City will require new development, rebuilding, or retrofit to incorporate design features in their projects that encourage use of alternative modes of transportation such as transit, bicycling, and walking.
- Policy T4.2: Creating Transportation Incentives. Through cooperation with other agencies, the City should create incentives to encourage travelers to use alternative transportation options.
- Policy T4.3: Reducing Waiting Times. The City should encourage transit operators to reduce waiting times for users by coordinating schedules and maintaining intervals of fifteen (15) minutes or less between buses during daytime periods.
- Policy T4.4: Developing Light Rail or Electric Trolley. The City supports the development of light rail or trolley bus along Regional Transit streets in high travel demand on corridors.
- Policy T4.5: Preparing a Bicycle and Pedestrian Master Plan. The City should prepare, adopt, and implement a Bicycle and Pedestrian Master Plan as a part of the Transportation Element of [the] General Plan.
- Policy T4.6: Making Transportation Accessible for Everyone. Alternative modes of transportation should be accessible for all of Oakland's population. Including the elderly, disable, and disadvantaged.
- Policy T4.7: Reusing Abandoned Rail Lines. Where rail lines (including sidings and spurs) are to be abandoned, first consideration should be given to acquiring the line for transportation and recreational uses, such as bikeways, footpaths, or public transit.
- Policy T6.1: Posting Maximum Speeds. Collector streets shall be posted at a maximum speed (usually a maximum speed of 25 miles per hour), except where a lower speed is dictated by safety and allowable by law.
- Policy T6.2: Improving Streetscapes. The City should make major efforts to improve the visual quality of streetscapes. Design of the streetscape, particularly in neighborhoods and commercial

centers, should be pedestrian-oriented and include lighting, directional signs, trees, benches and other support facilities.

- Policy T6.3: Making the Waterfront Accessible. The waterfront should be made accessible to the pedestrians and bicyclists in Oakland's neighborhoods.
- Policy D3.2: Incorporating Parking Facilities. New parking facilities for cars and bicycles should be incorporated into the design of any project in a manner that encourages and promotes safe pedestrian activity.
- Policy D10.6: Creating Infill Housing. Infill housing that respects surrounding development and the streetscape should be encouraged in the downtown to strengthen or create distinct districts.
- Policy D11.1: Promoting Mixed-Use Development. Mixed use developments should be encouraged in the downtown for such purposes as to promote its diverse character, provide for needed goods and services, support local art and culture, and give incentive to reuse existing vacant or underutilized structures.
- Policy N3.2: Encouraging Infill Development. In order to facilitate the construction of needed housing units, infill development that is consistent with the General Plan should take place throughout the City of Oakland.
- Policy W12.4: Higher residential densities should be permitted in appropriate areas along the estuary where design and development intensity allows for the preservation of public views, vistas, open space, and waterfront access. Access to transportation corridors and transit should be promoted.

The LUTE also accounts for the air quality considerations of land use compatibility decisions with an objective to minimize land use compatibility conflicts (Objective I/C4) including the following policies:

- Policy I/C4.1: Protecting Existing Activities. Existing industrial, residential, and commercial activities and areas which are consistent with long term land use plans for the City should be protected from the intrusion of potentially incompatible land uses.
- Policy I/C4.2: Minimizing Nuisances. The potential for new or existing industrial or commercial uses, including seaport and airport activities, to create nuisance impacts on surrounding residential land uses should be minimized through appropriate siting and efficient implementation and enforcement of environmental and development controls. Where residential development would be located above commercial uses, parking garages, or any other uses with a potential to generate odors, the odor-generating use should be properly vented (e.g., located on rooftops) and designed (e.g., equipped with afterburners) so as to minimize the potential for nuisance odor problems.

The **Open Space, Conservation and Recreation Element** (OSCAR) Element of the Oakland General Plan (Oakland, 1996) contains Air Quality policies that address criteria pollutants and would apply to the proposed project, including Policy CO-12.1: Land use patterns which promote air quality, Policy CO-12.4: Design of development to minimize air quality impacts, Policy CO-12.5: Use of best available control technology, and Policy CO-12.6: Control of dust emissions.

- Policy CO-12.1: Land Use Patterns Which Promote Air Quality: Promote land use patterns and densities which help improve regional air quality conditions by: (a) minimizing dependence on single passenger autos; (b) promoting projects which minimize quick auto starts and stops, such as live-work development, mixed use development, and office development with ground-floor retail space; (c) separating land uses which are sensitive to pollution from the sources of air pollution; and (d)

supporting telecommuting, flexible work hours, and behavioral changes which reduce the percentage of people in Oakland who must drive to work on a daily basis.

- Policy CO-12.2: Coordinated Transportation Systems. Maintain a coordinated bus, rail, and ferry transit system which provides efficient service to major destinations and promotes alternatives to the single passenger auto.
- Policy CO-12.3: Transportation Systems Management. Expand existing transportation systems management and transportation demand management strategies which reduce congestion, vehicle idling, and travel in single passenger autos.
- Policy CO-12.4: Design of Development to Minimize Air Quality Impacts: Require that development projects be designed in a manner which reduces potential adverse air quality impacts. This may include: (a) the use of vegetation and landscaping to absorb carbon monoxide and to buffer sensitive receptors; (b) the use of low-polluting energy sources and energy conservation measures; (c) designs which encourage transit use and facilitate bicycle and pedestrian travel.
- Policy CO-12.5: Use of Best Available Control Technology: Require new industry to use best available control technology to remove pollutants, including filtering, washing, or electrostatic treatment of emissions.
- Policy CO-12.6: Control of Dust Emissions: Require construction, demolition and grading practices which minimize dust emissions.
- Policy CO-12.7: Regional Air Quality Planning. Coordinate local air quality planning efforts with other agencies, including adjoining cities and counties and the public agencies responsible for monitoring and improving air quality. Cooperate with regional agencies such as the BAAQMD, the MTC, the ABAG, and the Alameda County Congestion Management Agency in developing and implementing regional air quality strategies. Continue to work with BAAQMD and the California Air Resources Board in enforcing the provisions of the California and Federal Clean Air Acts, including the monitoring of air pollutants on a regular and on-going basis.

City of Oakland Municipal Code

Pursuant to the City of Oakland Municipal Code, Title 15 Buildings and Construction, Chapter 15.36 Demolition Permits, 15.36.100 Dust Control Measures, includes the following language:

> *"'Best Management Practices' shall be used throughout all phases of work, including suspension of work, to alleviate or prevent fugitive dust nuisance and the discharge of smoke or any other air contaminants into the atmosphere in such quantity as will violate any city or regional air pollution control rules, regulations, ordinances, or statutes. Water or dust palliatives or combinations of both shall be applied continuously and in sufficient quantity during the performance of work and at other times as required. Dust nuisance shall also be abated by cleaning and sweeping or other means as necessary. A dust control plan may be required as condition of permit issuance or at other times as may be deemed necessary to assure compliance with this section. Failure to control effectively or abate fugitive dust nuisance or the discharge of smoke or any other air contaminants into the atmosphere may result in suspension or revocation of the permit, in addition to any other applicable enforcement actions or remedies. (Ord. 12152 § 1, 1999)*

Oakland Green Building Ordinance

The Green Building Ordinance was adopted by the City of Oakland in 2005, in conjunction with the Sustainable Communities Initiative of 1998, in order to maintain high standards of green development and new construction throughout the City. This ordinance requires green performance in major civic projects and provides policies to assist private development projects in improving green performance.

In October of 2010, the city adopted the Green Building Ordinance for Private Development Projects. The ordinance affects a wide range of projects from new construction of single- and multi-family residential as well as non-residential projects, additions and alterations, modifications or demolition of historic resources, construction of affordable housing and mixed-use projects, as well as projects requiring a landscape plan. Projects that are affected based on defined thresholds in the ordinance include:

- Residential and non-residential new construction, additions and alterations;
- Removal of a historic resource and new construction;
- Historic residential and non-residential additions and alterations;
- Mixed use construction; and
- Construction requiring a landscape plan.
- Certain types of projects are required to receive certification through a non-governmental green rating agency, including:
- All new residential construction and residential additions or alterations over 1,000 square feet, certified through Built It Green's GreenPoint Rated program.
- All new non-residential construction and non-residential additions or alterations.

In addition to Oakland's local Green Building Ordinance, the state of California recently adopted the new Green Building Code known as CALGreen (described above). Both the City's local ordinance and CALGreen are now in effect.

City of Oakland Conditions of Approval and Uniformly Applied Development Standards Imposed as Standard Conditions of Approval

The City's Standard Conditions of Approval are incorporated into projects regardless of a project's environmental determination. As applicable, the Standard Conditions of Approval are adopted as requirements of an individual project when it is approved by the City and are designed to, and will, substantially mitigate environmental effects. For the proposed project, the relevant standard conditions regarding air quality would be incorporated as part of the project. If a Standard Condition of Approval would reduce a potentially significant impact to less than significant, the impact will be determined to be less than significant and no mitigation is imposed. Where there are impacts associated with a project site that will result in significant environmental impacts despite implementation of the Standard Conditions of Approval, additional mitigation measures are recommended.

The City's Standard Conditions of Approval relevant to this project's air quality impacts are shown below for reference. The SCA below applies to all construction projects:

> **SCA Air-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions).** *Ongoing throughout demolition, grading, and/or construction.* During construction, the project applicant shall require the construction contractor to implement all of the following applicable measures recommended by the Bay Area Air Quality Management District (BAAQMD):

BASIC (Applies to ALL construction sites)

a. Water all exposed surfaces of active construction areas at least twice daily (using reclaimed water if possible). Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.

b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).

c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d. Pave all roadways, driveways, sidewalks, etc. as soon as feasible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

e. Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).

f. Limit vehicle speeds on unpaved roads to 15 miles per hour.

g. Idling times shall be minimized either by shutting equipment off when not is use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations. Clear signage to this effect shall be provided for construction workers at all access points.

h. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

i. Post a publicly visible sign that includes the contractor's name and telephone number to contact regarding dust complaints. When contacted, the contractor shall respond and take corrective action within 48 hours. The telephone numbers of contacts at the City and the BAAQMD shall also be visible. This information may be posted on other required on-site signage.

ENHANCED: All "Basic" controls listed above plus the following controls if the project involves:

i. 114 or more single-family dwelling units;

ii. 240 or more multi-family units;

iii. Nonresidential uses that exceed the applicable screening size listed in the Bay Area Air Quality Management District's CEQA Guidelines;

iv. Demolition permit;

v. Simultaneous occurrence of more than two construction phases (e.g., grading and building construction occurring simultaneously);

vi. Extensive site preparation (i.e., the construction site is four acres or more in size); or

vii. Extensive soil transport (i.e., 10,000 or more cubic yards of soil import/export).

j. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

k. All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph.

l. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.

m. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).

n. Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.

o. Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize windblown dust. Wind breaks must have a maximum 50 percent air porosity.

p. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

q. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.

r. All trucks and equipment, including tires, shall be washed off prior to leaving the site.

s. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.

t. Minimize the idling time of diesel-powered construction equipment to two minutes.

u. The project applicant shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate matter (PM) reduction compared to the most recent California Air Resources Board (CARB) fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as they become available.

v. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings).

w. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM.

x. Off-road heavy diesel engines shall meet the CARB's most recent certification standard.

y. At all construction sites where access to grid power is available, grid power electricity shall be used. If grid power is not available, then propane or natural gas generators may be used, as feasible. Only if propane or natural gas generators prove infeasible shall portable diesel engines be allowed.

The following condition applies to all projects that meet all of the following criteria:

- The project involves any of the following sensitive land uses:
  - New residential facilities or new dwelling units; or
  - New or expanded schools, daycare centers, parks, nursing homes, or medical facilities; and
- The project is located within 1,000' of one or more of the following sources of air pollution:
  - Freeway;
  - Roadway with significant traffic (at least 10,000 vehicles/day);
  - Rail line (except BART) with over 30 trains per day;
  - Distribution center that accommodates more than 100 trucks per day, more than 40 trucks with operating Transportation Refrigeration Units (TRU) per day, or where the TRU unit operations exceed 300 hours per week;

- Major rail or truck yard (such as the Union Pacific rail yard adjacent to the Port of Oakland);
- Ferry terminal;
- Port of Oakland; or
- Stationary pollutant source requiring a permit from BAAQMD (such as a diesel generator); and

- The project exceeds the health risk screening criteria after a screening analysis is conducted in accordance with the Bay Area Air Quality Management (BAAQMD) CEQA Guidelines.

  SCA Air-2: Exposure to Air Pollution (Toxic Air Contaminants). Health Risk Reduction Measures:

  Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants. The project applicant shall choose **one** of the following methods:

  a. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with the California Air Resources Board (CARB) and the Office of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents/occupants/users to air pollutants. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

  b. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:

     i. Installation of air filtration to reduce cancer risks and Particulate Matter (PM) exposure for residents, and other sensitive populations, in the project that are in close proximity to sources of air pollution. Air filter devices shall be rated MERV-13 or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.

     ii. Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible.

     iii. The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall not be located immediately adjacent to a loading dock or where trucks concentrate to deliver goods, if feasible.

     iv. Sensitive receptors shall not be located on the ground floor, if feasible.

     v. Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (*Pinus nigra* var. *maritima*), Cypress (*X Cupressocyparis leylandii*), Hybrid popular (*Populus deltoids X trichocarpa*), and Redwood *(Sequoia sempervirens*).

     vi. Within the project site, sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible.

     vii. Within the project site, existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible.

viii. Within the project site, emissions from diesel trucks shall be reduced through implementing the following measures, if feasible:

- Installing electrical hook-ups for diesel trucks at loading docks.
- Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards.
- Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels.
- Prohibiting trucks from idling for more than two minutes.
- Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented.

ix. When Required: Prior to approval of construction-related permit

x. Initial Approval: Planning and Zoning Division

xi. Monitoring/Inspection: Building Services Division

xii. Maintenance of Health Risk Reduction Measures

c. Requirement: The project applicant shall maintain, repair, and/or replace installed health risk reduction measures, including but not limited to the HVAC system (if applicable), on an ongoing and as-needed basis. Prior to occupancy, the project applicant shall prepare and then distribute to the building manager/operator an operation and maintenance manual for the HVAC system and filter including the maintenance and replacement schedule for the filter.

i. When Required: Ongoing

ii. Initial Approval Authority: N/A

iii. Monitoring/Inspection/Enforcement: Building Services Division

SCA Air-3: Asbestos Removal in Structures (Prior to issuance of a demolition permit). If asbestos-containing materials (ACM) are found to be present in building materials to be removed, demolition and disposal, the project applicant shall submit specifications signed by a certified asbestos consultant for the removal, encapsulation, or enclosure of the identified ACM in accordance with all applicable laws and regulations, including but not necessarily limited to: California Code of Regulations, Title 8; Business and Professions Code; Division 3; California Health & Safety Code 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended.

Impacts, Standard Conditions of Approval and Mitigation Measures

Thresholds of Significance

The City of Oakland CEQA Thresholds of Significance Guidelines was used to assess the impact of the Coliseum City Specific Plan on air quality. The approval and development of the Coliseum City Specific Plan would have a significant air quality impact if it were to:

Plan-Level Impacts

1. Fundamentally conflict with the primary goals of the Bay Area Clean Air Plan (CAP) or the plan does not demonstrate reasonable efforts to implement control measures contained in the CAP or the plan conflicts with or obstructs implementation of any control measures in the CAP;
2. Not include special overlay zones containing goals, policies, and objectives to minimize potential Toxic Air Contaminant (TAC) impacts in areas located (a) near existing and planned sources of TACs and (b) within 500 feet of freeways and high-volume roadways containing 100,000 or more average daily vehicle trips; or
3. Not identify existing and planned sources of odors with policies to reduce potential odor impacts.

Project Level Impacts

4. During project construction result in average daily emissions of 54 pounds per day of ROG, NOx, or $PM_{2.5}$ or 82 pounds per day of PM_{10};
5. During project operation result in average daily emissions of 54 pounds per day of ROG, NOx, or $PM_{2.5}$ or 82 pounds per day of PM_{10}; or result in maximum annual emissions of 10 tons per year of ROG, NOx, or $PM_{2.5}$ or 15 tons per year of PM_{10};
6. Contribute to carbon monoxide (CO) concentrations exceeding the California Ambient Air Quality Standards (CAAQS) of nine parts per million (ppm) averaged over eight hours and 20 ppm for one hour.
7. For new sources of Toxic Air Contaminants (TACs)[65], during either project construction or project operation expose sensitive receptors to substantial levels of TACs under project conditions resulting in:
   - an increase in cancer risk level greater than 10 in one million,
   - a non-cancer risk (chronic or acute) hazard index greater than 1.0, or
   - an increase of annual average $PM_{2.5}$ of greater than 0.3 micrograms per cubic meter;

   Or, under cumulative conditions, resulting in:
   - a cancer risk level greater than 100 in a million,
   - a non-cancer risk (chronic or acute) hazard index greater than 10.0, or
   - annual average $PM_{2.5}$ of greater than 0.8 micrograms per cubic
8. Expose new sensitive receptors to substantial ambient levels of Toxic Air Contaminants (TACs)[66] resulting in

[65] Pursuant to the BAAQMD CEQA Guidelines, when siting new TAC sources consider receptors located within 1,000 feet. For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers. The cumulative analysis should consider the combined risk from all TAC sources

[66] Pursuant to the BAAQMD CEQA Guidelines, when siting new sensitive receptors consider TAC sources located within 1,000 feet including, but not limited to, stationary sources, freeways, major roadways (10,000 or greater vehicles per day), truck distribution centers, airports, seaports, ferry terminals, and rail lines. For this

- a cancer risk level greater than 100 in a million,
- a non-cancer risk (chronic or acute) hazard index greater than 10.0, or
- annual average $PM_{2.5}$ of greater than 0.8 micrograms per cubic meter; or

9. Frequently and for a substantial duration, create or expose sensitive receptors to substantial objectionable odors affecting a substantial number of people[67]

Approach to Analysis

The City's Thresholds for Air Quality are generally based upon the BAAQMD 2011 CEQA Guidelines and Thresholds, and recommend evaluation of air quality impacts consistent with the most recent BAAQMD Guidelines. The analysis of potential air quality impacts uses both the project-level and the plan-level methodology identified by the BAAQMD, outlined in the BAAQMD 2012 CEQA Guidelines. The Coliseum District and Plan Buildout are described in detail in Chapter 3, Project Description.

The analysis of potential air quality impacts uses the project-level methodology identified by the BAAQMD, and outlined in the BAAQMD 2012 CEQA Guidelines to evaluate impacts from development of the Coliseum District and the plan-level methodology to evaluate impacts of the Plan Buildout. Although individual projects developed under the Plan Buildout may undergo separate environmental review under CEQA, this hybrid of a project-level and plan-level analysis considers construction and operational emissions from the Coliseum District development and potential operation emissions of future projects, and represents adequate environmental analysis under CEQA for individual development projects under the Coliseum Area Plan (see Chapter 3, Project Description).

The health risk analysis contained herein is based on air dispersion modeling of Project-specific emissions as well as emissions from other existing sources. Health risk impacts are determined from air concentrations using the methodology described below.

CEQA requires the analysis of potential adverse effects of a project on the environment. Potential effects of the environment on a project are legally not required to be analyzed or mitigated under CEQA. However, this EIR nevertheless analyzes potential effects of the environment on the project specifically in regards to ambient air quality conditions and the potential health risk affects that existing air quality may have on new sensitive receptors, in order to provide that information to the public and decision-makers. Where a potentially significant effect of the environment on the project is identified, this EIR identifies City Standard Conditions of Approval and/or project-specific non-CEQA recommendations to address these issues.

threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers.

[67] For this threshold, sensitive receptors include residential uses, schools, daycare centers, nursing homes, and medical centers (but not parks)

Plan Level Analysis

Consistency with Clean Air Plan (CAP) - Control Measures

Impact Air-1: Adoption and implementation of the Project (at the Coliseum District and under Plan Buildout) would not fundamentally conflict with or obstruct implementation of any control measures in the CAP, and the Specific Plan demonstrates reasonable efforts to implement CAP control measures. (**LTS**)

On September 15, 2010, the Air District (BAAQMD) Board of Directors adopted the final Bay Area 2010 Clean Air Plan (CAP) and certified the Final Environmental Impact Report on the CAP. The 2010 CAP serves to update the Bay Area Ozone Plan in compliance with the requirements of Chapter 10 of the California Health & Safety Code. In addition, the 2010 CAP provides an integrated, multi-pollutant strategy to improve air quality, protect public health, and protect the climate. The primary goals of the CAP are to attain air quality standards, reduce population exposure and protect public health in the Bay Area, and to reduce greenhouse gas emissions and protect the climate. The 2010 CAP includes fifty-five control measures, identified in the control strategy table in Volume II of the CAP. The applicable control measures include transportation control measures, mobile source measures applicable to construction equipment, land use and local impact measures, and energy and climate measures. In addition, three stationary source measures address emissions of CO, $PM_{2.5}$ and other TACS from permitted stationary sources. The energy and climate measures are addressed in Section 4.6, Greenhouse Gas Emissions and Climate Change. Consistency with the CAP control measures is discussed below.

Transportation Control Measures

Transportation Control Measures (TCMs) are strategies to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions. The draft Control Strategy includes 17 TCMs to improve transit service; encourage walking, bicycling, and transit use; improve efficiency of the regional transit and roadway systems; support focused growth; and develop and implement pricing strategies. The TCMs are organized into five categories:

- improving transit services
- improving system efficiency
- encouraging sustainable travel behavior
- supporting focused growth, and
- implementing pricing strategies.

New TCMs have been added to emphasize the importance of smart driving and the need to reduce high-speed driving; encourage parking policies that will help to reduce motor vehicle travel; and advocate that the Air District and its regional agency partners join forces to develop a regional transportation pricing strategy.

The Coliseum Area Specific Plan would not fundamentally conflict with, but instead would support the transportation control measures of the CAP. The Coliseum Area's infill location and proximity to transit promotes infill development, reduces vehicle miles travelled by providing co-located retail, residential and employment opportunities within the Plan Area, and includes strategies for improving the efficiency of the existing transit system and to make transit (especially BART ridership at the Coliseum BART

station) more convenient and accessible. Taken together, these locational characteristics of the Specific Plan help reduce motor vehicle trips and overall vehicle miles travelled. The Project Area is also a Priority Development Area (PDA) according to the Sustainable Communities Plan developed for the Bay Area pursuant to SB 375. PDAs are specifically areas where development is encouraged due to their infill location and proximity to transit.

In addition, the CAP TCMs are addressed through implementation of the City of Oakland's SCA Transp-1, Parking and Transportation Demand Management. Specifically, SCA Transp-1 requires subsequent development projects pursuant to the Specific Plan to submit for review and approval by the Planning and Zoning Division a Transportation Demand Management (TDM) Plan containing strategies to reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable. TDM plans prepared by subsequent development projects shall be required to include strategies to increase bicycle, pedestrian, transit, and carpools/vanpool use and reduce parking demand.

Mobile Source Measures

Mobile Source Measures (MSMs) are measures that reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment through programs such as the Air District's Vehicle Buy-Back and Smoking Vehicle Programs, and promoting advanced technology vehicles that reduce emissions of criteria pollutants and/or greenhouse gases. Since CARB is responsible for establishing statewide motor vehicle emissions standards and fuel specifications, implementation of the 10 MSMs relies heavily upon incentive programs, such as the Carl Moyer Program and the Transportation Fund for Clean Air, to achieve voluntary emission reductions in advance of, or in addition to, CARB requirements.

The Coliseum Area Specific Plan would not fundamentally conflict with the CAP's Mobile Source Measures. The Specific Plan does not contain any policies or strategies that would be contrary to incentive programs to achieve voluntary emission reductions from mobile sources.

Stationary Source Measures

Stationary Source Measures (SSMs) are measures that the Air District adopts and enforces pursuant to its authority to control emissions from stationary sources of air pollution such as manufacturing facilities, refineries, dry cleaners, auto body shops, gas stations, etc. A total of 18 SSMs are proposed in the 2010 CAP control strategy to enhance the Air District's regulatory program and ensure that the Bay Area remains in the forefront in controlling emissions from stationary sources. The proposed SSMs will provide reductions in emissions of ozone precursors, direct PM and PM precursors, air toxics, and greenhouse gases.

The Coliseum Area Specific Plan would not fundamentally conflict with the CAP's Stationary Source Measures. All new development pursuant to the Specific Plan, including new sports venues, commercial uses and science and technology uses would be required to comply with all measures that the Air District adopts and enforces to control emissions from stationary sources of air pollution.

Land Use Measures

Land Use and Local Impacts Measures (LUMs) are a new category of measures designed to promote mixed use, compact development to reduce motor vehicle travel and emissions; and to ensure planning for focused growth in a way that protects people from exposure to air pollution from stationary and mobile sources of emissions. Building on the Air District's CARE program and Clean Air Communities Initiative, this component of the Control Strategy puts a special emphasis on the need to monitor and reduce population exposure to hazardous pollutants in communities that are most heavily impacted by emissions. The measures in this category draw upon the full range of tools available to the Air District,

including rulemaking, notably development of a new indirect source review rule; revised CEQA guidelines and enhanced CEQA review by the Air District; working with local jurisdictions to encourage and assist them in developing Community Risk Reduction Plans to reduce population exposure to air toxics and PM; providing incentives to reduce emissions from heavy duty diesel equipment; targeted enforcement of CARB diesel control rules; land use guidance; and enhanced air quality monitoring.

The Coliseum Area Specific Plan would not fundamentally conflict with, but instead would support the CAP's land use measures. The Specific Plan would implement urban infill development at an already urbanized site, includes transit-oriented development at the Coliseum BART station, and includes plans and strategies to improve and promote greater reliance on transit as the transportation mode of choice for sporting events and other activities at the new sports and events venues. The Specific Plan provides for a mix of land uses, compact and high-density residential and commercial activities near transit, and a land use development plan that can reduce motor vehicle travel and emissions.

Conclusions

In summary, the Specific Plan would not interfere with implementation of Clean Air Plan's control measures.

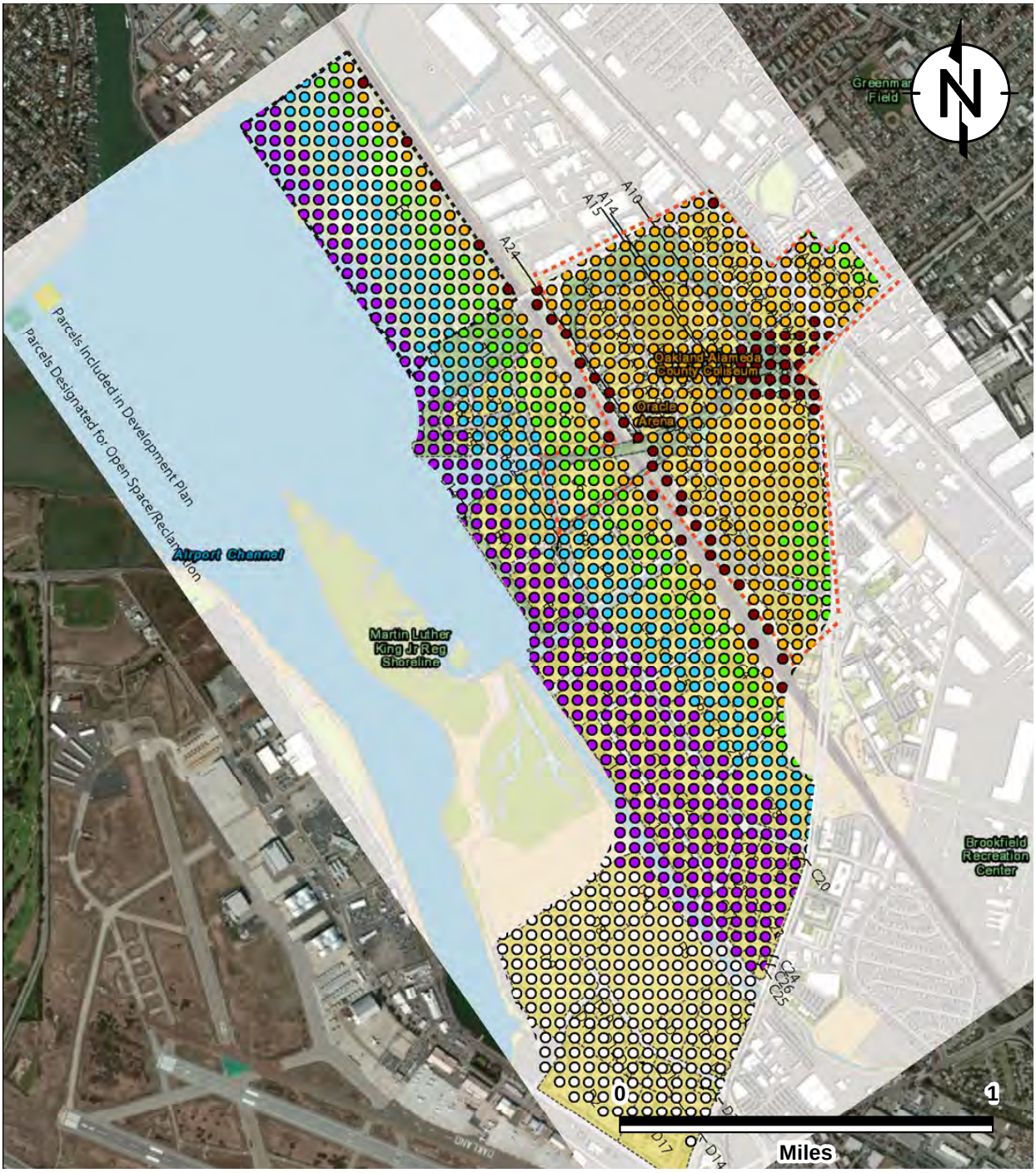
Mitigation Measures

None required

Consistency with the Clean Air Plan - Special Overlay Zones

Impact Air-2: New development within the Project Area (for both the Coliseum District and for Plan Buildout) will be located near existing and planned sources of toxic air contaminants and within 500 feet of freeways and high-volume roadways containing 100,000 or more average daily vehicle trips. However, pursuant to City of Oakland Standard Condition of Approval SCA Air-2, special overlay zones containing development standards that minimize potential exposure to toxic air contaminants will be implemented. (**LTS with SCAs**)

BAAQMD Guidelines recommend special overlay zones containing goals, policies, and objectives to minimize potential toxic air contaminant (TAC) exposure in areas located within 1,000 feet of existing and planned TAC sources and within 500 feet of freeways and high-volume roadways. New residential development is planned within the Coliseum District in areas of concern from the TAC emissions from high volumes of vehicle traffic on I-880, as well as rail traffic (see **Figure 4.2-3**).



Legend

Locomotive and Roadway Combined Cancer Risk

[# in one million]

- 5 - 10
- 11 - 20
- 21 - 30
- 31 - 50
- 51 - 100
- 101 - 190

Figure 4.2-3
Locomotive and Roadway Combined Cancer Risk

However, the City's SCA Air-2: Exposure to Air Pollution (Toxic Air Contaminants) would apply to any new residential development located near sources of PM2.5 and DPM and within 1,000 feet of stationary and mobile sources of TACs. In accordance with the BAAQMD Guidelines, when a residential development project is proposed within 1,000 feet of a stationary TAC source, the potential health risk to the project residents would be evaluated using the BAAQMD's recommended screening criteria. If the project were to exceed the screening criteria, a project-specific HRA would be prepared to quantify the project-specific health risk. This requirement is incorporated in SCA Air-2. Adoption and development under the Specific Plan would be required to implement any project-specific recommendations to reduce the potential health risks. Recommendations may include having the future project applicant install, operate and maintain a central heating and ventilation (HV) system or other air take system in the building or in each individual residential unit, that meets or exceeds an efficiency standard of MERV 13; using HEPA filters; or using ASHRAE 85% supply filters. Therefore, SCA Air-2 functions as an overlay zone with specific requirements to reduce exposure to TACs and reduce related TAC impacts. Because SCA Air-2 would be incorporated as part of the Specific Plan, adopted as a condition of approval, and required, as applicable, of the development under the Specific Plan, the impact would be less-than-significant.

Mitigation Measures

None required

Odors

Impact Air-3: Development in accordance with the Specific Plan (both at the Coliseum District and for Plan Buildout) would not expose a substantial number of new people to existing and new objectionable odors. (**LTS**)

The BAAQMD 2012 Guidelines identify wastewater treatment plants, oil refineries, asphalt plants, chemical manufacturing, painting/coating operations, coffee roasters, food processing facilities, recycling operations and metal smelters as odor sources of particular concern, and recommends buffer zones of one to two miles around them to avoid potential odor conflicts

A screening analysis was conducted in accordance with the recommendations in the BAAQMD Guidelines to determine the presence of any odor sources in the vicinity of the Project area. The public records section of the BAAQMD provided a list of all odor complaints within the City of Oakland for years 2011 to 2013. Odor complaints concerning businesses and homes beyond 2 miles of the Project area were excluded from the analysis, as were those businesses for which odor complaints were made only one or two times over the past three year period. Only two businesses are within 2 miles of the Project area and received three or more odor complaints over the past three years: A B & I Foundry at 7825 San Leandro Street, and R&G International Inc. at 851 81st Ave. These two businesses had an average of 3.0 and 3.3 complaints per year over the most recent three year period, respectively. Neither business exceeds the threshold as described by the BAAQMD CEQA Air Quality Guidelines of 5 confirmed complaints per year averaged over three years.

Given the infrequent occurrence of odor complaints, the potential for new sensitive receptors within the Project area to be affected by objectionable odors affecting a substantial number of people would be less than significant.

The next closest businesses with more than a few odor complaints in the last three year period were more than two miles from the Project area. This demonstrates that the potential for new sensitive

receptors within the Project area to be impacted by objectionable odors affecting a substantial number of people would also be less than significant.

The Project's proposed land use plan for the Coliseum District and Plan Buildout does not include any of the odor producing sources of particular concern as defined by the BAAQMD.

Mitigation Measures

None required

Project Level Analysis

Construction Period Fugitive Dust

Coliseum District and Plan Buildout

Impact Air-4: During construction, individual development projects pursuant to the Specific Plan at the Coliseum District and under Plan Buildout will generate fugitive dust from demolition, grading, hauling and construction activities. Fugitive dust will be effectively reduced to a level of less than significant with implementation of required City of Oakland Standard Conditions of Approval. (**LTS with SCA**)

Construction activities pursuant to Plan Buildout including demolition, site preparation, earthmoving and general construction activities would generate short-term emissions of fugitive dust. Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM_{10} and $PM_{2.5}$ concentrations may be adversely affected on a temporary and intermittent basis. In addition, the fugitive dust generated by construction would include larger particles that would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts.

Standard Conditions of Approval

The City of Oakland considers implementation of effective and comprehensive dust control measures (Best Management Practices) recommended by the BAAQMD as the threshold of significance for fugitive dust emissions (both PM_{10} and $PM_{2.5}$); if a project complies with specified dust control measures, it would not result in a significant impact related to construction period dust emissions. In order to be protective of the health of nearby residences as well as to reduce dust emissions that could affect regional air quality, all future development pursuant to the Specific Plan is required to implement BAAQMD recommended construction period dust control measures pursuant to the City's Standard Conditions of Approval, and to comply with the requirements found under the City Municipal Code (Section 15.36.100; Dust Control Measures). These measures include both "Basic" and "Enhanced" measures for the Project since the Project meets several of the criteria for enhanced measures. The City's Standard Conditions of Approval SCA Air-1 is consistent with both the "Basic" and "Enhanced" measures recommended by the BAAQMD.

Furthermore, to reduce the potential for asbestos-laden dust emissions, the Project is required to implement SCA Air-3: Asbestos Removal in Structures, which requires certified asbestos removal, encapsulation, or enclosure of any identified asbestos containing materials in accordance with all applicable laws and regulations, including but not necessarily limited to those of the California Code of

Regulations, the California Health & Safety Code and the Bay Area Air Quality Management District's regulations and rules.

Implementation of these standard conditions of approval would ensure that the impact of construction-period fugitive dust remains at a less than significant level.

Construction-Period Emissions of Criteria Pollutants

Coliseum District

Impact Air-5A: During construction, subsequent development at the Coliseum District pursuant to the Project will generate regional ozone precursor emissions and regional particulate matter emissions from construction equipment exhaust that, even with implementation of City of Oakland SCAs, would exceed the City's thresholds of significance. (**SU**)

Emissions Estimates

Construction activity at the Coliseum District would generate air emissions through the use of heavy-duty construction equipment, from vehicle trips hauling materials, and from construction workers traveling to and from the project site. Mobile source emissions, primarily NOx, would be generated from the use of construction equipment such as excavators, bulldozers, wheeled loaders, and cranes. During the finishing phase, paving operations and the application of asphalt, architectural coatings (i.e., paints) and other building materials would release ROG. The assessment of construction-period emissions of criteria air pollutants considers each of these sources, and recognizes that construction emissions can vary substantially from day to day, depending on the level of activity and the specific type of operation.

Criteria pollutant emissions from construction at the Coliseum District were calculated using the latest version of the California Emissions Estimator Model (CalEEMod™). CalEEMod™ is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The mobile source emission factors used in the model are derived from EMFAC2011 and the 2011 Off-Road Inventory Model.[68] Further, the model identifies mitigation measures capable of reducing criteria pollutant emissions and a tool for calculating the benefits achieved from various mitigation measures. The use of CalEEMod™ is consistent with guidance issued by BAAQMD on July 31, 2013.

Project specific construction schedules, equipment lists and vehicle trip data for new construction at the Coliseum District is not currently available, so default data provided by CalEEMod™ were used. Default data (i.e., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California Air Districts to account for local requirements and conditions.

Demolition

Two demolition scenarios for the Coliseum District were modeled using CalEEMod:

- demolition only, and

[68] EMFAC2011 is the latest installment of the EMFAC series of models, which is ARB's tool for estimating emissions from on-road vehicles. The EMFAC model and supporting documentation can be found at http://www.arb.ca.gov/msei/modeling.htm.

- demolition with on-site crushing of demolished materials.

The first scenario estimates emissions from the demolition of the existing Coliseum, Arena and other on-site structures and paving. The second scenario estimates emissions from these same demolition activities, as well as on-site crushing of concrete from the existing Coliseum, the Arena and the existing asphalt paving. The existing building square footages and CalEEMod™ defaults were used to calculate the total volume of demolished material. The mass of concrete from the existing Coliseum demolition was estimated using publically available data for similar projects.[69] The mass of material from paved parking areas was calculated assuming 100 acres of paved area, 3 inches thick.[70] The demolished concrete was assumed to be 95% re-usable. The demolished paving was assumed to be 99% re-usable. The equipment list for crushing was provided by the project acoustical consultant, based on prior experience in similar projects.[71] In both scenarios, demolition was conservatively assumed to begin on January 1, 2014 (it is recognized that no Project activity will/did occur in January 2014, but this early start date provides a conservative, "worst-case" assessment in that much of the air quality emissions performance data will improve over time, and the January 2014 analysis date will thus not overly estimate the improved performance of engine emissions or resulting air quality). The duration of the demolition phase was based on CalEEMod™ defaults. The duration of the crushing phase was based on the estimated mass of material and the processing rate of the expected crushing equipment.[72]

Off-Road Vehicles

Off-road equipment emissions were evaluated assuming that all off-road equipment use diesel fuel. This approach may slightly underestimate VOC emissions to the extent that gasoline is used, and underestimate NOx emissions to the extent that biodiesel is used. However, because diesel equipment usually contributes higher health risks for exposed populations than equipment using gasoline or other alternative fuel, the approach is considered conservative for DPM and risk estimation.

On-Road Vehicles

For criteria air pollutant emissions, default CalEEMod™ vehicle trip lengths of 12.4 miles for worker trips, 7.3 miles for vendor trips, and 20 miles for hauling trips were used. For risk estimation, vehicle trip lengths were limited to one mile from the Project boundary as risks are localized and are expected to be highest in close proximity to the bulk of the construction activity. Concentrations of mobile-source DPM emissions are typically reduced by 70 percent at a distance of approximately 500 feet.[73]

Construction Phases

Emissions from all remaining phases of construction including site preparation, grading, building construction, paving, and architectural coating were estimated. Project specific land use data for total construction at the Coliseum District was used. CalEEMod™ default off-road equipment list including

[69] New Meadowlands Stadium case study. http://www.skanska-sustainability-case-studies.com/New-Meadowlands-Stadium-USA/Green%20Aspects. A factor of 0.625 tons of concrete per cubic meter of demolished material was derived from this study. Accessed November 2013.

[70] Estimates of parking asphalt thickness provided by BKF Engineers. E-mail communication November 1, 2013.

[71] E-mail communication. Alan Rosen of Rosen Goldberg Der and Lewitz, Inc. to Lamphier-Gregory. October 31, 2013.

[72] An excavator (including excavator attachments) and skid steer were assumed to process 500 tons of material per day, and a crusher was assumed to process 100 tons of material per hour.

[73] *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005.

type, quantity, and schedule were used. Similar to the demolition phase, default CalEEMod™ vehicle trip lengths of 12.4 miles for worker trips, 7.3 miles for vendor trips, and 20 miles for hauling trips were used for criteria air pollutant emissions calculations, while trip length of one mile was used for the risk estimation.

The start date for the construction phase was conservatively assumed to be January 1, 2014. The emissions from demolition were added to the emission from all other construction phases to determine total Project construction emissions from the Coliseum District. CalEEMod™ runs are included as **Appendix 4.2A**. To estimate average daily construction emissions, total construction emissions were calculated for the duration of the total construction period (assumed to be a 15-year period from 2014 through 2029), and then averaged over the total number of construction work days. Daily construction-related criteria pollutant emissions resulting from construction at the Coliseum District are presented in **Table 4.2-5.**

As described above, both demolition and construction (including site preparation, grading, building construction, paving, and architectural coating) phases were assumed to start at the same time. In reality, demolition and future construction at the Coliseum District will be built out in incremental stages. The emissions estimates presented in this analysis result in higher emissions of criteria air pollutants and air toxics for the first few years of construction by assuming that multiple construction phases overlap and that the construction phases with the most extensive activity (such as demolition and mass grading) would occur over the entire Coliseum District during the first couple of years. This approach does not likely have a substantial bearing on the daily criteria air pollutant emissions (which are averaged over the entire 15-year construction duration), but will provide a conservative (i.e., worst-case) analysis for human health impacts associated with construction, as further discussed below.

Table 4.2-5: Criteria Air Pollutant Emissions – Coliseum District Construction

Pollutant	Total Emissions (tons/project)	Average Daily Emissions (pounds/day)	Construction Threshold (pounds/day)	Above Threshold?
Demolition, on-site Crushing and all other Construction phases				
ROG	174	88	54	**Yes**
NOx	358	181	54	**Yes**
PM_{10} (exhaust)	7.2	3.6	82	No
$PM_{2.5}$ (exhaust)	6.6	3.3	54	No
Demolition and Construction – no on-site Crushing				
ROG	174	88	54	**Yes**
NOx	358	180	54	**Yes**
PM_{10} (exhaust)	7.1	3.6	82	No
$PM_{2.5}$ (exhaust)	6.6	3.3	54	No

Abbreviations:
CalEEMod™ = California Emissions Estimator Model
CEQA = California Environmental Quality Act
NOx – nitrogen oxides
PM = particulate matter
ROG = reactive organic gases
Sources:
CalEEModTM version 2013.2.2. Available online at: www.CalEEMod.com
City of Oakland. 2013. CEQA Thresholds of Significance Guidelines. October.

Standard Conditions of Approval

Each new development at the Coliseum District will be required to incorporate "Basic" and "Enhanced" emission reduction measures as described in SCA Air-1. SCA Air-1: Construction-Related Air Pollution Controls (Dust and Equipment Emissions) implements the BAAQMD Basic Construction Mitigation Measures and Additional Construction Mitigation Measures. Equipment emissions mitigation measures from SCA Air-1, including but not limited to the following will be implemented:

- Idling time of diesel powered construction equipment shall be minimized to two minutes.
- The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOX reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.

- Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).

Emission reductions resulting from implementation of the other remaining elements of SCA Air-1 were conservatively not accounted for in the emissions estimate, as they are not readily quantifiable. However, these additional requirements will be implemented during Coliseum District construction and will serve to further reduce emissions. The emissions estimate also incorporates compliance with the ARB regulations regarding the use of off-road equipment.[74]

This conservative estimate of emissions associated with construction at the Coliseum District shows a significant impact. With implementation of the emission reductions itemized in SCA Air-1, it cannot be demonstrated that ROG and NOx emissions would be reduced to 54 pounds per day or less.

Mitigation Measures

Mitigation Measure Air 6A-1 (see discussion of construction-period toxic air emissions, below) requires implementation of measures in addition to the City's SCA to further reduce toxic air contaminant emissions from construction activities at the Coliseum District beyond the 45% reduction in particulate matter as required in SCA A. These additional emission reduction strategies include, but are not limited to requiring on-site construction equipment to include emission reduction technologies such as low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or add-on devices such as particulate filters. Although such strategies are generally designed to reduce emissions of DPM and PM2.5, they would also result in reductions in ROG and NOx mass emissions associated with Project construction. However, even with these additional measures, it cannot be certain that emission of ROG and NOx would be reduced to below threshold levels.

Significance after Mitigation

This impact is conservatively deemed to be **significant and unavoidable**.

Plan Buildout

Impact Air-5B: In addition to the Coliseum District emissions, construction activities pursuant to Plan Buildout will generate additional regional ozone precursor emissions and regional particulate matter emissions from construction equipment exhaust. For most individual development projects, construction emissions will be effectively reduced to a level of less than significant with implementation of required City of Oakland Standard Conditions of Approval. However, larger individual construction projects may generate emissions of criteria air pollutants that would exceed the City's thresholds of significance. (**SU**)

Quantification of construction-period emissions for Plan Buildout has not been conducted because of the high number of variables (even beyond those used for the assessment of emissions from construction at the Coliseum District) and the unknown nature of these variables. Without modeling each individual development project pursuant to Plan Buildout, it is not possible to assess whether construction emissions would exceed the City threshold. However, BAAQMD screening criteria indicates that if all of the following criteria are met, an individual construction project pursuant to Plan Buildout would be unlikely to result in a significant impact from criteria air pollutant and precursor emissions:

[74] In-Use Off-Road Diesel Vehicle Regulation. http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm. Accessed December 2, 2013.

- The project does not exceed the following sizes:

  114 single-family homes, 240 units in a mid-rise apartment, or 252 units in a high-rise apartment or condo;

  277,000 square feet of commercial retail or office space,

  259,000 square feet or 540 employees within a light- or heavy- industrial building of industrial park.

- All Basic construction mitigation measures would be included in the project design and implemented during construction pursuant to Supplemental SCA A; and
- Construction-related activities would not include any of the following: a) demolition; b) simultaneous occurrence of more than two construction phases; c) simultaneous construction of more than one land use type (not applicable to high density infill development); d) extensive site preparation for grading, cut/fill, or earth movement); or e) extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity.

However, those construction projects that cannot meet these criteria may result in construction-period emissions exceeding City threshold levels for individual project-level effects.

Mitigation Measures

No additional measures are available

Resulting Level of Significance

Large construction projects are likely to occur pursuant to Buildout of the Specific Plan, and implementation of SCAs may not be fully capable of reducing criteria pollutants during construction. In particular, it cannot reliably be assumed that ROG emissions from application of architectural coatings would be reduced to 54 pounds per day or less. Therefore, this impact is conservatively considered to be **significant and unavoidable**.

Construction Period Toxic Air Contaminant (TAC) Emissions

Coliseum District

Impact Air-6A: New sources of TAC emissions resulting from construction activity at the Coliseum District would result in an increase in cancer risk level for the maximum exposed individual of greater than 10 in one million. (**LTS with MM**)

Construction activities at the Coliseum District would result in DPM and $PM_{2.5}$ emissions due to exhaust emissions from equipment such as loaders, backhoes and cranes, as well as haul truck and vendor trips. These emissions could result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors (both new and existing residences). These elevated concentrations could lead to an increase in the risk of cancer or other health impacts. Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations.

Construction-related emissions of DPM were quantified and analyzed to assess the impact on health risk to nearby receptors. For this analysis, all off-road construction equipment was assumed to be diesel

powered. In addition, only DPM and $PM_{2.5}$ emissions were evaluated because risk associated with other TACs, such as TACs from gasoline vehicles, are minimal by comparison.[75]

Estimated Air Concentrations

The ambient air DPM and $PM_{2.5}$ concentrations in the vicinity of the Coliseum District were estimated using dispersion modeling techniques. AERMOD version 12345 (the USEPA and BAAQMD-recommended air dispersion model) was used to estimate ambient air concentrations on-site and off-site.[76,77,78] Dispersion factors (i.e., concentration per unit emission rate) were estimated using AERMOD in conjunction with information about the site, the locations of the emission sources, nearby land uses, representative meteorological data, and receptors.

Calculation of chemical concentrations for use in exposure analysis requires the selection of appropriate concentration averaging times. The annual average DPM concentration over the span of the total 15-year Coliseum District[79] construction activity was calculated for use in estimating cancer risk and chronic non-cancer hazard index (HI). Maximum short-term concentrations (one-hour averages) were not estimated because an acute toxicity criterion for DPM has not been developed by the Cal/EPA (as indicated in Table 2-5-1 of BAAQMD Regulation 2 Rule 5 where no acute REL is listed). Maximum annual $PM_{2.5}$ concentration over the span of the Coliseum District construction activity was also calculated.

Emissions from on-road and off-road diesel powered vehicles were modeled. Vehicles used for worker trips were assumed to be primarily gasoline powered and were not included in the risk analysis due to the minimal impact from gasoline vehicles. On-road emissions from on-road vehicle trips within one mile of the Project boundary were included in the emissions calculation. These emissions were distributed evenly among the on-site volume sources for air dispersion coefficient modeling purposes. A detailed description of the model assumptions, inputs, and options is included as **Appendix 4.2B**.

Maximum Exposed Off-Site Sensitive Receptors

Based upon the detailed meteorological and emissions modeling conducted, and the conservative assumptions included in the analysis, the area within which the modeled cancer risks associated with construction-period TAC emissions could exceed threshold levels was determined (see **Figure 4.2-4**).

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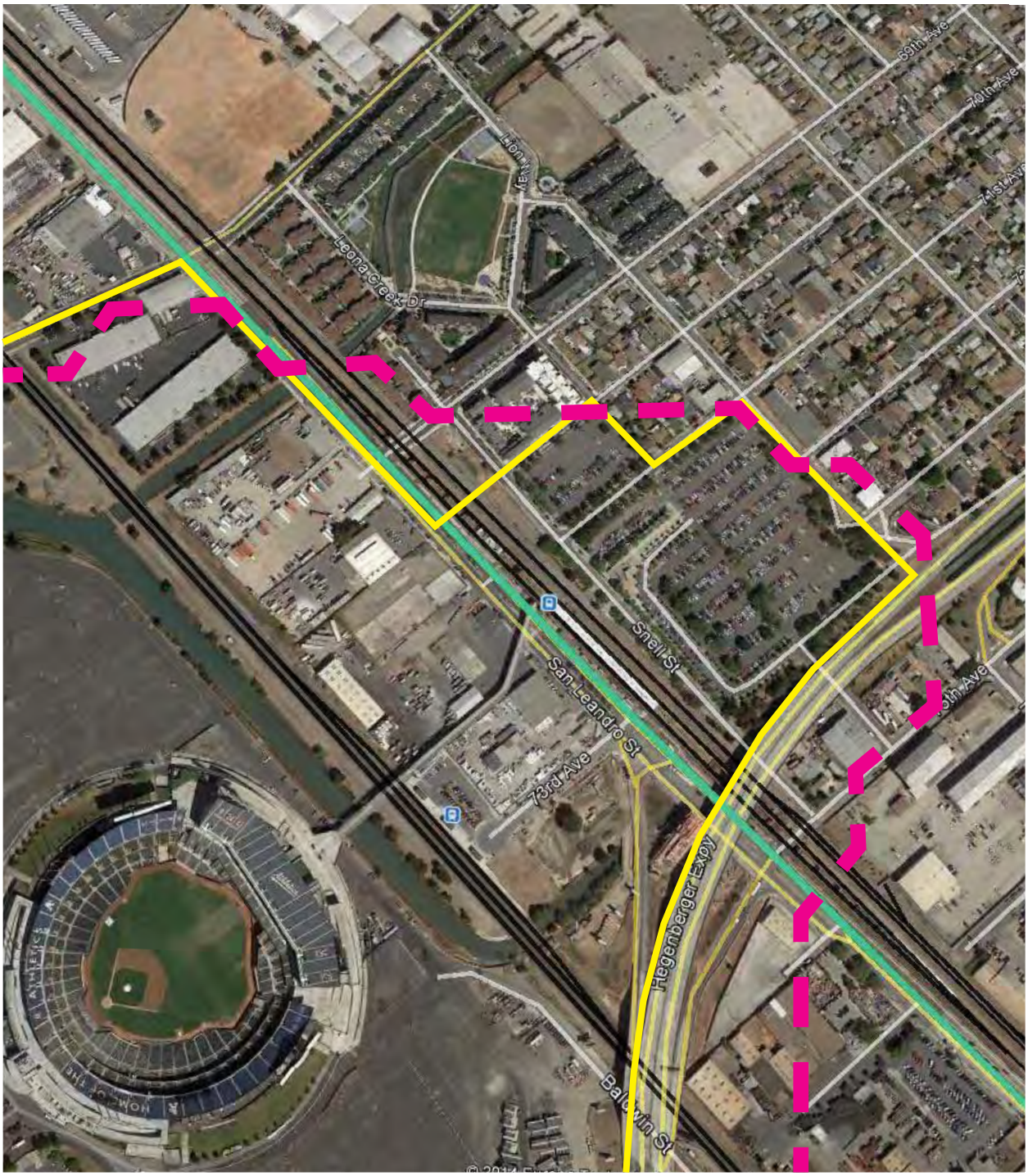
[75] BAAQMD. 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards. Tables 14 and 15 provide toxicity weighted factors for gasoline exhaust and evaporative running total organic gas (TOG) emissions. The unit cancer risk weighted factor for gasoline TOG exhaust is 1.81E-6 $(\mu g/m^3)^{-1}$, and that for the gasoline TOG evaporative emission is 1.07E-07 $(\mu g/m^3)^{-1}$. In comparison, the unit cancer risk weighted factor for DPM is 3.0E-4 $(\mu g/m^3)^{-1}$. Therefore even though the TOG emissions from gasoline vehicles are comparable with those from diesel off-road equipment and on road trucks, the resulting risks from gasoline vehicles would be less than one percent of risks from diesel equipment and vehicles.

[76] USEPA. 2004. User's Guide for the AMS/EPA Regulatory Model - AERMOD. Office of Air Quality Planning and Standards. Emissions Monitoring and Analysis Division. Research Triangle Park, North Carolina. EPA-454/B-03-001. September.

[77] USEPA. 2012. Addendum to User's Guide for the AMS/EPA Regulatory Model - AERMOD. Office of Air Quality Planning and Standards. Air Quality Assessment Division. Research Triangle Park, North Carolina. December.

[78] BAAQMD. Recommended Methods for Screening and Modeling Local Risks and Hazards. May 2011. http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20Modeling%20Approach.ashx. Accessed December 2013.

[79] Because threshold is not established for the Plan-level construction in the City of Oakland CEQA Significance Thresholds Guidelines, emissions associated with Plan-level construction were not quantified.



Coliseum Area Specific Plan Boundary

Approximate Boundary of Construction and Demolition Related Increased Cancer Risk Greater Than 10 per Million - Prior to Mitigation

Figure 4.2-4
Construction Related Increased Cancer Risk

Source: ENVIRON

As indicated, health risks exceeding threshold levels associated with construction activity would occur at points located off-site of the Coliseum District, primarily to the east and north. Sensitive receptors located at Lion's Creek Crossings (specifically at sites nearest to Snell Street at 69th Avenue), along 70th and 71st Avenues nearest to the BART parking lot, and along Hawley Street between 71st and 73rd Avenues, would be exposed to construction emissions resulting in increased cancer risks of between 10 and 12 in one million, compared to the threshold level of 10 in one million.

Maximum Exposed On-Site Sensitive Receptors

The Coliseum District's development program includes new residential land uses. Because the construction schedule and phasing information has not yet been determined, the impact on on-site residents from construction activities was evaluated under various scenarios whereby construction within a certain distance from new on-site residents will be completed before the residents move in. The details of this modeling of scenarios are also discussed in Appendix 4.2B.

Table 4.2-6 shows the human health impact on the on-site and off-site maximum exposed individual sensitive receptors (MEISR). In each of these this cases, the MEISRs are residential receptors.

Table 4.2-6 Construction Period Health Impacts

Receptor	Buffer[1]	Cancer risk per million [1]	Chronic Health Index	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Off-site MEISR [2]	Snell Street at 69th Avenue	11.8 / 10.7	0.008	0.094
	71st Avenues nearest to the BART parking lot	11.5 / 10.5	less than 0.01	less than 0.1
	Hawley Street between 71st and 73rd Avenues	11.7 / 10.7	less than 0.01	less than 0.1
	Threshold	10	1	0.3
	Greater than Threshold?	**Yes**	No	No
On-site MEISR [3]	50 meter distance	14.6 / 12.7	0.01	0.12
	100 meter distance	10.2 / 8.8	0.007	0.082
	200 meter distance	6.7	0.005	0.055
	Threshold	10	1	0.3
	Greater than Threshold?	**Yes** (except with 200 meter separation)	No	No

Footnote:
1. Risks provided indicated as: with on-site crushing of concrete and asphalt/without crushing, but off-site hauling.
2. For the off-site MEISRs, construction across the entire project site is assumed.
3. Buffer for on-site MEISR indicates the minimum distance in which construction activities occur from residences.

Abbreviations:
MEISR = Maximally Exposed Individual Sensitive Receptor
HI = Hazard Index
$PM_{2.5}$ = Fine Particulate Matter Less than 2.5 Micrometer in Diameter
µg = microgram
m^3 = cubic meter

Sources:
CalEEMod version 2013.2.2. Available online at: www.CalEEMod.com
City of Oakland. 2013. CEQA Thresholds of Significance Guidelines. October.

Standard Conditions of Approval

Implementation of SCA Air-1 would require construction-related best management practices (e.g., reduced diesel engine idling time, 45% reductions in PM emissions, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, etc.), which would substantially reduce construction-related emissions. However, because the Coliseum (and potentially the Arena) are such large structures, the emissions associated with hauling their demolition debris (or crushing it on-site) would result in an increase in cancer risk level to the maximum exposed individual that is greater than the threshold of 10 in one million.

Mitigation Measures

To further reduce construction period toxic air contaminant emissions, the following mitigation measure is recommended:

MM Air 6A-1: Reduced Construction Emissions. Further reduce toxic air contaminant emissions from construction activities at the Coliseum District (especially DPM and PM2.5) to ensure a resulting cancer risk level of less than 10 in a million. Additional emission reduction strategies to achieve this health risk standard may include, but are not limited to requiring on-site construction equipment (including concrete and asphalt crushers and/or haul trucks) to include emission reduction technologies such as low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or add-on devices such as particulate filters that are capable of further reducing toxic air contaminants (especially DPM and $PM_{2.5}$) beyond the 45% reduction as required in SCA A, such that construction emissions result in cancer risks of less than 10 in a million for off-site sensitive receptors.

MM Air 6A-2: Construction Emission Exposure. Further reduce toxic air contaminant exposure risk to on-site sensitive receptors to ensure a resulting cancer risk level of less than 10 in a million. Additional risk reduction strategies to achieve this standard may include, but are not limited to successful combinations of the following:

a) Require that all demolition activity and any on-site crushing operation (if conducted) be completed prior to the construction of new housing units on the Coliseum District within 200 meters of the demolition or construction activity.

b) Install MERV-13 filters at any new on-site residences at the Coliseum District that will be exposed to subsequent on-site construction activity within 100 meters.

Significance after Mitigation

With successful implementation of these measures, health risks associated with construction-period toxic air contaminants at the Coliseum District can be reduced to a **less than significant** level.

Plan Buildout

Impact Air-6B: In addition to the Coliseum District emissions, construction of other individual development projects pursuant to Plan Buildout will generate construction-related toxic air contaminant (TAC) emissions from fuel-combusting construction equipment and mobile sources that could exceed thresholds for cancer risk, chronic health index, acute health index or annual average PM2.5 concentration levels. Other than the unique emissions associated with crushing or off-hauling of debris associated with demolition of the existing Coliseum (discussed above and requiring additional mitigation to achieve less than significant effects), the construction-related TAC emissions from other Plan Buildout construction will be reduced to a less than significant level with implementation of required City of Oakland Standard Conditions of Approval (**LTS with SCA**).

Construction activities at individual development sites pursuant to Plan Buildout may generate construction-related toxic air contaminant (TAC) emissions from fuel-combusting construction equipment and mobile sources. Project construction activities would produce DPM and PM2.5 emissions due to exhaust emissions from equipment such as loaders, backhoes, and cranes, as well as haul truck

trips. These emissions could result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors (both new and existing residences).

Sensitive receptors in proximity to these emissions (generally within 200 meters) could be subject to increased cancer risk, chronic health problems and acute health risk. The potential health risk associated with each construction site is dependent upon a number of factors including ambient concentrations, hourly concentrations based in intake factors, cancer potency factors, and chronic and acute reference exposure levels. Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations.

Current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. This results in difficulties with producing accurate estimates of increased health risk. The specificity of detail necessary to conduct a health risk assessment is not available at the Plan stage.

Standard Conditions of Approval

Notwithstanding this lack of detail, SCA A would implement construction-related Best Management Practices to substantially reduce the more typical construction-related impacts associated with Plan Buildout to a **less-than-significant level**.

Operational Emissions of Criteria Pollutants

Coliseum District

Impact Air-7A: New development at the Coliseum District would result in operational average daily emissions of more than 54 pounds per day of ROG, NOX, or $PM_{2.5}$ and 82 pounds per day of PM_{10}; and would result in maximum annual emissions of 10 tons per year of ROG, NOX, of $PM_{2.5}$ and 15 tons per year of PM_{10}. **(SU**)

New development at the Coliseum District would result in an increase in criteria air pollutant and precursor emissions, including ROG, NOX, PM_{10} and $PM_{2.5}$ from a variety of emissions sources, including on-site area sources (e.g., natural gas combustion for space and water heating, landscape maintenance, use of consumer products such as hairsprays, deodorants, cleaning products, etc.), surface coatings, and mobile on-road sources.

CalEEMod™ 2013.2.2 was used to evaluate the above categories of criteria pollutant emissions for the following scenarios:

- Existing criteria pollutant emissions from the Coliseum District area ("Existing No Project", or "2013 Baseline"),
- Future 2035 criteria pollutant emissions from the Coliseum District if the Project were not developed (i.e., future no Project, or 2035 Baseline), and
- Future 2035 criteria pollutant emissions from the Coliseum District (i.e., future plus Project, or 2035 plus Project).

Mobile on-road emissions are direct emissions from mobile sources including automobiles, trucks, motorcycles, and buses. Project specific vehicle trip rates related to daily operations were provided by the Project's traffic consultants. [80] Project specific trip generation rates were then applied to existing and future land uses to determine total daily trips. In addition, the total Project- specific trip reduction rates due to internal capture and mode shift was applied to all land use types for both existing and future scenarios. This assumption conservatively overestimates the incremental change in emissions between the Project scenario and the Baseline scenarios because it overestimates the trip rate reduction for the baseline scenarios and results in lower baseline trip rates. Trip generation related to each sports venue for the existing and future year scenarios were also provided by the traffic consultants. CalEEMod™ default trip lengths were assumed for all scenarios.[81]

Area source emissions are direct emissions from sources that include natural gas combustion for heating, cooking, fireplaces or boilers, as well as emissions from landscape maintenance equipment and consumer products use. It was assumed that there would be no wood burning fireplaces in Project residential units and that 69% of the residential units would have natural gas fireplaces. Otherwise CalEEMod™ default emission factors and assumptions were used for area sources.

California building code requires back-up diesel generators for all buildings in excess of 70 feet in height for elevator safety. Buildings in excess of this height could be accommodated on most portions of the Coliseum District. In addition, due to the back-up electricity requirement for sports venues and for R&D uses, emergency generators are expected. Consequently, screen-level risks associated with emergency generators were evaluated. Based on Figure 4.2-1, the existing emergency generators within the Coliseum District for Oakland Coliseum Joint Venture (source ID: 14349, a total of three engines), and for Verizon Wireless (Source ID: 16295, a total of one engine) will be replaced by much cleaner Tier 4 engines (pursuant to SCA AQ-2: Exposure to Air Pollution (Toxic Air Contaminants). The USEPA estimates that by implementing the federal Tier 4 standards, NOx and PM emissions will be reduced by more than 90 percent.[82] Therefore even though it is likely that more than four emergency generators will likely be needed for future operations, it is expected that the net increase in NOx and DPM emissions will be negative. Consequently, mass emissions from emergency generators were not included in this analysis.

Table 4.2-7 shows estimated average daily and annual maximum criteria emissions under current conditions (2013 Baseline), as well as the emissions projected from current land uses at the Coliseum District as they would occur in 2035 (2035 Baseline). These projected 2035 baseline emissions are based on a continuation of existing land uses, vehicle trips, and VMTs. Over time, regulatory changes at the state level are projected to go into effect, resulting in improvements primarily to vehicle exhaust emissions.

[80] Data provided electronically from Fehr and Peers on October 13, 2013.

[81] All trips were assumed to be primary trips.

[82] USEPA. Regulatory Announcement: Clean Air Nonroad Diesel Rule. May 2004. http://www.epa.gov/otaq/documents/nonroad-diesel/420f04032.pdf Accessed January 2014.

Table 4.2-7 Operational Criteria Pollutant Emissions – Change in Coliseum District Baseline

Emissions (tons/year)			
Pollutant	**2013 Baseline**	**2035 Baseline**	**Baseline Increment**
ROG	26	21	-5
NOx	30	11	-19
PM_{10} Total	9	9	0
$PM_{2.5}$ Total	3	3	0
Emissions (pounds/day)			
Pollutant	**2013 Baseline**	**2035 Baseline**	**Baseline Increment**
ROG	144	115	-29
NOx	165	62	-103
PM_{10} Total	52	50	-2
$PM_{2.5}$ Total	17	15	-2

Abbreviations:
CalEEMod™ = California Emissions Estimator Model
CEQA = California Environmental Quality Act
NOx – nitrogen oxides
PM = particulate matter
ROG = reactive organic gases

Sources:
CalEEModTM version 2013.2.2. Available online at: www.CalEEMod.com
City of Oakland. 2013. CEQA Thresholds of Significance Guidelines. October.

Future development at the Coliseum District involves removal of existing emission sources. The BAAQMD CEQA Guidelines recommend subtracting the existing emissions levels from the emissions levels estimated for the new proposed land use.[83] **Table 4.2-8** shows average daily and maximum annual projected 2035 criteria air pollutant emissions with the Coliseum District project, compared with 2013 Baseline emissions levels, and the incremental increase of emissions. The table shows that for each criteria pollutant, in the year 2035, the development will emit more pollutants than the City's threshold.

[83] Op Cit. BAAQMD 2012 p. 4-1.

Table 4.2-8 Coliseum District Operational Criteria Pollutant Emissions

Emissions (tons/year)					
Pollutant	**Existing (2013) Baseline**	**Future (2035) Coliseum District**	**Project Increment**	**Threshold**	**Greater than Threshold?**
ROG	26	99	73	10	**YES**
NOx	30	51	21	10	**YES**
PM10 Total	9	44	35	15	**YES**
PM2.5 Total	3	13	10	10	**YES**
Emissions (pounds/day)					
Pollutant	**2013 Baseline**	**2035 Coliseum District**	**Project Increment**	**Threshold**	**Greater than Threshold?**
ROG	144	544	400	54	**YES**
NOx	165	281	116	54	**YES**
PM10 Total	52	243	191	82	**YES**
PM2.5 Total	17	73	57	54	**YES**

Abbreviations:
CalEEMod = California Emissions Estimator Model
CEQA = California Environmental Quality Act
NOx – nitrogen oxides
PM = particulate matter
ROG = reactive organic gases

Sources:
CalEEMod version 2013.2.2. Available online at: www.CalEEMod.com
City of Oakland. 2013. CEQA Thresholds of Significance Guidelines. October.

Standard Conditions of Approval

The majority of criteria pollutants associated with Project operations will be generated by mobile on-road sources including automobiles. The Project's trip generation estimate used in this analysis accounts for the mix of uses provided in the development under the Specific Plan, the urban setting, and transit service provided in the area. As a result, the amount of external traffic that the Coliseum District would generate is reduced as compared to standard ITE-based trip generation estimates to account for internal trips and external non-auto trips. [84] In addition, the City of Oakland's SCA Trans-1 (see Transportation Chapter 4.13) requires that a Transportation Demand Management (TDM) program be developed and

[84] Data provided electronically from Fehr and Peers on December 4, 2013

implemented to further reduce use of single-occupant vehicles and to increase the use of rideshare, transit, bicycle and walk modes for trips to and from, as well as within the Plan Area (see Section 4.13, Transportation and Circulation). However, the trip generation assumptions used in this analysis do not account for the effectiveness of the TDM program and similar policies in order to present a more conservative analysis.

Given the magnitude of the difference between the Coliseum District's projected emission rates and the thresholds of significance for criteria pollutants, it is not expected that implementation of SCA Trans-1 (TDM Program) would fully reduce the impact to a less-than-significant level. Consequently, development of the Coliseum District would result in significant environmental effects on air quality and contribute substantially to an existing air quality violation (ozone precursors and particulate matter), even with implementation of SCA Trans-1. Therefore, this impact would remain **significant and unavoidable** for emissions of ROG, NOx, and PM10.

Mitigation Measures

None available

Plan Buildout

Impact Air-7B: In addition to the Coliseum District's criteria pollutant emissions, new development pursuant to Plan Buildout would result in additional operational average daily emissions of more than 54 pounds per day of ROG, NOX, or $PM_{2.5}$ and 82 pounds per day of PM_{10}; and would result in maximum annual emissions of 10 tons per year of ROG, NOX, of $PM_{2.5}$ and 15 tons per year of PM_{10}. **(SU**)

The Specific Plan represents an overall development strategy for buildout of the Project Area (in addition to the Coliseum District) that is comprised of numerous individual projects being developed over an extended period of time, is not one individual project. Therefore, comparison of Plan Buildout to project-level thresholds is a highly conservative approach. However, in aggregate, buildout of the entire development plan as envisioned under the Plan Buildout would result in the total operational emissions of criteria pollutants that would greatly exceed project-level thresholds.

Each individual development project as envisioned under the Specific Plan will incrementally contribute to this overall total. Without modeling each individual development project pursuant to the Specific Plan, it is not possible to assess whether any one individual project pursuant to the Plan would exceed the City threshold on its own. However, based on BAAQMD CEQA Guidelines, an individual subsequent project pursuant to the Specific Plan would be unlikely to result in a significant impact due to the generation of criteria air pollutants and ozone precursor emissions if the subsequent project does not exceed the following sizes:

- 325 single-family homes, 494 units in a mid-rise apartment, or 510 units in a high-rise apartment or condo;
- between 42,000 and 100,000 square feet of retail commercial space,
- 346,000 square feet of general office space, or
- 540,000 square feet or 1,250 employees within a light-industrial building.

It is likely that certain individual projects pursuant to the Specific Plan may exceed these screening level size limitations. The impact of individual development projects pursuant to this Plan, as well as the

aggregate of all development assumed pursuant to the Specific Plan is conservatively considered to generate criteria air pollutants and ozone precursor emissions at a level that would be significant.

Standard Conditions of Approval

The City's Standard Condition of Approval **SCA 24**: **Parking and Traffic Management Plan** applies to all subsequent development projects involving 50 or more new residential units or 50,000 square feet or more of new non-residential space. This condition requires individual development projects to prepare and implement a Transportation Demand Management Plan capable of reducing single-occupant vehicle use at the site through a variety of strategies including enhancement and promotion of transit and other alternative modes of travel. Implementation of this Standard Condition of Approval would reduce criteria air pollutants and ozone precursor emissions from subsequent development projects, but may or may not be fully effective in reducing emissions to below threshold levels.

Mitigation Measures

None available

Resulting Level of Significance

Individual development projects, as well as the aggregate of all development assumed pursuant to the Plan Buildout, is conservatively considered to generate criteria air pollutants and ozone precursor emissions at a level that would be **significant and unavoidable**.

Carbon Monoxide Emissions

Coliseum District and Plan Buildout

Impact Air-8: Development at the Coliseum District and under Plan Buildout would not contribute to carbon monoxide (CO) concentrations exceeding the California Ambient Air Quality Standards (CAAQS) of nine parts per million (ppm) averaged over eight hours and 20 ppm for one hour. (**LTS**)

Pursuant to City Thresholds and BAAQMD CEQA Guidelines, localized CO concentrations should be estimated for projects in which, a) project-generated traffic would conflict with an applicable congestion management program established by the County Congestion Management Agency, b) project-generated traffic would increase traffic volumes at affected intersections to more than 44,000 vehicles per hour, or c) project-generated traffic would increase traffic volumes to more than 24,000 vehicles per hour at locations where vertical and/or horizontal mixing is substantially limited, such as tunnels, parking garages, bridge underpasses, natural or urban street canyons, and below-grade roadways. In Oakland, only the MacArthur Maze portion of Interstate 580, which is approximately 7 miles northwest of the Coliseum District, currently exceeds the 44,000 vehicles per hour screening criteria.

The carbon monoxide emission threshold is recommended for evaluation of individual projects, and there is no Plan-level threshold for CO concentrations. This analysis was conducted for the full Plan Buildout (including the Coliseum District) as if it were a project. Future cumulative traffic volumes (i.e., background plus Plan Buildout) during the peak-hour at affected intersections were compared to the significance threshold of more than 44,000 vehicles per hour. Peak AM and PM vehicle counts from the

traffic analysis included in Chapter 4.10 of this EIR were used for this analysis.[85] The projected future maximum hourly traffic volumes at all intersections are significantly less than 44,000 vehicles.[86] A similar comparison was done for freeway traffic on freeway segments near the Project area. The maximum future hourly vehicle count for one direction of traffic over all segments of each nearby freeway was added to the maximum hourly traffic count for any segment in the other direction of that freeway to obtain a conservative hourly maximum for both directions of travel. The maximum traffic levels were found to be less than 18,000 vehicles per hour, well below the threshold of 44,000 vehicles per hour.

The traffic volume analysis is exclusive of special events at each of the three venues contemplated at Plan Buildout. The impact of special events on maximum future traffic volumes was also evaluated. Traffic volumes generated by each potential event type at each venue were provided by the traffic analysts.[87] Traffic generated by an NFL football game exceeds the combined traffic generated by any two events at the other venues. In addition, when a football game is scheduled, events would not be scheduled at the other venues. Consequently, the worst case scenario would occur if peak traffic associated with a football game was assumed to be directed to the freeway segment with the maximum hourly traffic volume. An NFL football game would generate 37,600 total trips (inbound and outbound). Conservatively assuming half of those trips occur in a one hour period before the game, and half occur in a one hour period after the game, the hourly vehicle count on the maximally impacted segment would be less than 36,800 vehicles per hour (37,600/2 plus the maximum peak hour freeway traffic of 18,000 vehicles per hour). This is less than the threshold of 44,000 vehicles per hour.

In addition, the two locations at which surface streets pass over the 880 freeway (Hegenberger Road and 66th Avenue) were compared to the threshold. The maximum traffic on the segments of 66th Avenue and Hegenberger Road that cross Interstate 880 under the cumulative plus Plan Buildout scenario is 1,940 vehicles per hour, and 4,530 vehicles per hour, respectively. Conservatively adding these traffic volumes to the worst case estimates for freeway traffic (18,000 vehicles per hour) and the worst case estimate for a special event (an additional approximately 18,800 vehicles per hour) results in a maximum of 41,330 vehicles per hour, less than the threshold of 44,000 vehicles per hour.

Traffic volumes in areas with limited horizontal or vertical mixing were also evaluated. At the Coliseum District and pursuant to Plan Buildout, several parking garages are planned and which may contain areas with limited air mixing. The largest individual parking garage at the Coliseum District may contain as many as 2,752 parking spaces.[88] The hourly traffic volumes within this garage would not exceed 24,000 vehicles per hour unless each space has a turnover rate of more than 8.7 cars per hour, which is highly unlikely.

Plan Buildout would not result in an exceedance of the hourly traffic volume thresholds. Although this threshold does not apply to Plan level projects, the above analysis also demonstrates that development of Plan Buildout would not exceed the project-specific hourly traffic volume thresholds. The impact would be less than significant.

Mitigation Measures

[85] Data provided by Fehr and Peers. November 25, 2013.

[86] The maximum vehicle count was 7,590 vehicles per hour, for the PM peak hour in the future scenario including existing land uses and plan buildout.

[87] Data provided by Fehr and Peers via e-mail communication. December 2, 2013

[88] Parking garage data were provided by Lamphier –Gregory via e-mail communication. October 31, 2013.

None required

New Sources of Operational Toxic Air Contaminants

Coliseum District and Plan Buildout

Impact Air-9: New sources of TACs resulting from operations pursuant to Buildout of the Plan would not result in an increase in cancer risk level greater than 10 in one million, a non-cancer risk (chronic or acute) hazard index greater than 1.0, or an increase of annual average $PM_{2.5}$ concentration of greater than 0.3 micrograms per cubic meter with implementation of City of Oakland's standard conditions of approval. (**LTS with SCA**)

Emergency Generator Emissions

Proposed development at the Coliseum District includes a variety of land use types including sports venues, residential, office, R&D, and retail uses. While there are no specific stationary sources of air pollution proposed, as a practical matter, California building code requires back-up diesel generators for all buildings in excess of 70 feet in height for elevator safety. Buildings in excess of this height would be accommodated on most portions of the Coliseum District. In addition, due to the back-up electricity requirement for sports venues, as well as for all future R&D uses under Plan Buildout, emergency generators are expected. Operators of back-up diesel generators would be required to obtain a permit and an Authority to Construct from the BAAQMD, who would evaluate emissions based on size and would require Best Available Control Technology, if warranted. Per its Policy and Procedure Manual, the BAAQMD would deny an Authority to Construct or a Permit to Operate for any new or modified source of TACs that exceeds a cancer risk of 10 in one million or a chronic or acute hazard index of 1.0 at an adjacent receptor location.

Standard Conditions of Approval

For this analysis, screen-level risks associated with Project emergency generators were evaluated. Four existing emergency generators are located within the Coliseum District (3 for Oakland Coliseum Joint Venture - Source ID: 14349, and 1 for Verizon Wireless - Source ID: 16295). Pursuant to SCA AQ-2: Exposure to Air Pollution, these existing generators will be replaced by much cleaner, Tier 4 engines. The USEPA estimates that by implementing the federal Tier 4 standards, NOx and PM emissions will be reduced by more than 90 percent.[89] Although it is likely that more than four emergency generators will likely be needed for future operations, it is unlikely that more than forty emergency generators will be installed at the Coliseum District.[90] Consequently, the net increase in emissions and health impact to existing off-site receptors will likely be negative, indicating a net reduction in DPM emissions and health risks. If the number of new generators and their horsepower are equivalent to ten times of the current capacity at the Coliseum District, additional analysis will be required to evaluate the risks from the new generators.

[89] USEPA, Regulatory Announcement. Clean Air Nonroad Diesel Rule. May 2004. http://www.epa.gov/otaq/documents/nonroad-diesel/420f04032.pdf. Accessed January 2014.

[90] An emergency generator is required at buildings exceeding 70 feet in height. There may be approximately 42 buildings (excluding sports venues) at the Coliseum District.

Roadway Emissions

Health impacts associated with TAC emissions from traffic generated by Plan Buildout on major roadways were evaluated as part of the analysis of incremental Project-related health risk. Three scenarios were evaluated, including:

- existing traffic without the Project ("2013 Baseline"),
- traffic from existing land uses within the Project area at 2035, plus other 2035 background traffic ("2035 Baseline"), and
- traffic from the Plan Buildout at 2035 ("2035 Project") plus other 2035 background traffic.

Emission factors from EMFAC2011 for year 2013 were used for the current year scenario, and emission factors for 2035 were used for the future year scenarios. Emissions from these roadways were evaluated in a manner consistent with the most recent methodologies proposed by BAAQMD.[91] Traffic volumes on highways and surface streets were provided by the project's traffic analysts.[92] Additional vehicle traffic due to special events at the sports venues was provided separately and was distributed amongst hours based on the distribution of start and end times of each game type.

CAL3QHCR (the USEPA's approved/preferred model for roadway modeling) was used to estimate air pollutant concentrations generated from traffic. CAL3QHCR incorporates hourly emission factors and traffic volumes with a full year of hourly meteorological data to estimate air concentrations for inert pollutants including particulate matter and other gaseous contaminants. The model can calculate concentrations from the free flow movement of traffic along a roadway and the queue of the traffic at a traffic signal.

The modeled receptor locations were the same as those used to model air concentrations associated with project construction activities, and shown in Figure 6 of Appendix 4.2B

The geometry of the roadway segments and links was determined by using an aerial photograph. According to the BAAQMD guidelines, only roadways with traffic volume greater than 10,000 vehicles per day within 1,000 feet from the Project boundary ("zone of influence") should be considered. These included sections of 66th Avenue, Hegenberger Road, San Leandro Street, and Interstate-880. Roadway segments modeled in the assessment are shown in Figure 2 of Appendix 4.2B. The height of the highway ramps and roadways above grade were estimated using street view in Google Earth. The width of the street segments was determined from an aerial photograph and the mixing zone was set as the road width plus three meters on each side to account for vehicular wake effects, in accordance with CAL3QHCR guidance.

To characterize the transport and dispersion of pollutants in the atmosphere, CAL3QHCR requires hourly meteorological data. The model was run with model-ready meteorological data from the Oakland Airport station, collected and provided by the BAAQMD. Modeling was carried out for a one-year period using meteorology data representative of year 1983 to identify the annual and maximum hourly concentrations. The model was run for surface roughness of 100 centimeters (cm) representative of an urban setting.

[91] BAAQMD. 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards. May. http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Risk%20Modeling%20Approach%20May%202012.ashx?la=en

[92] Data provided by Fehr and Peers via e-mail communication. November 25, 2013.

Table 4.2-9 shows the human health impact resulting from traffic generated by Plan Buildout on the maximum exposed on-site and off-site sensitive residential receptors (the MEISSR). As indicated in this table, the health risk for both on-site and off-site sensitive receptors is **less than significant**.

Table 4.2-9 Operational Health Impacts on On-site and Off-Site MEISR

Receptor	Scenario	Cancer risk (# in a million)	Chronic HI	Acute HI	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Off-site MEISR	2013 Baseline	23.9	0.031	0.014	0.68
	2035 Baseline	27.4	0.015	0.008	0.84
	2035 Project	27.7	0.015	0.008	0.85
	Project Increment	**3.9**	**-0.016**	**-0.006**	**0.2**
	Threshold	10	1	1	.03
	Exceed the Threshold?	**No**	**No**	**No**	**No**
On-site MEISR	2013 Baseline	25.5	0.031	0.023	0.54
	2035 Baseline	25.3	0.012	0.010	0.46
	2035 Project	27.6	0.013	0.011	0.52
	Project Increment)	2.1	-0.018	-0.012	-0.022
	Threshold	10	1	1	.03
	Exceed the Threshold?	**No**	**No**	**No**	**No**

Abbreviations:
MEISR = Maximally Exposed Individual Sensitive Receptor
HI = Hazard Index
PM2.5 = Fine Particulate Matter Less than 2.5 Micrometer in Diameter
µg = microgram
m^3 = cubic meter

Mitigation Measures

None required

Expose New Sensitive Receptors to Substantial Levels of Toxic Air Contaminants

Coliseum District

Impact Air-10A: New development at the Coliseum District would expose new sensitive receptors to substantial levels of toxic air contaminants (TACs) resulting in a cancer risk level greater than 100 in one million, a non-cancer risk (chronic or acute) hazard index greater than 10.0, or an increase of annual average $PM_{2.5}$ concentration of greater than 0.8 micrograms per cubic. However, implementation of City of Oakland Standard Conditions of Approval would be capable or reducing this impact to levels of less than significant. (**LTS with SCAs**)

CEQA requires the analysis of potential adverse effects of a project on the environment. Potential effects of the environment on a project are legally not required to be analyzed or mitigated under CEQA. However, this EIR nevertheless analyzes the following potential effects of the environment on the project (i.e. siting new sensitive receptors near existing TAC sources) in order to provide information to the public and decision-makers. Where a potential significant effect of the environment on the project is identified, City Standard Conditions of Approval and/or project-specific recommendations are identified to address these issues.

Thresholds used in this analysis consider the level of exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazard. For cancer risk, which is a concern with diesel particulate matter and other mobile-source TACs, the thresholds considers an increased risk of contracting cancer that is 10 in one million chances or greater to be significant for a single source, and exposure to annual $PM_{2.5}$ concentrations that exceed 0.3 micrograms per cubic meter (ug/m3) to be significant.

When siting new sensitive receptors, existing TAC sources located within 1,000 feet including, but not limited to stationary sources, freeways, major roadways (10,000 or greater vehicles per day), truck distribution centers, ports, and rail lines, should be considered. These existing sources include the following:

- Roadway Emissions: The health impacts from existing traffic on roadways in the vicinity of the Coliseum District include I-800, Hegenberger Road, 66th Avenue and San Leandro Boulevard.
- Railway Emissions: Railway activity within one mile of the Coliseum District includes Amtrak Capitol Corridor line trains and freight trains traveling on the tracks running parallel to San Leandro Street, as well as locomotive idling at the Amtrak Station. Emissions from locomotive activity were estimated and used to model resulting air pollutant concentrations.
- Distribution Centers: Distribution centers and warehouses in the vicinity of the project result in TAC emissions due to truck traffic at the distribution centers. The locations of distribution centers and warehouses in the vicinity of the Coliseum District were provided by the City of Oakland, and a trip rate of 2.59 truck trips per 1000 square feet of warehouse space was assumed, as recommended by a South Coast Air Quality Management District (SCAQMD) analysis conducted in support of CalEEModTM development. This trip rate and the square footage of each facility were used to calculate a total truck trip rate. This screening analysis also assumes that all distribution center trucks will travel on the surface streets next to the Coliseum District.
- Stationary Sources: To aid in calculating risks and hazards from other stationary sources within 1,000 feet, the BAAQMD has developed the Stationary Source and Risk Analysis Tool ("BAAQMD Risk Analysis Tool") for permitted sources within Alameda County. The BAAQMD Risk Analysis Tool was

used to identify potential stationary TAC sources within 1,000 feet of the Coliseum District, as shown in Figure 4.2-1. Included sources and their associated health impacts are presented in Table 4.2-9.

- Emergency Generators: Emissions from emergency generators (both on- and off-site) contribute to the cumulative TAC health risk impacts. A screening analysis was conducted to estimate the impact of emergency generators within the Project area.

The sum of risk from nearby stationary sources identified using the BAAQMD screening tool, plus screening risks from nearby distribution centers, plus risks from the locomotive activities, plus risks from roadways within one mile of the Coliseum District were calculated for the on-site maximally impacted sensitive receptor. Table **4.2-10** shows the results of this analysis for on-site receptors. As indicated in this table, the lifetime excess cancer risk for the maximum exposed sensitive receptor (at 147 in a million) exceeds the City threshold of 100 in a million.

Table 4.2-10: Cumulative Impacts on the On-site MEISR

Type	Source	Source ID	Lifetime Excess Cancer Risk (per million)	Chronic HI	$PM_{2.5}$ Concentration (ug/m3)
Stationary Sources	Elliott & Elliott Company	G8481	0.013	0.000004	0
	Coliseum 76	G8978	0.25	0.0004	0
	A B & I Foundry	62	1.83	0.05	0.79
	Arco Fac # 4494	G11939	1.65	0.002	0
	Oakland Alameda County Coliseum	G9015	0.026	0.00001	0
	Creative Wood Products	5565	0.12	0.07	0
	ECE Custom Body and Paint	17763	0.00	0.001	0
	International Gases & Cryogenics Inc	13568	0.00	0	0.08
	Western Colloid Materials	3651	0.010	0	0.06
		Total	**3.9**	**0.120**	**0.93**
Roadways	2035 Baseline Traffic		**27**	**0.012**	**0.48**
Locomotives	Amtrak		36	0.013	0.067
	Freight Trains		3.6	0.001	0.007
		Total	**40**	**0.015**	**0.22**
Warehouses	Diesel traffic		**37**	**0.014**	**0.07**
Emergency Generators	EG testing and maintenance		**39.9**	**0.015**	**0.41**
		Cumulative Total	**147**	**0.2**	**1.8**
		BAAQMD Cumulative Significance Threshold	**100**	**10**	**0.8**
		Above Threshold?	**Yes**	**No**	**Yes**

Standard Conditions of Approval

Future development of residential use throughout the Coliseum District will be required to implement all City of Oakland Standard Conditions of Approval. Pursuant to SCA Air-2, applicants for future qualifying development projects may either incorporate health risk reduction measures into the project at that project's initiation, or may conduct more detailed and site-specific health risk assessments using air quality dispersion modeling methodologies and screening thresholds recommended by the BAAQMD to demonstrate that, despite their location within the screening setback distances, modeled site-specific exposures would be less-than-significant. If detailed modeling does not demonstrate that exposure levels would be less-than-significant, then the project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:

- Installation of air filtration to reduce cancer risks and Particulate Matter (PM) exposure for residents, and other sensitive populations, in the project that are in close proximity to sources of air pollution. Air filter devices shall be rated MERV-13 or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.
- Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible.
- The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall not be located immediately adjacent to a loading dock or where trucks concentrate to deliver goods, if feasible.
- Sensitive receptors shall not be located on the ground floor, if feasible.
- Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (Pinus nigra var. maritima), Cypress (X Cupressocyparis leylandii), Hybrid popular (Populus deltoids X trichocarpa), and Redwood (Sequoia sempervirens).
- Within the project site, sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible.
- Within the project site, existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible.
- Within the project site, emissions from diesel trucks shall be reduced through implementing the following measures, if feasible:
  - Installing electrical hook-ups for diesel trucks at loading docks.
  - Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards.
  - Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels.
  - Prohibiting trucks from idling for more than two minutes.

- Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented.

SCA Air-2 would implement the recommendations of both the California Air Resources Board (CARB) and the BAAQMD by requiring qualifying projects to prepare an HRA or incorporate project design features that reduce potential health risk due to exposure to TACs. Such design features (ranging from site layout considerations, landscaping, and interior air filtration systems) can improve interior air quality for sensitive receptors such that attendant health risks of DPM exposure can be reduced to an acceptable level. Qualifying projects are those that involve sensitive land uses, are located within 1,000 feet of a TAC source, and exceed the health risk screening criteria after a screening analysis is conducted in accordance with the BAAQMD CEQA Guidelines.

Distance is an important but not necessarily conclusive factor examined in the HRA to determine whether building residents would be exposed to excessive levels of TACs (both for DPM-borne and gaseous TACs). Other factors that must be taken into account include building orientation, intervening development, and wind patterns of proposed new development. The potential health risk would be determined by taking all of these factors into account and would quantify the project-specific health risk. The project would be required by SCA Air-2 to implement feasible measures that would reduce the potential health risk.

Resulting Level of Significance

Compliance with SCA Air-2 would reduce the exposure of each new residential development site at the Coliseum District to DPM through the installation of air filtration systems (filters of MERV-13 or higher with 85 percent filtration efficiency) or other equivalent measures to reduce indoor DPM to acceptable levels. In order for the cumulative health impact to be below the threshold, the cancer risk at the on-site MEISR will have to be reduced by 39%, and PM2.5 concentration will have to be reduced by 58%. According to USEPA, the particle removal efficiency of MERV-13 or higher is between 85 to 90 percent. This level of particle removal efficiency is more than sufficient to reduce the cancer risk and PM2.5 concentration to be less than significance under normal building HVAC operation condition. Impacts related to DPM-borne TACs would be **less than significant** with implementation of SCA Air-2, which reduces the risk to acceptable levels.

Implementation of SCA Air-2 cannot with certainty reduce risks from TACs originating from gaseous sources. The site planning and filtration methods indicated in SCA Air-2 can capture and/or screen out airborne particulate matter (DPM and PM2.5), but these methods do not reduce risks from gaseous TACs. There are no known feasible technologies or site planning considerations that have been shown to reduce risks of gaseous TACs. However, the contribution of stationary source TAC emissions that include gaseous substances (primarily gasoline dispensing facilities but conservatively assumed to include all sources) is relatively low, at only 3.9 increased cancer risks per million. The other primary source of gaseous TAC emissions is roadway traffic, which contributes approximately 27 increased cancer risks per million. Combined, these roadway traffic and stationary sources of gaseous TACs amount to an increased cancer risk of approximately 31 in a million, substantially less than the cumulative threshold of 100 per million. With DPM and PM2.5 contributions to the health risks substantially reduced through implementation of SCA Air-2, it is unlikely that the remaining particulate emissions, combined with the gaseous sources, would result in exceeding the health risk significance thresholds, and health risk impacts would be less than significant.

Plan Buildout

Impact Air-10B: New development pursuant to Plan Buildout could expose additional new sensitive receptors to substantial levels of toxic air contaminants (TACs). However, implementation of City of Oakland Standard Conditions of Approval would be capable or reducing this impact to levels of less than significant. (**LTS with SCAs**)

The City utilizes methodology to evaluate and minimize community risk and hazard impacts through a plan-level approach that includes a health risk assessment based on emissions estimates and air dispersion modeling.[93,94] The majority of additional residential or sensitive receptors within the Plan Buildout area (i.e., those not included in the Coliseum District and discussed above) are located along the waterfront residential are near the San Leandro Bay shoreline within Sub-Area B.

Consistent with BAAQMD guidance, cumulative cancer risks and $PM_{2.5}$ concentrations from nearby roadways and railways on these additional residential receptors were. The combined risk from existing nearby roadways and other sources is approximately 30 in a million or lower, compared to a combined (cumulative) threshold of 100 in a million. Therefore, existing ambient air quality conditions would have a less than significant effect on these new sensitive receptors.

In the future, existing stationary sources within 1,000 feet of these new sensitive receptors are assumed to be removed or replaced by new Tier 4 engines during the Plan Buildout period.[95] In order to maintain the future potential cancer risk impacts at these new receptors to below the threshold of 100 in a million, the cancer risk contributed by future TAC sources (including Plan Buildout development) needs to be limited to less than 70 in a million (i.e., the threshold of 100 in a million, less the existing exposure of 30 in a million).[96] This risk minimization target for future conditions conservatively equates to an increase of as many as 6,250 truck trips per day from distribution centers on nearby roads (e.g., Edgewater Drive, or Oakport Street), or roughly 89 new Tier 4 emergency generators of 1,200 hp or less, or some combinations of the two.[97]

According to the land use assumptions for Plan Buildout, Sub-Area B may result in a net increase of as much as 2.14 million square feet of new science and technology and light industrial space. At a trip rate of 2.59 trucks per 1,000 sq. ft., Sub-Area B could potentially generate as many as 5,540 truck trips. Most of these truck trips would not utilize Edgewater or Oakport northbound, but instead would travel southbound toward Hegenberger. Therefore, it is highly unlikely that nearby roads adjacent to the waterfront residential area would receive as many as 6,250 truck trips per day and the potential for the area in the vicinity of the waterfront residential area to accommodate as many as 89 new emergency generators is remote. Therefore, existing and projected future exposure of new sensitive receptors

[93] Op Cit. BAAQMD 2012. Section 9.3.

[94] BAAQMD. Draft Guidelines (Version 3). Plan Approach for Reducing Toxic Air Contaminants (TACs) and Fine Particulate Matter (PM2.5). May 2012. http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/DraftPlanApproachV3_May%202012.ashx?la=en. Accessed January 2014.

[95] Nearby sources include the City of Oakland Environmental Services sources (Source Id: 18028, G6475, 16622, 11475, and 11431)

[96] The lifetime cancer risk threshold is the more restrictive, or controlling threshold. The PM 2.5 concentration threshold is more permissive of additional emissions than is the cancer risk threshold.

[97] Cancer risk impacts of Tier 4 emergency generators were calculated using the result in Table 4.2-10 that 51 Tier 4 engines result in a cancer risk of 39.9 in a million.

within the Plan Buildout area (those not included in the Coliseum District) would be **less than significant.**

Standard Conditions of Approval

In the unlikely event that truck traffic and/or the expansion of emergency generator use within Sub-Area B might exceed the risk minimization targets at the waterfront residential site in the future, and new residential uses would be required to implement all City of Oakland Standard Conditions of Approval, including SCA Air-2. This SCA would then require applicants for future qualifying development projects to either incorporate health risk reduction measures into the project, or to conduct more detailed and site-specific health risk assessments to demonstrate that modeled site-specific exposures would be less-than-significant.

Mitigation Measures

None required

Cumulative Air Quality Impacts

The geographic context considered for cumulative air quality impacts is the regional San Francisco Bay Area Air Basin, which is considered a nonattainment area for both State and federal ambient air quality standards for ozone and particulate matter. Cumulative air quality impacts are evaluated based on both consistency of the Plan with local and regional air quality plans (i.e., the City General Plan and the CAP), and a quantification of subsequent project-related air quality impacts.

A Plan level or project-level impact is also considered to be cumulatively significant, resulting in significant adverse impacts to the region's air quality conditions. Additional analysis to assess cumulative impacts is unnecessary.

Consistency with the CAP

As indicated in the discussion above, development facilitated by the Specific Plan would result in less than significant impacts regarding consistency with the CAP regarding growth in VMT and with regard to adequate transportation control measures. Because there is no significant impact for the Plan, there is no significant cumulative impact related to criteria pollutants. The Housing Element EIR analyzed criteria air pollutants and precursors based on consistency with the current Clean Air Plan, and also found these cumulative impacts to be less than significant. (**LTS**)

Odors

The analysis in the City of Oakland's Housing Element EIR found that all locations within the Housing Element Plan Area are less than one mile from a potential odor source, such as food processing facilities, painting/coating operations, or green waste/recycling facilities. The Housing Element EIR presents a reasonable estimation of all the odor sources within the City of Oakland, based upon business tax records, and it shows buffer zones around the identified sources based on BAAQMD recommendations. Nearly the entire City of Oakland and all of the Housing Element Plan Area (including the Coliseum District and surrounding area), could be exposed to nuisance odor impacts due to potentially incompatible land uses. The Housing Element EIR analyzed this impact and concluded that odor sources present in all high density areas of the City of Oakland could potentially expose residences to substantial/frequent odor. Similar to the conclusions of the Housing Element EIR, the conclusions of this

EIR is that cumulative odor effects are significant and unavoidable at the plan- and project-level of analyses. (**SU**)

Construction Emissions

Fugitive dust from all cumulative construction projects will be effectively reduced to a level of less than significant with implementation of required City of Oakland Standard Conditions of Approval (**LTS with SCAs**).

Larger individual construction projects could generate cumulative emissions of criteria air pollutants that would exceed the City's thresholds of significance, even with implementation of required City of Oakland Standard Conditions of Approval. This could also occur under concurrent construction of multiple, smaller projects in the vicinity, where these impacts would be cumulatively considerable (**SU**).

Other than the unique emissions associated with crushing or off-hauling of debris associated with demolition of the existing Coliseum, with implementation of required City of Oakland Standard Conditions of Approval, toxic emissions from cumulative construction projects are not expected to exceed thresholds for cancer risk, chronic health index, acute health index or annual average PM2.5 concentration levels (**LTS with SCAs**).

Operational Emissions of Criteria Pollutants

Once buildout of the Specific Plan is complete and all of the expected new development is fully occupied, new development pursuant to the Specific Plan will generate emissions of criteria pollutants from increased motor vehicle traffic and area source emissions. Traffic emissions combined with anticipated area source emissions would generate levels of criteria air pollutants that would exceed the City's project-level thresholds of significance, and such impacts would also be considered cumulatively considerable (**SU**).

Carbon Monoxide Concentrations

Since the Specific Plan would not expose sensitive uses and would not generate emissions leading to significant concentrations of CO that would violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation, there is no significant cumulative impact related to CO emissions (**LTS**).

Operational Toxic Air Emissions

Development pursuant to the Specific Plan would include new light industrial, custom manufacturing and other similar land uses that could emit toxic emissions. Existing regulatory requirements would ensure that such emissions would not individually exceed established acceptable standards, but may contribute to cumulatively considerable effects (**SU**).

Exposure to Toxic Air Contaminants

Similar to the Housing Element EIR conclusions, this EIR concludes that implementation of the recommendations of a project-specific health risk assessment (as required by SCAs) would reduce local toxic air contaminant exposures to acceptable levels for diesel particulate matter (DPM) from cumulative stationary and mobile sources, resulting in less than significant cumulative impacts (**LTS with SCAs**).

However, this EIR's conclusion (similar to the 2010 Housing Element EIR conclusion) is that implementation of the recommendations of a project-specific health risk assessment pursuant to SCA

Air-2 may not reduce local toxic air contaminant exposures to acceptable levels for gaseous TACs, and that the residual air pollution risk and hazard could have significant unavoidable cumulative impacts (**SU**).

4.3

Biological Resources

This section describes the biological resources that occur or which have the potential to occur in the Project Area or in the vicinity, and evaluates the potential Plan-related impacts on these resources. This section also describes plan features and mitigation measures to reduce or avoid adverse impacts to less-than significant levels as they relate to biological resources. These include mitigations that were developed to remain in compliance with City of Oakland policies and Standard Conditions of Approval.

Information on existing biological resources was obtained from the following sources: the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB), the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants, the United States Fish and Wildlife Service (USFWS) Federally Endangered and Threatened Species, two reconnaissance-level field surveys, survey data from other environmental groups working in the area, biological literature, and regional plans, EIRs and reports.

Environmental Setting

The Project Area includes approximately 780 acres in East Oakland extending from west of Interstate 880 to the San Leandro Bay. The area includes historical shoreline and salt marshes, and present day level, filled land. Until 1938, San Leandro Bay included 1,800 acres of tidal marsh. By 1986, only 76 acres of tidal wetlands remained, the rest was reclaimed to create the Oakland Coliseum, Interstate 880, the Oakland International Airport, and other industrial development (Golden Gate Audubon 2013). The current baseline condition is one that has been both historically and currently heavily used, and which is the site of the existing Coliseum and of the Oakland Airport Business Park. The natural habitats are overall degraded; however there are water features and bay shoreline that provide habitat for many avian, terrestrial, intertidal, and aquatic species along the edges of the Project Area, in the Arrowhead Marsh and the Martin Luther King Jr. shoreline.

Regional Setting

The California Environmental Resources Evaluation System (CERES) defines regional ecosystems within California to support a broad-based ecosystem approach to planning for the protection of biological diversity. The proposed Project is located in the Bay Area-Delta bioregion (CERES 2013), which encompasses the San Francisco Bay Area and the Sacramento-San Joaquin River Delta. The area has a Mediterranean climate, with a coastal climate of relatively cool summers, mild falls, and cooler rainy winters.

The San Francisco Bay-Delta is the largest estuary on the west coast of North America, supporting many varying aquatic and terrestrial habitats. There is a high diversity of plants and wildlife, including many species that are endemic or restricted to the geographical region. This high species diversity, including many species which are endemic, in combination with the relatively recent heavy development and increases in human population since the 1700s, results in a large number of endangered and threatened species in the region.

The San Francisco Bay is divided into four main sub-basins: the South Bay, Central Bay, North Bay (also referred to as San Pablo Bay) and Suisun Bay (Goals 1999). The South Bay sub-basin includes the San Francisco Bay south of the San Francisco-Oakland Bay Bridge and has a mostly urban and industrial shoreline. The Project Area is located adjacent to San Leandro Bay, an extension of San Francisco Bay on the east side of the South Bay sub-basin in Alameda County. The estuarine habitat of the South Bay has varying salinity levels and temperatures as freshwater flows change throughout the seasons. The South Bay is recognized as an important area for shorebirds and water birds due to the salt ponds and mudflats supported in this region (CERES 2013). San Francisco Bay is also home to numerous recorded invasive aquatic species, with more than 250 exotic species established in its waters (Cohen 2011). Its biological communities have also changed over time from habitat loss and degradation, introduction of pollutants and modifications to freshwater inflows (Goals Project 1999)

Project Setting

The Project Area has been heavily developed and includes the existing Oakland Coliseum and Arena and the Oakland Airport Business Park. The natural habitats are degraded; there are edge habitats with some natural characteristics, however. **Figure 4.3-1** shows the locations of the water features in the Project Area.

Coliseum District

The Coliseum District is highly developed, including the current Oakland Coliseum and Oracle Arena, associated paved parking areas, business and retail areas, a segment of the Southern Pacific Railroad line, and the Coliseum/Oakland Airport BART station. The Coliseum District also includes natural areas, which are segments of Damon Slough and Elmhurst Creek, two unnamed tributaries to Elmhurst Creek, and some small fragments of ruderal landscape are found along the northern and southern edges of the area.

Plan Buildout

Plan Buildout covers a large area including most of Sub-Area B and Sub-Areas C, D and E.

- Sub-Area B includes the urban Edgewater Business Park development, segments of Damon Slough and Edgewater Creek and their outfalls, the Edgewater Seasonal Wetland, and a portion of Martin Luther King Jr. (MLK) Regional Shoreline; the Wetland and Shoreline are both managed by the East Bay Regional Park District (EBRPD).
- Sub-Area C is a further extension of the business park. The north and west sides are bounded by Elmhurst Creek and San Leandro Creek, respectively, and includes San Leandro Creek Trail East of the MLK Regional Shoreline.
- Sub-Area D is also comprised of a developed business park, and is bounded on the north by the natural lands leading to the Arrowhead Marsh, on the west by San Leandro Creek and San Leandro Creek Trail West, and on the east by Arrowhead Marsh Trail, all parts of the MLK Regional Shoreline Park.
- Sub-Area E is comprised mainly of MLK Regional Shoreline Park and East Bay Municipal Utility District (EBMUD) lands, and includes tidal marsh, trails, ruderal lots, City soccer fields, and corporation yards.

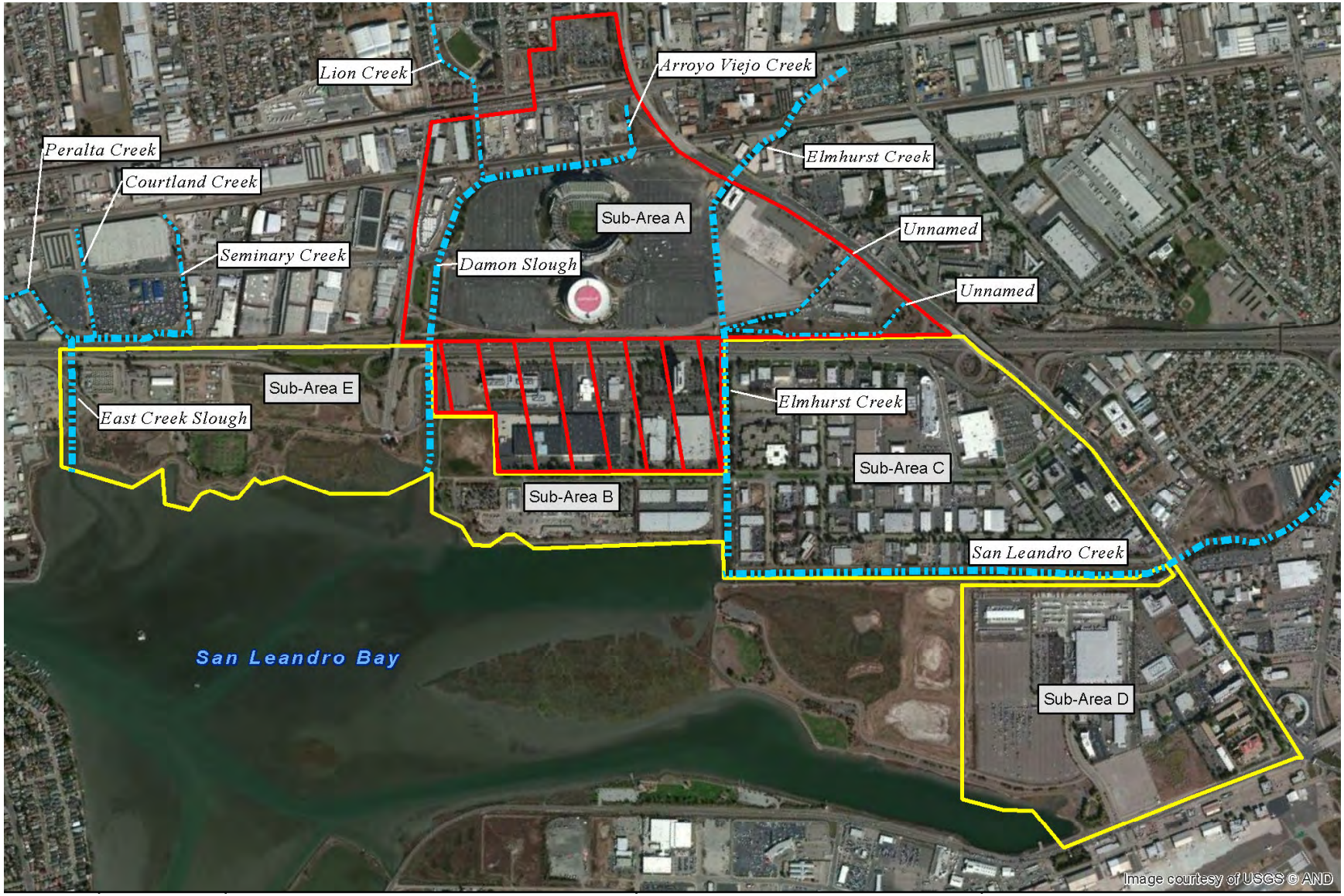


Figure 4.3-1
Water Features in Project Area

Source: Garcia & Associates (January 2014)

In summary, Sub-Areas A, B, C, and D, which are proposed for development, are highly urban and industrial developed areas and these uses have degraded the natural habitat. However, these areas are bounded by the natural features of the San Leandro Bay and its tributaries and associated parks and trails. Sub-Area E is more natural and less developed; although it is also composed of fill material.

The natural features within the Plan Buildout include the Edgewater Seasonal Wetland, portions of the MLK Regional Shoreline Park lands and associated trails, and portions of Damon Slough and Elmhurst Creek. Important natural features adjacent to the Plan Buildout include San Leandro Creek, San Leandro Bay, and more areas of the MLK Regional Shoreline Park lands including Arrowhead Marsh.

Vegetation and Habitat Types

Eight vegetation and habitat types are found within and near the Project Area; these include six natural types and two types that are associated with human activities.[1]

The six natural vegetation and habitat types found are:

- Open Water
- Creeks and Sloughs
- Coastal and Valley Freshwater Marsh
- Seasonal Wetland
- Northern Coastal Salt Marsh
- Northern Coastal Scrub

The two other vegetation and habitat types found are:

- Developed
- Ruderal/Landscaped

The locations of these types are illustrated on **Figure 4.3-2** which is based on Google Earth Imagery and GANDA staff site-visits in February and November of 2013. Developed and ruderal landscapes comprise approximately 94% of the Project Area.

[1] The classification of the natural vegetation is based primarily on the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986), with additional reference to vegetation alliances as described in A Manual of California Vegetation 2nd Edition (Sawyer et al. 2009).

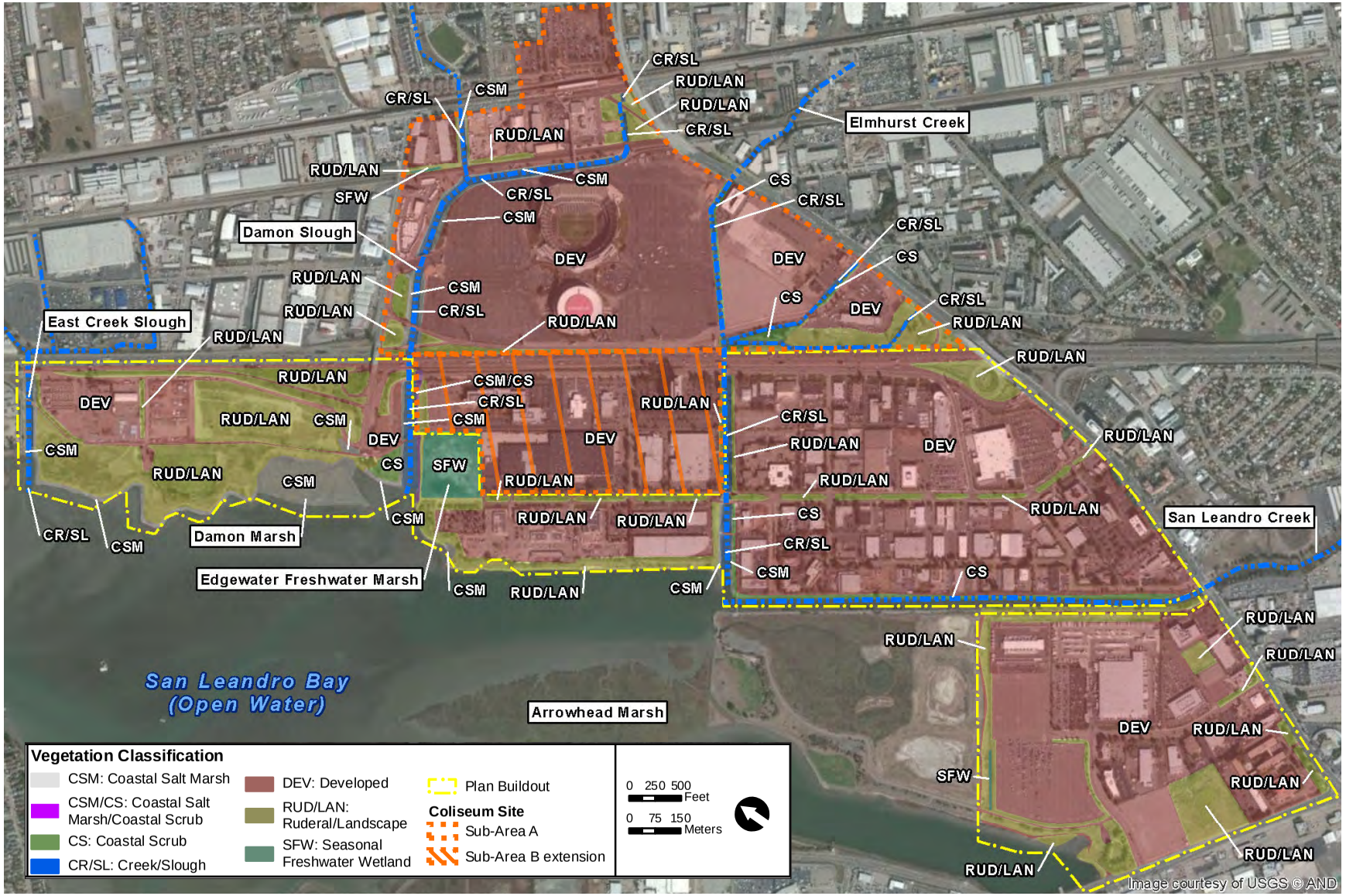


Figure 4.3-2
Vegetation and Habitat Types

Source: Garcia & Associates (January 2014)

Open Water

San Leandro Bay is part of the South San Francisco Bay and is adjacent to the Project Area. It is bounded by East Oakland, Alameda Island and the peninsula of land (Bay Farm Island) containing the Oakland International Airport. San Leandro Bay is relatively shallow, with a depth of less than ten feet, and has a soft-bottom substrate consisting of mud/silt/clay (Subtidal Goals Project 2010). As described above, this bay has undergone heavy development and lost much of its original 1,800 acres of tidal marsh due to filling of the bay to create the existing Oakland Coliseum, Interstate 880, the Oakland International Airport, and other industrial development (Golden Gate Audubon 2013). In addition, other land uses upstream, including logging and the creation of dams on San Leandro Creek, introduced large amounts of fine sediments to the bay contributing to its current shallow state with a soft muddy substrate (Oakland Museum of California 2013).

Under the Magnuson-Stevens Fishery Conservation and Management Act, Essential Fish Habitat (EFH) is identified to facilitate conservation and enhancement of habitats which support the nation's fishery resources (NOAA Fisheries 2013); see the Regulatory Setting section for further explanation of EFH. Under this act, the entire San-Francisco Bay-Delta Estuary is designated as EFH, due to the fact that these areas serve as habitat for important fisheries including salmonids, Pacific herring, northern anchovy and Pacific sardines (PMFC 1998).

Especially important EFH habitat features are recognized as Habitat Areas of Particular Concern (HAPC) including estuaries, seagrass, rocky reefs and kelp forests (NOAA Fisheries 2013); San Leandro Bay in the vicinity of the Project Area has the potential to include the first three of these HAPCs. First, San Leandro Bay is estuarine habitat, which is an HAPC as described above. Second, San Leandro Bay has the potential to support eelgrass (a type of seagrass). However, the closest documented eelgrass is approximately 2,800 feet from the Project Area close to Alameda Island, as found through surveys by National Marine Fisheries Service (NMFS) in 2003 and 2009 (Merkel & Associate 2010). Third, the area is thought to have historically supported rocky oyster reefs, but no significant remnant of this habitat remains (Subtidal Goals Project 2010). It is possible that oysters may be found in low densities on areas of rip rap along the shoreline.

The fish population of the South Bay region is characterized by Pacific staghorn sculpin (*Leptocottus armatus*), English sole (*Parophyrs vetulus*), sturgeon (*Acipenser* spp.), Sacramento splittail (*Pogonicthys macrolepidotus*), longfin smelt (*Spirinchus thaleichthys)*, bay pipefish (*Syngnathus leptorhynchus*) and the starry flounder (*Platichthys stetllatus*). Other common fish include species of rockfish, surf perch, sculpin, and gobies. Other residents include a large variety of invertebrates such a polychaetes, barnacles, mollusks, including the bay mussel *(Mytilus trossulus*), and crustaceans, including dungeness crab (*Metacarcinus magister*), bay shrimp (*Crangon* spp.) and numerous isopod and amphipod species (NOAA Fisheries 2007).

The marine mammals which typically utilize the South Bay include harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californianus*). Other marine mammals which use the bay, but are not expected to be found in the San Leandro Bay vicinity include the Stellar sea lion (*Eumetopias jubatus*), gray whale (*Eschrichtius robustus*), humpback whale (*Megaptera noveangliae*), harbor porpoise (*Phocoena*), and California sea otter (*Enhydra lutra*)(NOAA Fisheries 2007).

The San Leandro Bay also provides vital habitat to thousands of birds. The San Francisco Bay-Delta is used heavily as a stopover site for the more than a million shorebirds which use the Pacific Flyway migration route. Historically and currently, the region provides an alternative to the wetlands of the Central Valley, many of which have been lost to development and agriculture. More than 50% of the diving ducks which use the Pacific Flyway over-winter in the Bay-Delta. Some shorebirds show strong

site fidelity to small areas in the South Bay and do not leave those areas during the winter (Goals 1999). San Leandro Bay and its associated salt marsh, wetlands, sloughs, and creeks are all valuable habitat for these migrating shorebirds. San Leandro Bay is designated as an "Important Bird Area" by the Audubon Society, which is a designation applied to areas that are considered to be vital to birds and other biodiversity. Throughout the year many birds use the bay including large rafts of waterfowl. Typical species include greater scaup (*Aythya marila*), western gull (*Larus occidentalis*), double-crested cormorant (*Phalacrocorax auritus*), western grebe (*Aechmophorus occidentalis*), ruddy duck (*Oxyura jamaicensis*), eared grebe (*Podiceps nigricollis*) and American wigeon (*Anas Americana*) (Golden Gate Audubon 2013). Federally endangered California least terns (*Sterna antillarum browni*) and recently de-listed brown pelicans (*Pelecanus occidentalis californicus*) also forage in the open waters.

The Coliseum District is hydrologically connected to the open water habitat of San Leandro Bay by both Damon Slough and Elmhurst Creek. The overall Project Area is immediately adjacent to the open water habitat of San Leandro Bay and Plan Buildout includes the proposed creation of a bay inlet, which would remove fill to create more open water habitat.

Creeks and Sloughs

There are four creeks and sloughs contained within or adjacent to the Project Area which provide habitat and habitat functions for birds, mammals and aquatic species. They include San Leandro Creek, Elmhurst Creek and tributaries, Damon Slough and East Creek Slough.

San Leandro Creek

San Leandro Creek is mostly open throughout most of its approximately 21 mile alignment running from the Oakland Hills to San Leandro Bay, although portions have been culverted or channelized. There are two dams along it, creating the Upper San Leandro Reservoir and Lake Chabot before it drains to San Leandro Bay at Arrowhead Marsh, which is a relatively recently formed marsh. By 1895 the lower portion of the creek was channelized, as it is today. Much of the other marshland surrounding Arrowhead Marsh was filled in the early 1900s (Oakland Museum of California 2013).

The habitat provided by San Leandro Creek near the Project Area is an important component of the rich wildlife habitat found within the San Leandro Bay. The creek channel is roughly 140 feet wide as it passes between Sub-Areas C and D. Although this section of the creek is surrounded by urbanized business parks, it is bounded on either side by the San Leandro Creek Trail East and West, which are part of the MLK Regional Shoreline. San Leandro Creek supports a run of the Central California Coast steelhead (*Oncorhynchus mykiss*), a federally threatened species which migrate through San Leandro Bay and swim up San Leandro Creek to spawn. The creek and the surrounding bay and marshes provide important aquatic, intertidal and marsh habitat used by migratory birds travelling along the Pacific Flyway. Typical species include greater scaup, western gull, double-crested cormorant, western grebe, ruddy duck, eared grebe, American wigeon, great egret (*Ardea alba*), snowy egret (*Egretta thula*), and great blue heron (*Ardea herodias*) (Golden Gate Audubon 2013).

Elmhurst Creek

The prehistoric Elmhurst Creek flowed from its headwaters in the Oakland Hills down to a large salt marsh adjacent to San Leandro Bay. The creek has since been greatly altered, and available topographic maps show that the historic alignment remains only between 90th and 98th avenues and that the headwaters, originally located close to the historic town of Elmhurst, have been confined to a willow thicket at International Boulevard (Oakland Museum of California 2013). Since the late 1800s, the drainage of the upper creek has been diverted north to San Leandro Creek, and the lower portion

appears to have been channelized either during reclamation of the tidal marsh or during construction of the existing Oakland Coliseum, which began in 1962.

Elmhurst Creek is now a channelized waterway through the urbanized East Bay. The upstream portion of Elmhurst Creek is no longer visible at its historic Elmhurst location. The creek first emerges from underground culverts west of San Leandro Street near 81st Avenue and flows through industrial urban areas for approximately 1,400 feet prior to reaching the Oakland Coliseum complex. The channelized creek then follows a straight alignment for approximately 1,500 feet through the existing Oakland Coliseum parking lots on the southeast side of the Coliseum complex, before connecting with two small tributaries. It then flows in a channelized waterway to San Leandro Bay at roughly the same place as the outfall from San Leandro Creek southwest of I-880.

The current habitat of Elmhurst Creek is of poor quality and limited extent. The creek has been channelized into a narrow and deep channel. The substrate is comprised of mud, which includes fill material. The creek is tidally influenced and supports a handful of common bay plant species such as pickleweed (*Salicornia pacifica*) and marsh gumplant (*Grindelia stricta var. angustifolia*) along its narrow banks. A pair of American coots (*Fulica americana*) and a great egret was observed by GANDA staff during the February 2013 site visit. The creek itself may serve a limited role as a wildlife corridor within the industrial urban environment. However, the level of urbanization surrounding this creek is likely a deterrent to access by large numbers of wildlife, and it does not provide a corridor between the bay and any significant natural habitats inland (e.g., the San Leandro Hills). Proximity to I-880 may also expose wildlife to high vehicle-related mortality.

Damon Slough

Damon Slough and the surrounding area was historically part of a large expanse of tidal salt marsh and mudflats where Lion Creek (and the former East Creek upstream of Lion Creek) and Arroyo Viejo Creek drained water from the Oakland Hills to San Leandro Bay, circa 1850. By the 1960s the area was filled, and the creeks upstream channelized to facilitate urbanization in East Oakland, including the construction of the Oakland Coliseum, Interstate 880, and the Oakland Airport. Lion Creek and Arroyo Viejo Creek were realigned to connect with Damon Slough (also sometimes referred to as Lion Creek) and flow to the San Leandro Bay (Oakland Museum of California 2013).

The Alameda County Flood Control District holds a flood-control easement over Damon Slough. To the east, Damon Slough is bordered by an active Southern Pacific Rail line and PG&E poles and access roads. The slough then curves around the existing Coliseum parking area and flows out a straight channel between the Edgewater Business Park and the more natural areas of Sub-Area E to the Bay. Damon Slough is tidally influenced, and has mud bottom and banks. The slough is approximately 65 feet wide at the top and widens to approximately 150 feet where it enters San Leandro Bay. There are some natural uplands along the north side near the mouth of the slough. Although the surrounding area is heavily developed, the banks of Damon Slough are lined with common native tidal slough plant species, including marsh gumplant, pickleweed, and saltgrass (*Distichlis spicata*). A spotted sandpiper (*Actitis macularius*) was observed along the banks of Damon Slough during the site visit in February 2013, along with American crows (*Corvus brachyrhynchos*), a red-tailed hawk (*Buteo jamaicensis*), and killdeer (*Charadrius vociferous*). The northwest end of the slough includes salt marsh which is labeled as Damon Slough marsh and designated as clapper rail habitat and salt marsh harvest mouse habitat on Spartina Project Maps (ISP 2012). Anecdotal evidence exists of clapper rail using the whole length of the slough for foraging, although salt marsh does not currently extend up the entire alignment. Other typical species include great egret, snowy egret, double-crested cormorant, and grebe species (Oakland Museum of California 2013).

Damon Slough was listed as an impaired waterway by the San Francisco Regional Water Quality Control Board (RWQCB) and United States Environmental Protection Agency (EPA) under the federal Clean Water Act in 2009 (RWQCB 2009). It is considered impaired due to trash and gross pollutants, which exceed allowable water quality parameters. The largest contributing sources of litter and trash are thought to be from the existing Oakland Coliseum complex, a large recurring flea market nearby (outside of the Project Area) and surrounding streets, and debris from I-880, including food wrappers, plastic bottles and bags, old tires, shopping carts and clothing (Save the Bay 2013).

East Creek Slough

The northern end of the Project Area and Sub-Area E is bordered by East Creek Slough, which was also originally part of the large expanse of tidal salt marsh and mudflats where multiple creeks drained water from the Oakland Hills to San Leandro Bay, circa 1850. By the 1960s the area was filled and the creeks upstream channelized to facilitate urbanization in East Oakland. The major tributary creek to this slough was named East Creek. Peralta, Courtland, and Seminary creeks, which originally flowed from the Oakland Hills into East Creek Slough, are now combined into flood control channels that come together as the East Creek Slough (Oakland Museum of California 2013). The Alameda County Flood Control District holds a flood-control easement over East Creek Slough.

Coastal and Valley Freshwater Marsh

Coastal and valley freshwater marsh forms in permanently to semi-permanently flooded basins of relatively shallow water (Holland 1986). Equivalent vegetation types in Sawyer et al. (2009) include the cattail marshes (*Typha* (*angustifolia*, *domingensis*, *latifolia*) Herbaceous Alliance) and bulrush marshes (*Schoenoplectus* sp. Herbaceous Alliances). These marshes occur where freshwater creates inundated or saturated soil conditions on an annual or semi-annual basis, allowing for growth of perennial, emergent plant species. Edgewater Seasonal Wetland is the only existing coastal and valley freshwater marsh within the Project Area; see its location on Figure 4.3-2.

Edgewater Seasonal Wetland was also part of the historic tidal salt marsh and mudflats that existed in the area (circa 1850). The area was subsequently filled and developed as described above. After the Coliseum and surrounding industrial areas were developed, this site remained an open field and at times was used as an overflow parking lot for the Oakland Coliseum. Around the year 2000, the area was designated as a mitigation site for the Oakland Airport Runway 11-29 Rehabilitation Project. It was a joint project between the Port of Oakland, EBRPD, Golden Gate Audubon Society, San Francisco Bay Conservation and Development Commission (BCDC), Save the Bay, the U.S. Army Corps of Engineers (USACE), URS Corporation, the City of Oakland, the RWQCB, and the Federal Aviation Administration (Port of Oakland 2012).

The mitigation included creating and enhancing wetland features on the site that is now Edgewater Seasonal Wetland (formerly Damon Slough Seasonal Wetland Mitigation Project). The construction of the approximately 9-acre parcel was completed in April 2004. Over 7,000 native plants were planted at the mitigation site to create nesting and foraging habitat for wildlife. The Port of Oakland undertook design, restoration and monitoring of the site for five years. The project was approved by USACE, RWQCB, and BCDC and involved community support and involvement from the Golden Gate Audubon Society, Save the Bay, Sierra Club, and Citizens for Alameda's Last Marshlands. In 2012, the Port of Oakland transferred this land to the EBRPD for long-term management (Port of Oakland 2012). The Alameda County Flood Control District holds a flood-control easement over Damon Slough and the embankment portion of the site. In addition, there is a 20-foot PG&E easement for power/telephone poles and overhead wires along the southeastern boundary of the site.

The Edgewater Seasonal Wetland is adjacent to the brackish water habitat in Damon Slough at the confluence of Damon Slough and San Leandro Bay. Although adjacent to urban development on three sides, it has proximity to Arrowhead Marsh, which is a high quality habitat for marsh species, including the State and federally endangered species California clapper rail (*Rallus longirostris obsoletus*) and salt marsh harvest mouse (*Reithrodontomys raviventris raviventris*). The site is adjacent to the Garretson Point Trail in the MLK Regional Shoreline Park, and provides bird watching opportunities for the public.

The restored freshwater marsh now holds water six or seven months of the year and is used by migratory birds. The soils are saline because it was bay dredge that filled the site, but design of the restoration intends to allow for fresh water to pond in the area, which dilutes the salts in the soils. As the ponded area dries out in the spring the vegetation species change, as do the wildlife species using this marsh. In winter there are many species of ducks including American wigeon, northern shoveler (*Anas clypeata*), northern pintail (*Anas acuta*), mallard (*Anas platyrhynchos*), ruddy duck, and scaup (*Aythya* sp.) foraging and feeding in the deeper waters and roosting on the surrounding uplands. Significant numbers of shorebirds including American avocet (*Recurvirostra americana*), dowitcher species (*Limnodromu*s sp.), marbled godwit *(Limosa fedoa*), and black neck stilt (*Himantopus mexicanus*) utilize the site during their migratory season in late-winter and early spring (URS 2009). These birds forage in the shallower areas and roost in the uplands. The site is fenced to provide some protection from both human disturbance and from land-based predators including off-leash dogs and feral cats, which can be a significant problem for birds.

During the February 2013 site visit to this location, hundreds of migratory birds were observed utilizing this freshwater marsh (**Table 4.3-1**). There are also abundant native wetland plant species, such as cattail (*Typha sp*.), arroyo willow (*Salix lasiolepis*), rushes (*Juncus spp.*), bulrush (*Schoenoplectus sp.*), spike rush (*Eleocharis macrostachya*), and saltgrass.

Table 4.3-1: Bird Species Observed at Edgewater Seasonal Wetland During Site Visit February 22, 2013

Common Name:	Latin Name	Approximate Number
American avocet	*Recurvirostra americana*	200
American coot	*Fulica americana*	25
American crow	*Corvus brachyrhynchos*	2
American widgeon	*Anas americana*	16
Anna's hummingbird	*Calypte anna*	1
Black-bellied plover	*Pluvialis squatarola*	10
Black-necked stilt	*Himantopus mexicanus*	150
Blue-winged teal	*Anas discors*	10
Canada goose	*Branta canadensis*	4
Canvasback	*Aythya valisineria*	1
Greater scaup	*Aythya marila*	8
House sparrow	*Passer domesticus*	7
Killdeer	*Charadrius vociferous*	9
Mallard	*Anas platyrhynchos*	14
Marbled godwit	*Limosa fedoa*	600
Northern shoveler	*Anas clypeata*	6
Sanderling	*Calidris alba*	300
Song sparrow	*Melospiza melodia*	3
Western sandpiper	*Calidris mauri*	100
Whimbrel	*Numenius phaeopus*	75
Willet	*Tringa semipalmata*	150
TOTAL		**1691**

Freshwater Seasonal Wetland

Seasonal wetlands occur in low-lying areas such as ditches, swales and basins, in which the soil is inundated or saturated for part of the growing season. These wetlands are usually supported by direct precipitation and/or overland flow during the wet season. They are dominated by plant species that have some tolerance to seasonal inundation followed by prolonged drought. For the purposes of this analysis, it is differentiated from coastal and valley freshwater marsh by relatively high cover of non-native species, and the absence, or very low cover, of native annual forbs. As defined here, seasonal wetlands are not described by Holland (1986) and are not included in Sawyer et al. (2009). They represent wetlands that are created by human activity and structures.

The entire 880-acre site was not surveyed to identify all potential seasonal wetlands. Within the Project Area there is a freshwater seasonal wetland identified in a channel along the railroad right-of-way at 66th Avenue. It is expected there will be more freshwater seasonal wetlands in other low lying areas within the Project Area.

Northern Coastal Salt Marsh

Northern coastal salt marsh (Holland 1986) is found along the shores of bays and estuaries along the California coast and is influenced by regular tidal inundation by salt water for at least part of the year. Most salt marshes include some meandering open water tidal channels. The salt marshes around the San Francisco Bay are typically divided into three sections: a regularly inundated margin of open water along the shore of the Bay, a large mid-elevation section, and slightly higher-elevation regions where the marsh interfaces with the upland. Equivalent vegetation types in Sawyer et al. (2009) include pickleweed mats (*Sarcocornia pacifica* Herbaceous Alliance) and California cordgrass marsh (*Spartina foliosa* Herbaceous Alliance). The state rank (*S*-rank) assigned to both of these alliances is S3, which is considered vulnerable in the state due to restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state (CDFW 2013a).

Narrow margins of northern coastal salt marsh occur where the Project Area meets San Leandro Bay and edges of tidal sloughs and creeks. These areas are mostly mid-elevation marsh dominated by pickleweed, alkali heath (*Frankenia salina*) and salt grass. Damon Marsh is predominately vegetated by pickleweed and Arrowhead Marsh, which is nearer to open water, is primarily dominated by California cordgrass.

Damon Marsh

Damon Marsh is located on the east shore of San Leandro Bay within the MLK Regional Shoreline Park and managed by EBRPD. One main channel drains the marsh with outlets on both the northwestern and southern edges. Much of the marsh is vegetated with pickleweed, and marsh gumplant is present along the channel and in limited higher elevation areas within the marsh. Some remnant California cordgrass remains in the marsh; nonnative cordgrass populations consist of scattered patches along the channel and throughout the marsh. Damon Marsh is a Save the Bay restoration site where they have installed and plan to continue extensive upland transition zone plantings around the perimeter (Olofson Environmental Inc. 2013). Damon Marsh is known to support the federally and State endangered California clapper rail.

Arrowhead Marsh

Arrowhead Marsh formed relatively recently in San Leandro Bay, between 1855 and 1895, based on available United States Geological Survey data from those two years. Lake Chabot dam construction

began in 1874, and a severe storm breached the partially constructed earthen dam. This along with other factors including further additions of soil to the creek during construction and logging in the Oakland Hills during the 1800's contributed the sediments that make up Arrowhead Marsh. Much of the other marshland surrounding Arrowhead Marsh was filled in the early 1900's (Oakland Museum of California 2013). In 1986 Save the Bay, with the Golden Gate Audubon Society and the Sierra Club, filed a lawsuit against the Port of Oakland, who had been adding more fill to the area, and secured $2.5 million for the restoration of the marsh. An ongoing restoration program has been established with these funds to protect and enhance habitat for resident endangered species (Save the Bay 2013).

Today Arrowhead Marsh is part of the MLK Regional Shoreline Park and is actively managed by the EBRPD. It is approximately 50 acres and hosts some of the most significant populations of shorebirds and waterfowl in the bay. More than 90 bird species inhabit this area. Typical species include those found in San Leandro Bay and Edgewater Seasonal Wetland. Arrowhead Marsh is known to host the State and federally endangered California clapper rail and salt marsh harvest mouse (Golden Gate Audubon 2013).

Northern Coastal Scrub

Northern coastal scrub (Holland 1986) is dominated by low shrubs, usually 0.5-2 meters tall. These shrubs are usually dense but have scattered grassy openings on windy, exposed sites with shallow, rocky soils, in maritime influenced regions of northern and central California. Northern coyote brush scrub dominated by coyote brush (*Baccharis pilularis*) with associated marsh gumplant is the cover type represented within the Project Area. The equivalent vegetation types in Sawyer et al. (2009) are coyote brush scrub (*Baccharis pilularis* Shrubland Alliance) and gum plant patches (*Grindelia (stricta)* Provisional Herbaceous Alliance).

Northern coastal scrub is present in the Project Area in narrow bands along the banks of sloughs and creeks, usually segregated and upland from northern coastal salt marsh. There is one larger patch of coastal scrub located on the north side of where Damon Slough enters San Leandro Bay. The shrub cover is open and dominated by coyote brush and marsh gumplant and interspersed with nonnative and native grasses and forbs.

Developed

The developed land cover type includes all paved and developed areas such as buildings, parking lots, roads, and stadiums. Approximately 80% of the Project Area is developed and is in a highly urbanized context.

Sub-Areas C and D are entirely developed with commercial and business buildings and parking lots. Developed portions of Sub-Area A are the Coliseum, Arena, commercial and business buildings, and parking lots. Developed portions of Sub-Area B include City and commercial and business buildings, and parking lots.

Ruderal/Landscaped

Ruderal and landscaped areas are sites where the natural vegetation has been significantly altered by human activity. Approximately 14% of the Project Area is ruderal and landscaped areas. The landscaped vegetation is generally composed of ornamental or non-native species used for visual enhancements around buildings, homes or public areas. Ruderal vegetation is not a natural vegetation type; it is the term used to describe upland vegetation of roadsides and disturbed areas composed mainly of non-native grasses and forbs. It is not included in the vegetation classification system of Holland (1986) or

Sawyer et al. (2009). Regular herbicide spraying and weed mowing promote the persistence of ruderal vegetation.

Typical ruderal species within the Project Area include mustard (*Brassica* sp.), wild oats (*Avena* sp.), wild radish (*Raphanus sativus*), Harding grass (*Phalaris aquatic*), and bristly ox-tongue (*Helmintotheca echioides*). Ruderal and landscaped vegetation are ubiquitous throughout the Project Area in road edges and medians, lots, and buildings. Sub-Area E is composed primarily of ruderal and landscaped areas.

Special Status Species

Appendix 4.3 provides a comprehensive list of potentially occurring special status species prepared from background research. A species was considered to have potential to occur in the Project Area if its known or expected geographic range includes the vicinity of the Project Area, and if its known or expected habitat is represented within or near the Project Area. A preliminary list of potentially occurring special status species was compiled from the following sources:

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) species occurrences for the Project Area and 5 miles around the Project Area (CDFW 2013);
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants data request for the Oakland East, Oakland West, Richmond and San Leandro U.S. Geographical Survey (USGS) 7.5-minute quadrangles (CNPS 2013); and
- United States Fish and Wildlife Service (USFWS) Federally Endangered and Threatened Species List for the Oakland East, Oakland West, Richmond and San Leandro USGS 7.5-minute quadrangles (USFWS 2013).

A number of species known to occur within the Project Area vicinity are protected pursuant to Federal and/or State of California endangered species laws, or have been designated Species of Special Concern by CDFW. Section 15380(b) of the California Environmental Quality Act (CEQA) Guidelines also provides a definition of rare, endangered or threatened species that are not included in any listing. Species recognized under the terms are collectively referred to as "special status species." For the purposes of this EIR, special status species include:

- Listed, proposed for listing, or a candidate for listing as threatened or endangered under the Federal Endangered Species Act;
- Listed, or a candidate for listing, as rare, threatened or endangered under the California Endangered Species Act;
- Designated as "Special Concern" or "Fully Protected" species by CDFW;
- Protected by the Federal Marine Mammal Protection Act;
- Raptors (birds of prey), which are specifically protected by California Fish & Game Code Section 3503.5, which prohibits the take, possession, or killing of raptors and owls, their nests, and their eggs; and
- Those that may be considered rare or endangered pursuant to Section 15380(b) of the CEQA Guidelines (such as those listed as "Special Animals" by CDFW, which include species on CDFW's watchlist, USFWS Birds of Conservation Concern, and colonial nesting birds).
- Listed in the Special Plants, Bryophytes, and Lichens List as defined by the CDFW CNDDB; or

- Listed as California Rare Plant Rank (RPR) 1-3 as defined by the CNPS Inventory of Rare and Endangered Plants of California.

Table 4.3A-1 in Appendix 4.3A includes all 46 wildlife species considered and **Table 4.3B-1** in Appendix 4.3B lists all 33 plant species considered. The tables include the status, habitat requirements, and potential for each species to occur within the Project Area or adjacent habitat. Based on review of the biological literature of the region, information presented in previous environmental documentation, and an evaluation of the habitat conditions of the Project Area: a species was designated as having:

- no potential to occur ("none" in Table 4.3A-1) if the species' specific habitat requirements are not present, or the species is presumed, based on the best scientific information available, to be extirpated from the Project Area
- a "low potential" for occurrence if its known current distribution or range is outside the Project Area, or if limited or marginally suitable habitat is present
- a "moderate potential" for occurrence if there is low to moderate quality habitat present within the Project Area or immediately adjacent areas, and the Project Area is within the known range of the species, even though the species was not observed during biological surveys
- a "high potential" for occurrence if moderate to high quality habitat is present within the Project Area and the Project Area is within the known range of the species.

The background searches produced a preliminary list of 46 special status wildlife species that may have potential to occur within the Project Area. After considering habitat information from the reconnaissance surveys and reviewing the habitat preferences, geographic distribution, elevation range, and known occurrences through available survey data of all taxa on the preliminary list, the list was revised to include 35 special status wildlife species with low, moderate or high potential to occur in the Project Area. The remaining 11 special status wildlife species have no potential for occurrence because the Project Area does not provide suitable habitat and presence is unlikely, or they are documented by federal agencies to have been extirpated from the area. The 35 special status species include 7 fish species, 2 marine mammal species, 5 terrestrial mammal species, and 21 bird species.

The background searches produced a preliminary list of 33 special status plant species that may have potential to occur within the Project Area. After considering vegetation information from the reconnaissance surveys and reviewing the habitat preferences, geographic distribution, elevation range, and known locations of all taxa on the preliminary list, the list was revised to include 2 special status species with low potential to occur in the Project Area. The remaining 31 plant species have no potential for occurrence because the Project Area does not provide suitable habitat and presence is unlikely, or they are documented by state agencies to have been extirpated from the area.

Special Status Fish Species

The following special status fish species with potential to occur on the proposed Project site or in the vicinity of the Plan and are discussed in detail below:

- Chinook salmon, Central Valley Spring Run Evolutionary Significant Unit (ESU)
- Chinook salmon, Sacramento River Winter Run ESU
- Longfin smelt
- North American green sturgeon, southern Distinct Population Segment (DPS)

- Pacific herring
- Steelhead, Central California Coast DPS
- Steelhead, Central Valley DPS

Chinook salmon, Central Valley Spring Run ESU (*Oncorhynchus tshawytscha*) are designated as federally threatened. Chinook salmon are an anadromous fish, are the largest of all the Pacific salmon species, and are also referred to as king salmon. After hatching, these salmon spend several months to a year in freshwater before migrating to the ocean where they stay for one to several years. They return to their natal streams to spawn and die, going through only one spawning cycle. This species spawns in the Sacramento and San Joaquin River basins in California's Central Valley. It is thought that adult individuals generally remain on the north side of San Francisco Bay after entering the estuary through the Golden Gate, migrating around Angel Island and through San Pablo Bay towards the Delta. Juveniles originating from Central Valley streams are also thought to generally utilize the north side of the Bay as their primary migration corridor (NMFS 2009). Critical habitat for the Central Valley spring-run Chinook salmon includes all waters of San Francisco Bay north of the Bay Bridge. However there is some potential for this fish to use any part of the Bay for foraging. Central Valley spring-run Chinook salmon may occur in waters adjacent to the Project Area in low numbers.

Chinook salmon, Sacramento River Winter Run ESU (*Oncorhynchus tshawytscha*) are designated as federally endangered and State endangered. Its basic biology and migration route through the bay are similar to that of the Central Valley spring run Chinook described above. Critical habitat for the Sacramento River winter-run Chinook salmon includes all waters of San Francisco Bay north of the Bay Bridge. However there is some potential for this fish to use any part of the Bay for foraging. Sacramento River winter-run Chinook salmon may occur in waters adjacent to the Project Area in low numbers.

Longfin smelt (*Spirinchus thaleichthys*) are designated as a candidate for listing as federally threatened or endangered and are designated as State endangered. The longfin smelt is an anadromous fish which inhabits all parts of the San Francisco-Bay Delta, including the South Bay. They migrate into the delta in the winter to spawn and spend time in the San Francisco Bay and the open ocean. Longfin smelt densities have been found to be greater above deepwater channels than above the shoals; however they are also known to inhabit shallow near shore areas and may be present in the waters in the vicinity of the Project Area (Robinson and Greenfield 2011).

North American green sturgeon, southern DPS (*Acipenser medirostris*) are designated a federal threatened species and a California Species of Special Concern. Green sturgeon is a long-lived and slow growing anadromous species (Moyle et al. 1992). The oldest fish have been aged at 42 years, but this is probably an under estimate and maximum ages of 60-70 years or more are likely. Adult green sturgeon can reach lengths up to 8.8 feet (University of California 2013). Sturgeon display nocturnal behavior and are primarily benthic feeders. Adult green sturgeons migrate into freshwater beginning in late February with spawning occurring in March through July, with peak activity in April and June. After spawning, juveniles remain in fresh and estuarine waters for 1-4 years and then begin to migrate out to the sea. First spawning generally occurs at 15 years of age for males and 17 years for females (Moyle et al. 1992). The San Francisco Bay serves as an important habitat for all life stages of green sturgeon, as it supports rearing and serves as an important migratory/connectivity corridor between the Sacramento River system and near shore coastal marine waters (Moyle et al. 1992). They are expected to use the Central and North Bay more than the South Bay due to the location of the Sacramento River delta. The entire San Francisco Bay is designated as critical habitat for this species, and there is some potential for green sturgeon to occur in wasters adjacent to the Project Area.

Pacific herring (*Clupea pallasii*) are a State-Managed California Commercial Fishery under Sections 8550-8559 of the California Fish and Game Code. Like other short-lived coastal pelagic species, Pacific herring abundance fluctuates widely due to variable success of each year-class of new fish. In California, Pacific herring are in the open ocean during spring and summer. As early as October and continuing as late as April, schools of adult herring migrate into bays and estuaries to spawn, first appearing in the deep water channels before moving into shallow areas to spawn. Most spawning areas are characterized as having reduced salinity with calm and protected waters. Spawning-substrate such as marine vegetation or rocky intertidal areas are preferred but man-made structures such as pier pilings and riprap are also frequently used spawning substrates in San Francisco Bay. The eggs hatch approximately within 2 weeks of spawning, and juvenile herring typically spend time in the San-Francisco Bay estuary before moving into deep waters. There is potential for Pacific herring to be present in waters adjacent to the Project Area.

Steelhead, Central California Coast DPS (*Oncorhynchus mykiss irideus*) is designated as federally threatened. Steelheads are the anadromous form of rainbow trout, which hatch in freshwater and then migrate to the ocean, finally returning to freshwater streams to spawn. Typically the young steelhead resides in freshwater for 1-3 years and then move to the ocean for 1-2 years before returning to their native streams. Most anadromous salmonids die after spawning but steelhead may spawn up to four times per life span, transitioning between freshwater and saltwater each breeding cycle, though the mortality rate between successive cycles is high (University of California 2013). The Central California Coast Steelhead is found within the San Francisco Bay coastal and interior regions. Independent populations are documented throughout the bay from the Guadalupe River at the southern end to the Napa Rivers in the North Bay. San Leandro Creek has an independent population, and the fish move through San Leandro Bay to migrate between the ocean and the creek (California Trout 2013). Critical habitat for the Central California coastal steelhead includes all of the rivers and estuaries accessible to steelhead within the San Francisco and San Pablo Bay and along the California coast from the Russian River to Aptos Creek. The Project vicinity includes critical habitat for the Central California coastal steelhead DPS. Central California Coast steelhead has potential to occur in waters adjacent to the Project Area.

Steelhead, Central Valley DPS (*Oncorhynchus mykiss irideus*) is designated as federally threatened. The Central Valley steelhead DPS have a similar biology to that of the Central California Coast steelhead DPS described above. The Central Valley Steelhead consists of steelhead populations which spawn in the Sacramento and San Joaquin River basins in California's Central Valley. It is thought that adult individuals from this DPS generally remain on the north side of San Francisco Bay after entering the estuary through the Golden Gate, migrating around Angel Island and through San Pablo Bay towards the Delta. Juveniles originating from Central Valley streams are also thought to generally utilize the north side of the Bay as their primary migration corridor (NMFS 2009). Critical habitat for the Central Valley Steelhead DPS includes all waters of San Francisco Bay north of the Bay Bridge. However there is some potential for this fish to use any part of the Bay for foraging. Central Valley steelhead may occur in waters adjacent to the Project Area in low numbers.

Special Status Marine Mammals

The following special status marine mammal species with potential to occur in the Project Area or in its vicinity and are discussed in detail below:

- California sea lion
- Harbor seal

California sea lions (*Zalophus californianus*) are protected by the Marine Mammal Protection Act. They can be found year-round in the San Francisco Bay Estuary. They spend time in the pelagic zones of the open ocean, near shore waters and also land. They breed in Southern California and the Channel Islands and migrate north up the Pacific coast, and their lifespan is estimated to be 15-24 years. Sea lions temporarily come onto land between periods of foraging activity. This behavior is called hauling out and may be useful for predator avoidance, thermal regulation, social activity, mating and rest. In San Francisco Bay, seals haul out on offshore rocks, sandy beaches, and floating docks, wharfs and other man-made structures. Known areas where they aggregate to haul out are termed haul out sites. Known sites where they haul out and mate are termed rookeries. Their diet includes fish such as Pacific whiting, rockfish, anchovy, hake, flatfish, small sharks, and cephalopods including squid, and octopus. California sea lions may forage in the waters adjacent to the Project Area.

Harbor seals (*Phoca vitulina*) are protected by the Marine Mammal Protection Act. They can be found year-round in the San Francisco Bay Estuary. Harbor seals feed in the deeper waters of San Francisco Bay near the Golden Gate Bridge and along the deeper channels extending into the North and South Bay. Their diet includes a variety of fish including perch, gobies, herring and sculpin. Harbor seals also haul out as sea lions do. From March to June, Pacific harbor seals pup at multiple rookery haul out sites within of San Francisco Bay including at sites at Treasure Island in the Central Bay and Bair Island in the South Bay (Save the Bay 2013). They are known to haul out at Breakwater Island in Alameda Island although they are not expected to pup there (Alameda Point Project 2013). Harbor seals are expected to forage in waters adjacent to the Project Area year-round.

Special Status Terrestrial Mammal Species

The following special status terrestrial mammal species with potential to occur in the Project Area or in its vicinity and are discussed in detail below:

- Salt marsh harvest mouse
- Salt-marsh wandering shrew
- Pallid bat
- Silver-haired bat
- Townsend's big-eared bat

Salt marsh harvest mice (*Reithrodontomys raviventris*) are designated as both federally and State endangered species. They were historically found in marshes throughout San Francisco Bay, but due to habitat loss and fragmentation their numbers are greatly reduced. Their preferred habitat are salt marshes supporting dense stands of pickleweed and are adjacent to upland, salt-tolerant vegetation for escape during high tides. Their diet includes grasses, forbs, seeds and insects and area able to swim and climb. Their lifespan is about 8 to 12 months and breeding takes place from March to November. They are vulnerable to predation from raptors, snakes and terrestrial predators. Salt marsh harvest mice can disperse a considerable distance but not through fragmented habitat across bare or altered areas (EPA 2013). This species is assumed to be present in Arrowhead Marsh and, therefore, likely occurs in the marshes adjacent to the Project Area.

Salt-marsh wandering shrews (*Sorex vagrans halicoetes*) are recognized by CNDDB. They historically occurred in salt marshes along the borders of much of San Francisco Bay. Today, they are confined to small remnant stands of salt marsh found around San Mateo, Santa Clara, Alameda and Contra Costa Counties at elevations from approximately 6 to 9 feet. Their diet includes amphipods, isopods,

crustaceans, and insects that inhabit salt marshes. Foraging probably takes place under litter and debris found on moist ground and salt marsh wandering shrews are fairly good swimmers. They breed from February through June, with most young born during April, with another smaller breeding cycle in September. On average, salt marsh wandering shrews live less than 18 months with substantial population fluctuations. They are susceptible to predation by raptors and terrestrial predators and to changes in habitat (Collins 1998). The species may be present in marshes adjacent to the Project Area.

Pallid bats (*Antrozous pallidus*) are designated as a State species of special concern. This species is a medium sized bat which roosts alone, in small groups or gregariously (in large groups over 20). Day and night roosts include crevices in rocky outcrops and cliffs, caves, trees cavities and hollows, and various human structures such as bridges and barns. Roosts generally have unobstructed entrances/exits, are high above the ground, warm, and inaccessible to terrestrial predators (Bat Conservation International 2013; Sherwin and Rambaldini 2005). Mating occurs from October to February, birth of offspring from late April to July, and weaning in August. Maternity colonies disperse between August and October (Sherwin and Rambaldini 2005). Pallid bats' tendency to roost gregariously and their relative sensitivity to disturbance make them vulnerable to mass displacement. There are buildings with potential to provide roosting habitat and suitable foraging habitat could be found near the creeks and sloughs. The most recent CNDDB record is from 1943 found in an undisclosed location 3 miles east of Oakland. However, GANDA considers this species to be under represented in the CNDDB, as bat species in the Bay Area are not well studied. This species may occur in buildings or trees in the Project Area.

Silver-haired bats (*Lasionycteris noctivagans*) are recognized by CNDDB. Silver-haired bats are among the most common bats in forested areas of North America, most closely associated with coniferous or mixed coniferous and deciduous forest types, especially in areas of old growth. They form maternity colonies almost exclusively in tree cavities or small hollows. Silver-haired bats feed predominantly in disturbed areas, sometimes at tree-top level, but often in small clearings and along roadways or water courses (Bat Conservation International 2013). Compromised habitat for this species exists in the vicinity of the Project Area. The most recent CNDDB record is from 1984 found in an unspecified part of Alameda County. This species may occur in buildings or trees in the Project Area.

Townsend's big-eared bats (*Corynorhinus townsendii*) are designated as a State species of special concern. This species is a medium-sized bat with very long ears, about 1.5 inches. Townsend's big-eared bats will use a variety of habitats, almost always near caves or other roosting areas. They prefer larger open areas for roosting and often forage in edge habitats between forest and open areas. Maternity colonies form between March and June with pups born between May and July, in areas with warm, stable temperatures. This species is sensitive to disturbance at their roosting sites, making them vulnerable to mass displacement (Bat Conservation International 2013; Sherwin and Piaggio 2005). Compromised habitat for this species exists in the vicinity of the Project Area. There is no recent CNDDB record for this species; however, the 2013 Alameda Point Draft EIR refers to reports of this species in buildings along the northern Alameda Island shoreline (Alameda Point Project 2013). This species may occur in buildings or trees in the Project Area.

Special Status Amphibian and Reptile Species

No special status amphibian and reptile species are expected to occur in or near the Project Area.

Special Status Bird Species

The following special status bird species with potential to occur on the proposed Project site or in the vicinity of the Plan and are discussed in detail below:

- Alameda song sparrow
- American kestrel
- Burrowing owl
- California black rail
- California brown pelican
- California clapper rail
- California gull
- California least tern
- Cooper's hawk
- Double-crested cormorant
- Great blue heron
- Great egret
- Northern harrier
- Osprey
- Peregrine falcon
- Red-tailed hawk
- Redhead
- San Francisco saltmarsh common yellowthroat
- Snowy egret
- Western snowy plover
- White-tailed kite

Alameda song sparrows (*Melospiza melodia pusillula*) are designated a State species of special concern. The Alameda song sparrow is a resident in tidal salt marshes along the edges of San Francisco Bay (Richmond et al. 2011). It is one of two subspecies of song sparrow that breed in Alameda County and is endemic to the marshes bordering the Central Bay. It requires exposed ground for foraging and upper marsh vegetation for nesting. This species has been observed within the Project Area along the southwest edge (CNDDB). Suitable nesting and foraging habitat exists within the western edge of the Project Area.

American kestrels (*Falco sparverius*) are protected under Section 3503.5 of the California Fish and Game Code. American Kestrels occupy habitats ranging from deserts and grasslands to alpine meadows. They are most often seen perching on telephone wires along roadsides in open country with short vegetation and few trees. They prey on small birds, mammals, lizards, and insects. Nests are found inside cavities in trees, buildings, and other structures. Nesting has not been observed within the Project Area but has been confirmed on Alameda Island to the north (Richmond et al. 2011). Individuals have been observed foraging within the Project Area (GGAS 2007 and ISP 2008).

Burrowing owls (*Athene cunicularia*) are designated a State species of special concern. Burrowing owls are semi-fossorial (living underground) birds of grassland and prairie habitats. They inhabit open, arid and semiarid habitats with short emergent vegetation, including grasslands, deserts, agricultural fields, ruderal areas, and open landscaped areas throughout much of the state. Near the San Francisco Bay, they can be found from Arrowhead Marsh south to the Santa Clara County line (Richmond et al. 2011). This species is able to adapt to some human altered landscapes, including irrigation ditches, airports, golf courses, military bases, and parks. Burrowing owls primarily feed on mice and insects and typically occupy pre-existing ground squirrel (*Otospermophilus beecheyi*) burrows. Active burrows were observed within the Project Area in 1982 and 1983 near the junction of Edgewater Drive and Pardee Lane (CNDDB). There is also an established breeding population within MLK Regional Shoreline, which is partially within the Project Area (GGAS 2013).

California black rails (*Laterallus jamaicensis coturniculus*) are a State-listed endangered species. California black rails inhabit tidal salt marsh of San Francisco Bay, primarily in San Pablo and Suisun Bays. These small, dark rails are highly secretive and difficult to spot. They prefer muted or fully tidal marshes and nest in upper marshes, wet meadows, and flooded grassy vegetation away from urban areas with a

high proportion of pickleweed, sedges, rushes and cattails. Small invertebrates and seeds make up the majority of their diet. No black rails have been observed during recent surveys by the San Francisco Estuary Invasive Spartina Project (ISP) (ISP 2008, 2010, 2012). However, CNDDB lists one California black rail occurrence in Arrowhead Marsh in 1995 and states that the species is presumed to be extant. Suitable habitat exists within the Project Area along MLK Regional Shoreline, so there is a possibility of the species being present.

California brown pelicans (*Pelecanus occidentalis californicus*) were delisted from the Federal Endangered Species Act in 2009 but remain a state Fully Protected species. This coastal species ranges from the Gulf of California to southern British Columbia, nesting on islands in the Gulf of California and along the coast to West Anacapa Island. Important habitat during non-breeding season includes offshore rocks, islands, sandbars, breakwaters, and pilings. Breakwater Island, which runs along the south side of Alameda Point Channel, is the largest night roosting site for this species in San Francisco Bay (GGAS 2012). While they are highly unlikely to nest within the Project Area, California brown pelicans have been observed foraging and roosting throughout San Leandro Bay and MLK Regional Shoreline, which is partially within the Project Area (ISP 2010).

California clapper rails (*Rallus longirostris obsoletus*) are a federally and State-listed endangered species. They are found in salt and brackish marshes and tidal sloughs in the vicinity of the San Francisco Bay. They are associated with native cordgrass species and pickleweed dominated salt marshes and feed primarily on crustaceans, small fish, and insects. California clapper rails often utilize elevated areas, artificial structures, and levees within their home range, and surveys suggest they are attracted to artificial structures at nearby Arrowhead Marsh (USGS 2010). Yearly surveys performed by the San Francisco Estuary Invasive Spartina Project have documented clapper rails within the Project Area along MLK Regional Shoreline, including Damon Marsh and along San Leandro Creek (ISP 2008, 2010, 2012). There are also large populations at MLK Regional Shoreline's New Marsh and Arrowhead Marsh, both of which are bordered by the Project Area (ISP 2008, 2010, 2012).

California gulls (*Larus californicus*) are included on the California Department of Fish and Wildlife (CDFW) Watchlist. They are protected due to the decline in their historical breeding population at Mono Lake but have a well-established breeding population in the San Francisco Bay, particularly in the salt ponds of the South Bay (Ackerman et al. 2006). This is a colonial nesting species that nests on the ground in depressions lined with feathers and vegetation. California gulls feed in flight or forage while swimming or walking and primarily eat fish, insects, and eggs. They are also opportunistic scavengers and will pick up garbage and human food scraps. Though this species has not been observed nesting within the Project Area, it has been regularly observed foraging throughout the Project Area (GGAS 2007 and ISP 2008).

California least terns (*Sternula antillarum browni*) are a federally and State-listed endangered species. The California least tern nests on barren to sparsely vegetated sites near water, usually on sandy or gravelly substrate along the coast of California south to Mexico. While the majority of this species nests in southern California, there are several colonies throughout the San Francisco Bay Area, including at abandoned salt ponds and other sparsely vegetated areas adjacent to the bay. They feed primarily in shallow estuaries or lagoons where small fish are abundant. A colony with over 300 pairs is located at the former Naval Air Station in Alameda five miles northwest of the Project Area (USFWS 2006). Individuals have been observed foraging along MLK Regional Shoreline within the Project Area, but no nesting has been observed (GGAS 2007).

Cooper's hawks (*Accipiter cooperii*) are on the CDFW Watchlist. They inhabit wooded habitats throughout the state, ranging from deep forests to leafy subdivisions and backyards. Their nests, protected under section 3503.5 of the California Fish and Game Code, are typically found in pines, oaks,

Douglas firs, beeches, spruces, and other tree species, often on flat ground rather than hillsides. They are known to nest locally in Bay Area urban neighborhoods with one of the densest concentrations of nesting cooper's hawks ever recorded located in Berkeley (GGRO 2004). The Project Area contains suitable foraging and roosting habitat and potential nesting habitat in trees near the soccer fields in Sub-Area E. Individuals have been observed foraging within the Project Area (GGAS 2007).

Double-crested cormorant (*Phalacrocorocorax auritus*) nesting colonies are considered a resource of conservation concern by the CDFW. They are a yearlong resident along the coast of California. They are common in brackish and freshwater habitats on lakes, rivers, swamps, bays, and coasts. They feed primarily on fish, crustaceans, and amphibians. Double-crested cormorants breed in colonies throughout San Francisco Bay on the Bay Bridge, Richmond-San Rafael Bridge, San Mateo Bridge, and on Yerba Buena and Alcatraz Islands. They are not known to nest within the Project Area, but can be found foraging within the Project Area (ISP 2010 and GGAS 2007).

Great blue heron (*Ardea herodias*) nesting colonies are protected under Section 3503 of the California Fish and Game Code due to the declining availability of breeding areas. This species usually nests colonially in trees near water, but they can be found away from water as well. Found along calm freshwater and shallow bay water, this species feeds primarily on small fish, amphibians, small mammals, and invertebrates. There are no known nests or rookeries within the Project Area, though great blue herons are commonly seen foraging and roosting along MLK Regional Shoreline within the Project Area (GGAS 2007 and ISP 2008).

Great egret (*Ardea alba*) nesting colonies are listed by the State on the special animals list and are protected due to declining availability of breeding areas. It is a common resident throughout most of California and typically requires groves of trees near aquatic areas and removed from human activities for nesting and roosting. This species forages and rests in salt and freshwater marshes, marshy ponds, and tidal flats. The MLK Regional Shoreline within the Project Area provides suitable foraging habitat, and this species is commonly observed foraging within the Project Area (ISP 2008 and GGAS 2007). The closest known rookeries are at Lake Merritt in Oakland (about four miles from the Project Area) and Bay Farm Island (less than one mile from the Project Area).

Northern harriers (*Circus cyaneus*) are designated a State species of special concern. They nest and forage in sloughs, wet meadows, marshlands, swamps, prairies, plains, grasslands, and shrublands. They are also found in large forest openings and require open, low woody or herbaceous vegetation for nesting and hunting. Harriers are ground nesters and feed on small mammals such as mice and California vole. There is a lack of suitable nesting habitat within the Project Area, but this species has been observed foraging and roosting within the Project Area (GGAS 2007).

Ospreys (*Pandion haliaetus*) and their nests are protected under Section 3503.5 of the California Fish and Game Code. They nest near lakes, reservoirs, and streams along riparian forest edges and can be found around nearly any body of water due to their diet of fish. Their nests are often built on top of open-topped trees or manmade structures, such as cranes or anything with an open platform. Numbers of ospreys nesting around San Francisco Bay have been steadily increasing over recent years (Bay Nature 2013) and the closest known nests were located at Breakwater Island and Seaplane Lagoon, both about five miles from the Project Area in Alameda. Ospreys have been observed within the Project Area (GGAS 2007), and there is potential for nesting and foraging within the Project Area along MLK Regional Shoreline.

Peregrine falcons (*Falco peregrinus anatum*) were removed from the State threatened and endangered species list in 2008; however, they remain Fully Protected under the California Fish and Game Code. Peregrine falcons frequently nest near water on ledges of rocky cliffs, bridges, and buildings. They can

also be found along rivers and coastlines or in cities. Throughout the San Francisco Bay Area territorial pairs can be found on most bridges. The closest known pair to the Project Area nest on the Fruitvale Bridge 0.9 mile to the north. The Project Area includes suitable foraging habitat with abundant mid-sized bird species, which are the most common prey item for peregrine falcons, and individuals have been observed within the Project Area (GGAS 2007).

Red-tailed hawks (*Buteo jamaicensis*) are protected under Section 3503.5 of the California Fish and Game Code. They inhabit open habitat, including desert, scrublands, grasslands, roadsides, fields and pastures, and broken woodland. They nest in the crowns of tall trees on cliff ledges or on artificial structures such as transmission towers. They are most common hawk seen in the urban San Francisco Bay Area. Small mammals make up the majority of their diet, but they also feed on lizards, snakes, small birds, and invertebrates. The Alameda County Breeding Bird Atlas confirms the presence of nesting red-tailed hawks within the grid that includes the Project Area, and individuals have been observed foraging and roosting within the area (GGAS 2007 and ISP 2010). The Project Area contains suitable habitat for foraging and nesting red-tailed hawks.

Redheads (*Aythya americana*) are a State species of special concern. This duck species occurs year round in California and most commonly nests in inland freshwater emergent wetlands but is found closer to the coast along the southern half of California. During nonbreeding season, they forage and rest on large deep bodies of water and may form rafts far from shore. Food is mostly obtained by diving >1 meter in depth, and they mostly feed on pond weeds. The only known breeding behavior documented in Alameda County, as described in the Alameda County Breeding Bird Atlas, is about five miles south of the Project Area at Hayward Marsh. It is unlikely that this species would nest within the Project Area, but it has been documented foraging throughout Arrowhead Marsh and MLK Regional Shoreline within the Project Area (GGAS 2007 and Cornell 2013).

San Francisco saltmarsh common yellowthroats (*Geothlypis trichas sinuosa)* are a State species of special concern. They are endemic to the San Francisco Bay region and are associated with emergent wetlands and low, dense vegetation near water. They are associated with rushes, peppergrass (*Leipidium latifolium*), and reeds and nest near the ground and well-concealed in vegetation such as cattails and tules. The Project Area contains suitable nesting habitat and potentially breeds within the grid that includes the Project Area, according to the Alameda County Breeding Bird Atlas. This species has been observed along MLK Regional Shoreline and within the Edgewater Seasonal Wetlands area of the Project Area (ISP 2008 and Cornell 2013).

Snowy egret (*Egretta thula*) nesting colonies are listed by the State on the special animals list and are protected due to declining availability of breeding areas. This species is most common along the coast, though they do breed patchily in inland wetlands. They nest colonially, usually on protected islands, and often with other small herons. Snowy egrets concentrate on mudflats, beaches, and wetlands, but also forage in wet agricultural fields and along the edges of rivers and lakes. They have a known rookery on Bay Farm Island (less than one mile from the Project), which is the largest colony in the San Francisco Bay Area (SFBBO 2011) and are commonly seen foraging and roosting within the Project Area throughout Damon Slough, Edgewater Seasonal Wetlands, and around the Oakland Coliseum (Cornell 2013, GGAS 2007, and ISP 2008).

Western snowy plovers (*Charadrius alexandrinus nivosus*) are designated a federally threatened species. They breed from Washington to Baja California primarily on sandy beaches, large alkali lake shorelines, salt pond levees, and dunes. They require sandy, gravelly, or friable soils for nesting and use wide, dune-backed beaches during the nonbreeding season for foraging and roosting. They typically feed near the mean high waterline and forage on the surface of the sand or low dune vegetation. Western snowy plovers have historically nested within five miles of the Project Area at Alameda south

shore, Oakland Airport, and Bay Farm Island, which borders the Project Area to the west (CNDDB and USFWS 2001). The Bay Farm Island population's historic territory extends within the Project Area (CNDDB). Breeding observations have not been made at these locations in recent years, but individuals have been observed foraging and roosting at MLK Regional Shoreline within the Project Area (Cornell 2013).

White-tailed kites (*Elanus leucurus*) are a State species of special concern. They can be found foraging for small mammals in open grasslands, meadows, or marshes. They typically use isolated, dense topped trees for nesting and perching and typically nest in oak woodlands or trees along marsh edges. They can be found foraging for small mammals in open grasslands, meadows, or marshes. White-tailed kites often roost communally during the nonbreeding season, sometimes with over 100 individuals per group. A successful nest has been documented in a light industrial neighborhood near Arrowhead Marsh ((M. Lowe, pers. obs.) ESA 2013) and nesting is possible in dense trees within the Project Area. Individuals have also been observed foraging and roosting within and surrounding the Project Area (Cornell 2013).

Special Status Plant Species

The following special status plant species with potential to occur in or in the vicinity of the Project Area and are discussed in detail below:

- Marin knotweed
- Saline clover

Marin knotweed (*Polygonum marinense*) is designated by the CNPS as California Rare Plan Rank (CRPR) 3.1, which include plants where more information is needed and are considered seriously threatened in California. It is associated with salt marsh habitat. Marin knotweed's only known occurrence in Alameda County is historic (1863), and the species is primarily found in Marin and Solano Counties. There is very low potential that this species would occur in the Project Area because of its extreme rarity and the development that has occurred within the Project Area since its last record.

Saline clover (*Trifolium hydrophilum*) is designated by the CNPS as CRPR 1B.2, which includes plants which are considered rare, threatened or endangered in California and elsewhere or moderately threatened in California. Saline Clover is associated with salt marsh. It is currently known only from two botanic regions in Alameda County: alkaline habitats in Newark, CA. and Livermore Valley (Lake 2010). There is very low potential that this species would occur in the Project Area because of its extreme rarity.

Special Status Natural Communities

Special Status natural communities are designated by various resources agencies, such as CDFW, NOAA-fisheries, ACOE, and other State, federal and local agencies. These are communities that are generally considered to have important functions or provide important habitat for wildlife. The special status natural communities within or near the Project Area include:

- Critical Habitat
- Essential Fish Habitat
- Jurisdictional Waters
- Baylands and Subtidal Habitat

As described above, the Project Area is mainly composed of developed and ruderal areas. However the creeks, sloughs, and San Leandro Bay that run through and are adjacent to the site do include important habitat for wildlife.

Critical Habitat

The USFWS and NMFS designate critical habitat for species that are listed as threatened or endangered. "Critical habitat" is defined in Section 3(5)(A) of the Federal Endangered Species Act as those lands (or waters) within a listed species' current range that contain the physical or biological features that are considered essential to the species' conservation, as well as areas outside the species' current range that are determined to be essential to its conservation. Critical habitat for green sturgeon and Central California coast steelhead are designated in San Francisco Bay and includes the waters within and adjacent to the Project Area.

Essential Fish Habitat

Essential fish habitat (EFH) (see Regulatory Setting section below for further discussion on EFH) is present adjacent to the Project Area in San Leandro Bay for Pacific groundfish, coastal pelagic species, and Pacific Coast salmon. Pacific groundfish species include species of rockfishes, flatfishes, sharks, and others. Coastal pelagic species include Pacific herring, northern anchovy, Pacific sardine, and jack mackerel (PMFC 1998). As noted above, several threatened and endangered salmonids have potential to occur in Project Area waters. HAPCS are also further defined within EFH as described above. San Leandro Bay has the potential to contain eelgrass, although the only documented eelgrass is approximately 2,800 feet from the Project Area close to Alameda Island, found through surveys by NMFS in 2003 and 2009 (Merkel & Associate 2010). San Leandro Bay is thought to have supported historic rocky oyster reefs, but no significant remnant of this habitat remains (Subtidal Goals Project 2010). It is possible that oysters maybe found in low densities on areas of rip rap along the shoreline.

Jurisdictional Waters

San Francisco Bay, San Leandro Bay, San Leandro Creek, Damon Slough, Elmhurst Creek, and East Creek Slough are considered navigable Waters of the United States; therefore, they are "jurisdictional" waters regulated by the US Army Corps of Engineers under Section 10 of the Rivers and Harbors Act up to mean high water and under Section 404 of the Clean Water Act (CWA) up to the mean high tide line (see Regulatory Setting below). These waters are also regulated by the RWQCB as Waters of the State and by BCDC, which has jurisdiction over all areas of San Francisco Bay that are subject to tidal action, as well as a 100-foot shoreline band.

Baylands and Subtidal Habitat

In San Francisco Bay, two large goals projects have been established by cooperating federal, State and local agencies to establish long-term development and restoration goals and guidelines to create and enhance the baylands and subtidal ecosystems of San Francisco Bay. The US Environmental Protection Agency (EPA), RWQCB, the Bay Area Wetland Ecosystem Goals Project (including staff from the San Francisco Estuary Institute, EPA, RWQCB and CDFW) published the Baylands Ecosystem Habitat Goals (Goals Project 1999). The California Coastal Conservancy and Oceans Protection Council, NOAA-Fisheries, BCDC, and the San Francisco Estuary Partnership worked cooperatively to publish the San Francisco Bay Subtidal Habitat Goals Report: Conservation Planning for the Submerged Areas of the Bay 50-Year Conservation Plan (Subtidals Goals Project 2010).

Regulatory Setting

A discussion of applicable federal, State, and local regulations and policies is presented below.

Federal

National Environmental Policy Act (42 U.S.C. 4321 ET. SEQ.)

The National Environmental Policy Act (NEPA) of 1969 established policy and procedures to bring environmental considerations into the planning process for Federal projects. NEPA requires all Federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environment and avoid or minimize adverse environmental impacts. Implementing regulations by the Council on Environmental Quality (40 CFR Parts 1500-1508) direct Federal agencies to emphasize significant environmental issues to project planning and to integrate impact studies required by other environmental review laws and executive orders into the NEPA process. The NEPA process should, therefore, be seen as an overall framework of the environmental evaluation of Federal actions.

Federal Endangered Species Act of 1973, as amended (Public Law 93-295)

With the passage of FESA, the U.S. Congress pledged the Nation to conserve, to the extent practicable, species of wildlife and plants facing extinction, pursuant to international treaties, conventions, and agreements; and to encourage States, through Federal financial assistance and a system of incentives, to adopt practices which safeguard the Nation's heritage of biological resources. Federal agencies that fund, authorize, or carry out actions that "may affect" a listed species and its habitat must consult with the USFWS and/or NOAA Fisheries according to the provision in Section 7(a) of FESA for federal actions. The USFWS has jurisdiction over plants, wildlife and resident fish; NOAA Fisheries has jurisdiction over anadromous fish, marine fish and marine mammals. Provisions of the 1982 amendments to FESA authorize USFWS and NOAA Fisheries to permit the taking of listed species, if such taking is "incidental to, and not the purpose of carrying out otherwise lawful activities [16 U.S.C. 1539 and Section 10(a)(1)(B) of FESA] pursuant to Section 7 of FESA for federal actions."

Magnuson-Stevens Fishery Conservation and Management Act

Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH for federally managed fish species. These species include commercial fishes with established Fisheries Management Plans as managed by regional fisheries management councils. EFH includes those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity. In the definition of EFH: “waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle.

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) of 1972 establishes a federal responsibility for the protection and conservation of marine mammal species by prohibiting the harassment, hunting,

capture, or killing of any marine mammal. The MMPA includes an Incidental Harassment Authorization for the incidental take of small numbers of marine mammals by harassment. NOAA Fisheries and USFWS are the federal agencies responsible for enforcing the MMPA.

Fish and Wildlife Coordination Act (16 U.S.C. 661-666)

Project proponents are required under the provisions of this Act to coordinate with USFWS and CDFW with regard to projects that affect the waters of streams or other water bodies and wildlife resources (including plants) and their habitats.

Migratory Bird Treaty Act (MBTA)

The MBTA of 1918 provides protection for "migratory birds… or any part, nest, or egg of any such bird" (16USC 703). Under this Act, the following activities are prohibited: "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner." For the purpose of this project, any Project activities that disturb an active nest or causes nest abandonment are prohibited. Deterrence measures (such as artificial predator-models or plastic sheeting) may be used to discourage the construction of nests by birds at a Project Area where birds may be expected to attempt nesting.

Section 401 of the Clean Water Act

Section 401 of the CWA requires that an applicant for a Federal license or permit that allows activities resulting in discharge to waters of the United States must obtain a State certification that the discharge complies with other provisions of CWA. The RWQCB administers the certification program and issues National Pollution Discharge Elimination System (NPDES) permits.

Rivers and Harbors Appropriations Act of 1899

Section 9 of the Rivers and Harbors Appropriation Act (33 U.S.C. 401) prohibits the construction of any bridge, dam, dike, or causeway over or in navigable waterways without Congressional approval.

Section 10 (33 U.S.C. 403) of the Rivers and Harbors Act appoints the Army Corps of Engineers (Corps) to regulate the construction of structures in, over, or under, excavation of material from, or deposition of material into "navigable waters." In tidal areas the limit of navigable water is the mean high tide line; in non-tidal waters it is the ordinary high water mark (OHWM). Larger streams, rivers, lakes, bays, and oceans are examples of navigable waters regulated under Section 10 of the Rivers and Harbors Act.

Section 404 of the Clean Water Act (33 U.S.C. 1251-1376)

The discharge of dredged or fill material into "waters of the United States" is regulated by the USACE under Section 404 of the CWA. "Waters of the United States" are broadly defined in 33 CFR 328.3 (a) (USACE Regulatory Program Regulations, Federal Register Vol. 51, No. 219, November 13, 1986) to include non-tidal, perennial and intermittent watercourses, and tributaries to such watercourses, with no stated limit on the order of tributary included as "waters."

The lateral limits of USACE jurisdiction for non-tidal watercourses (without adjacent wetland areas) are defined in 33 CFR 329.11 (a)(1) as the "ordinary high water mark" (OHWM). OHWM is defined as "...the line on the (watercourse banks) established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of

soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas." USACE definition of a wetland is: "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The edges of perennial and seasonal-flow watercourses often display these characteristics as an aquatic/wetland interface or "wetland fringe." This situation will dictate extending the lateral limit of USACE jurisdiction beyond the OHWM to include the wetland fringe (see 33 CFR 328.3(a)).

San Francisco Bay Long Term Management Strategy for Dredging

The Long Term Management Strategy (LTMS) is a cooperative effort of the USEPA, USACE, RWQCB, and BCDC for the placement of dredged material in the San Francisco Bay Region. In 2001, the LTMS Management Plan was established to reduce disposal of dredged material and to reuse dredged material for beneficial use in San Francisco Bay. A Dredged Material Management Office (DMMO) was created to process dredging and disposal projects in the San Francisco Bay area. The DMMO is staffed by the four cooperative agencies and by representatives of CDFW, NOAA Fisheries, and USFWS who provide technical advice and guidance on dredging projects impacts to biological resources. The agencies jointly review applications before issuing permits and/or authorizations. In addition, work windows have been established for maintenance dredging projects and vary based on the project location and the potential for the presence of special status species. If a project needs to occur outside of the established work window, individual consultation with the appropriate resource agencies would be required.

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) of 1970 (P.R.C. 21000 et seq.) requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. The CEQA Guidelines found in the California Code of Regulations, in Chapter 3 of Title 14, provide objectives, criteria and procedures for the orderly evaluation of projects and the preparation of environmental impact reports, negative declarations, and mitigated negative declarations by public agencies. The fundamental purpose of the Guidelines is to make the CEQA process comprehensible to those who administer it, to those subject to it, and to those for whose benefit it exists. To that end, the Guidelines are more than mere regulations which implement CEQA as they incorporate and interpret both the statutory mandates of CEQA and the principles advanced by judicial decisions.

California Endangered Species Act

The basic policy of CESA of 1984 (Sections 2050-2098 California Fish and Game Code) is to conserve and enhance endangered species and their habitats. As such, State agencies cannot approve any action under their jurisdiction when the action will result in the extinction of endangered and threatened species or destroy habitat essential to their continued existence, if reasonable and prudent alternatives exist (Section 2053). However, CESA allows approval of projects resulting in jeopardy, if there are overriding social and economic factors. CESA requires that the lead agency conduct an endangered species consultation with CDFW if the proposed action could affect a State-listed species. This process is similar to a Federal Section 7 consultation with NOAA Fisheries and USFWS and requires providing CDFW

with information on the project and its potential impacts. CDFW then prepares a written finding on whether the proposed action will jeopardize the listed species or destroy essential habitat. In the case of an affirmative finding, CDFW presents alternatives to avoid jeopardy. Implementation of CDFW recommendations become mandatory components of the project.

Native Plant Protection Act

The legal protection afforded listed plants under the Native Plant Protection Act (NPPA) of 1973 (Sections 1900-1913 California Fish and Game Code) includes provisions that prohibit the taking of plants from the wild and a salvage requirement for landowners. If a landowner has been informed of the presence of a listed species on the property, CDFW must be notified at least ten days in advance of any land use change that might affect the species or its habitat, thereby affording CDFW an opportunity to conduct a salvage operation. Candidate species are also protected from taking under NPPA.

Section 1602 of the California Fish and Game Code

CDFW has authority under Sections 1601 and 1607of the CFGC to issue an agreement with attached conditions (a "Streambed Alteration Agreement") authorizing certain actions that will "...divert, obstruct or change the natural flow or bed, channel or bank of any river, stream or lake designated by CDFW in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit…"

McAteer-Petris Act

The McAteer-Petris Act, enacted in 1965, established BCDC, which regulates dredging, filling, and public access within 100 feet of the mean high tide line within San Francisco Bay. BCDC has jurisdiction over open water, marshes and mudflats of greater San Francisco Bay, the first 100-feet inland from the shoreline surrounding San Francisco Bay, portion of Suisun Marsh below the ten-foot contour line, and portions of most creeks, rivers, sloughs and tributaries that flow into San Francisco Bay.

Local

City of Oakland Creek Protection, Storm Water Management and Discharge Control Ordinance

Oakland Municipal Code (13.16) requires a Creek Protection Permit to be obtained prior to development or work on a creekside property. A Creek Protection Plan to protect the Creek, its banks, riparian vegetation, wildlife, surrounding habitat and the natural appearance of the Creek may be required as part of the Creek Protection Permit (City of Oakland, 2013).

Oakland Tree Protection Ordinance

The Oakland Tree Protection Ordinance (12.36) was enacted to protect and preserve trees by regulating their removal. A tree removal permit is required for the removal of any protected tree. Protected tree classifications are detailed in the ordinance (City of Oakland, 2013).

City of Oakland Standard Conditions of Approval

The City's Standard Conditions of Approval (SCAs) relevant to biological resources that would be impacted by implementation of the proposed Project are listed below. All applicable SCAs would be adopted as part of the proposed Project to reduce impacts to biological resources. This section focuses on those SCAs with the most direct relevance to biological resource impact reduction. However, SCAs

relating to other resource areas including Air Quality, Geology and Soils, Hazards and Hazardous Materials, and Hydrology and Water Quality will also reduce impacts to biological resources.

This SCA applies to all construction projects:

> **SCA Bio-1: Operational Noise-General**. Ongoing. Noise levels from the activity, property, or any mechanical equipment on site shall comply with the performance standards of Section 17.120 of the Oakland Planning Code and Section 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the Planning and Zoning Division and Building Services.

This SCA applies to all projects that involve pile driving or other extreme noise generation greater than 90 dBA:

> **SCA Bio-2: Pile Driving and Other Extreme Noise Generators.** *Ongoing throughout demolition, grading, and/or construction.* To further reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90dBA, a set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant. Prior to commencing construction, a plan for such measures shall be submitted for review and approval by the Planning and Zoning Division and the Building Services Division to ensure that maximum feasible noise attenuation will be achieved. This plan shall be based on the final design of the project. A third-party peer review, paid for by the project applicant, may be required to assist the City in evaluating the feasibility and effectiveness of the noise reduction plan submitted by the project applicant. The criterion for approving the plan shall be a determination that maximum feasible noise attenuation will be achieved. A special inspection deposit is required to ensure compliance with the noise reduction plan. The amount of the deposit shall be determined by the Building Official, and the deposit shall be submitted by the project applicant concurrent with submittal of the noise reduction plan. The noise reduction plan shall include, but not be limited to, an evaluation of implementing the following measures. These attenuation measures shall include as many of the following control strategies as applicable to the site and construction activity:
>
> a. Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;
>
> b. Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;
>
> c. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;
>
> d. Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and
>
> e. Monitor the effectiveness of noise attenuation measures by taking noise measurements.

This SCA applies to all construction projects that will have new exterior lighting:

> **SCA Bio-3: Lighting Plan.** *Prior to the issuance of an electrical or building permit.* The proposed lighting fixtures shall be adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties. Plans shall be submitted to the Planning and Zoning Division and the Electrical Services Division of the Public Works Agency for review and approval. All lighting shall be architecturally integrated into the site.

These SCAs apply to all projects that require a removal of any unprotected tree:

> **SCA Bio-4: Tree Removal Permit on Creekside Properties.** *Prior to issuance of a final inspection of the building permit.* Prior to removal of any tree located on the project site which is identified as a creekside

property, the project applicant must secure the applicable creek protection permit, and abide by the conditions of that permit.

SCA Bio-5: Tree Removal during Breeding Season. *Prior to issuance of a tree removal permit:* To the extent feasible, removal of any tree and/or other vegetation suitable for nesting of raptors shall not occur during the breeding season of March 15 and August 15. If tree removal must occur during the breeding season, all sites shall be surveyed by a qualified biologist to verify the presence or absence of nesting raptors or other birds. Pre-removal surveys shall be conducted within 15 days prior to start of work from March 15 through May 31, and within 30 days prior to the start of work from June 1 through August 15. The pre-removal surveys shall be submitted to the Planning and Zoning Division and the Tree Services Division of the Public Works Agency. If the survey indicates the potential presences of nesting raptors or other birds, the biologist shall determine an appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the CDFG, and will be based to a large extent on the nesting species and its sensitivity to disturbance. In general, buffer sizes of 200 feet for raptors and 50 feet for other birds should suffice to prevent disturbance to birds nesting in the urban environment, but these buffers may be increased or decreased, as appropriate, depending on the bird species and the level of disturbance anticipated near the nest.

These SCAs apply to all projects that involve a Tree Protection/Removal Permit for removal of a protected tree:

SCA Bio-6: Tree Removal Permit. *Prior to issuance of a demolition, grading, or building permit:* Prior to removal of any protected trees, per the Protected Tree Ordinance, located on the project site or in the public right-of-way adjacent to the project, the project applicant must secure a tree removal permit from the Tree Division of the Public Works Agency, and abide by the conditions of that permit.

SCA Bio-7: Tree Replacement Plantings. *Prior to issuance of a final inspection of the building permit:* Replacement plantings shall be required for erosion control, groundwater replenishment, visual screening and wildlife habitat, and in order to prevent excessive loss of shade, in accordance with the following criteria:

a. No tree replacement shall be required for the removal of nonnative species, for the removal of trees which is required for the benefit of remaining trees, or where insufficient planting area exists for a mature tree of the species being considered.

b. Replacement tree species shall consist of *Sequoia sempervirens* (Coast Redwood), *Quercus agrifolia* (Coast Live Oak), *Arbutus menziesii* (Madrone), *Aesculus californica* (California Buckeye) or *Umbellularia californica* (California Bay Laurel) or other tree species acceptable to the Tree Services Division.

c. Replacement trees shall be at least of twenty-four (24) inch box size, unless a smaller size is recommended by the arborist, except that three fifteen (15) gallon size trees may be substituted for each twenty-four (24) inch box size tree where appropriate.

d. Minimum planting areas must be available on site as follows:

    i. For *Sequoia sempervirens*, three hundred fifteen square feet per tree;

    ii. For all other species listed in #2 above, seven hundred (700) square feet per tree.

e. In the event that replacement trees are required but cannot be planted due to site constraints, an in lieu fee as determined by the master fee schedule of the city may be substituted for required replacement plantings, with all such revenues applied toward tree planting in city parks, streets and medians.

f. Plantings shall be installed prior to the issuance of a final inspection of the building permit, subject to seasonal constraints, and shall be maintained by the project applicant until established. The Tree

Reviewer of the Tree Division of the Public Works Agency may require a landscape plan showing the replacement planting and the method of irrigation. Any replacement planting which fails to become established within one year of planting shall be replanted at the project applicant's expense.

These SCAs apply to all projects that involve a Tree Protection/Removal Permit because a protected tree is located within 10' of construction:

SCA Bio-8: Tree Protection during Construction. *Prior to issuance of a demolition, grading, or building permit:* Adequate protection shall be provided during the construction period for any trees which are to remain standing, including the following, plus any recommendations of an arborist:

a. Before the start of any clearing, excavation, construction or other work on the site, every protected tree deemed to be potentially endangered by said site work shall be securely fenced off at a distance from the base of the tree to be determined by the City Tree Reviewer. Such fences shall remain in place for duration of all such work. All trees to be removed shall be clearly marked. A scheme shall be established for the removal and disposal of logs, brush, earth and other debris which will avoid injury to any protected tree.

b. Where proposed development or other site work is to encroach upon the protected perimeter of any protected tree, special measures shall be incorporated to allow the roots to breathe and obtain water and nutrients. Any excavation, cutting, filing, or compaction of the existing ground surface within the protected perimeter shall be minimized. No change in existing ground level shall occur within a distance to be determined by the City Tree Reviewer from the base of any protected tree at any time. No burning or use of equipment with an open flame shall occur near or within the protected perimeter of any protected tree.

c. No storage or dumping of oil, gas, chemicals, or other substances that may be harmful to trees shall occur within the distance to be determined by the Tree Reviewer from the base of any protected trees, or any other location on the site from which such substances might enter the protected perimeter. No heavy construction equipment or construction materials shall be operated or stored within a distance from the base of any protected trees to be determined by the tree reviewer. Wires, ropes, or other devices shall not be attached to any protected tree, except as needed for support of the tree. No sign, other than a tag showing the botanical classification, shall be attached to any protected tree.

d. Periodically during construction, the leaves of protected trees shall be thoroughly sprayed with water to prevent buildup of dust and other pollution that would inhibit leaf transpiration.

e. If any damage to a protected tree should occur during or as a result of work on the site, the project applicant shall immediately notify the Public Works Agency of such damage. If, in the professional opinion of the Tree Reviewer, such tree cannot be preserved in a healthy state, the Tree Reviewer shall require replacement of any tree removed with another tree or trees on the same site deemed adequate by the Tree Reviewer to compensate for the loss of the tree that is removed.

f. All debris created as a result of any tree removal work shall be removed by the project applicant from the property within two weeks of debris creation, and such debris shall be properly disposed of by the project applicant in accordance with all applicable laws, ordinances, and regulations.

These SCAs apply to all projects that require a Grading Permit, except for projects that involve construction on slopes that exceed 20%:

SCA Bio-9: Erosion and Sedimentation Control Plan. *Prior to any grading activities:*

a. The project applicant shall obtain a grading permit if required by the Oakland Grading Regulations pursuant to Section 15.04.660 of the Oakland Municipal Code. The grading permit application shall include an erosion and sedimentation control plan for review and approval by the Building Services Division. The erosion and sedimentation control plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to

lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading operations. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the Director of Development or designee. The plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.

Ongoing throughout grading and construction activities

b. The project applicant shall implement the approved erosion and sedimentation plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Building Services Division.

These SCAs apply to all projects that include the redevelopment or reuse of historically industrial or commercial buildings, or if the site has been identified in City records for hazardous materials such as the Permit Tracking System, or if the site has been identified on the State Cortese List:

SCA Bio-10: Best Management Practices for Soil and Groundwater Hazards. *Ongoing throughout demolition, grading, and construction activities.* The project applicant shall implement all of the following Best Management Practices (BMPs) regarding potential soil and groundwater hazards.

a. Soil generated by construction activities shall be stockpiled onsite in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state and federal agencies laws, in particular, the Regional Water Quality Control Board (RWQCB) and/or the Alameda County Department of Environmental Health (ACDEH) and policies of the City of Oakland.

b. Groundwater pumped from the subsurface shall be contained onsite in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies of the City of Oakland, the RWQCB and/or the ACDEH. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building (pursuant to the Standard Condition of Approval regarding Radon or Vapor Intrusion from Soil and Groundwater Sources

c. Prior to issuance of any demolition, grading, or building permit, the applicant shall submit for review and approval by the City of Oakland, written verification that the appropriate federal, state or county oversight authorities, including but not limited to the RWQCB and/or the ACDEH, have granted all required clearances and confirmed that the all applicable standards, regulations and conditions for all previous contamination at the site. The applicant also shall provide evidence from the City's Fire Department, Office of Emergency Services, indicating compliance with the Standard Condition of Approval requiring a Site Review by the Fire Services Division pursuant to City Ordinance No. 12323, and compliance with the Standard Condition of Approval requiring a Phase I and/or Phase II Reports.

These Development Standards apply to all projects that involve a Category III and IV Creek Protection permit:

SCA Bio-11: Creek Protection Plan.[2] *Prior to and ongoing throughout demolition, grading, and/or construction activities.*

a. The approved creek protection plan shall be included in the project drawings submitted for a building permit (or other construction-related permit). The project applicant shall implement the creek protection plan to minimize potential impacts to the creek during and after construction of the project. The plan shall fully describe in plan and written form all erosion, sediment, stormwater, and construction management measures to be implemented on-site.

b. If the plan includes a stormwater system, all stormwater outfalls shall include energy dissipation that slows the velocity of the water at the point of outflow to maximize infiltration and minimize erosion. The project shall not result in a substantial increase in stormwater runoff volume or velocity to the creek or storm drains.

SCA Bio-12: Regulatory Permits and Authorizations. *Prior to issuance of a demolition, grading, or building permit within vicinity of the creek.* Prior to construction within the vicinity of the creek, the project applicant shall obtain all necessary regulatory permits and authorizations from the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (RWQCB), California Department of Fish and Game, and the City of Oakland, and shall comply with all conditions issued by applicable agencies. Required permit approvals and certifications may include, but not be limited to the following:

a. U.S. Army Corps of Engineers (Corps): Section 404. Permit approval from the Corps shall be obtained for the placement of dredge or fill material in Waters of the U.S., if any, within the interior of the project site, pursuant to Section 404 of the federal Clean Water Act.

b. Regional Walter Quality Control Board (RWQCB): Section 401 Water Quality Certification. Certification that the project will not violate state water quality standards is required before the Corps can issue a 404 permit, above.

c. California Department of Fish and Game (CDFG): Section 1602 Lake and Streambed Alteration Agreement. Work that will alter the bed or bank of a stream requires authorization from CDFG.

SCA Bio-13: Creek Monitoring. *Prior to issuance of a demolition, grading, or building permit within vicinity of the creek.* A qualified geotechnical engineer and/or environmental consultant shall be retained and paid for by the project applicant to make site visits during all grading activities; and as a follow-up, submit to the Building Services Division a letter certifying that the erosion and sedimentation control measures set forth in the Creek Protection Permit submittal material have been instituted during the grading activities.

SCA Bio-14: Creek Landscaping Plan. *Prior to issuance of a demolition, grading, or building permit within vicinity of the creek.* The project applicant shall develop a final detailed landscaping and irrigation plan for review and approval by the Planning and Zoning Division prepared by a licensed landscape architect or other qualified person. Such a plan shall include a planting schedule, detailing plant types and locations, and a system for temporary irrigation of plantings.

a. Plant and maintain only drought-tolerant plants on the site where appropriate as well as native and riparian plants in and adjacent to riparian corridors. Along the riparian corridor, native plants shall not be disturbed to the maximum extent feasible. Any areas disturbed along the riparian corridor shall be replanted with mature native riparian vegetation and be maintained to ensure survival.

b. All landscaping indicated on the approved landscape plan shall be installed prior to the issuance of a Final inspection of the building permit, unless bonded pursuant to the provisions of Section 17.124.50 of the Oakland Planning Code.

[2] http://www.oaklandpw.com/creeks

c. All landscaping areas shown on the approved plans shall be maintained in neat and safe conditions, and all plants shall be maintained in good growing condition and, whenever necessary replaced with new plant materials to ensure continued compliance with all applicable landscaping requirements. All paving or impervious surfaces shall occur only on approved areas.

These Development Standards apply to all projects that involve a Creek Protection Permit and dewatering or diversion of water:

SCA Bio-15: Creek Dewatering and Aquatic Life. Prior to the start of, and ongoing throughout, any in-water construction activity.

a. If any dam or other artificial obstruction is constructed, maintained, or placed in operation within the stream channel, ensure that sufficient water is allowed to pass down channel at all times to maintain aquatic life (native fish, native amphibians, and western pond turtles) below the dam or other artificial obstruction.

b. The project applicant shall hire a biologist, and obtain all necessary State and federal permits (e.g. CDFG Scientific Collecting Permit), to relocate all native fish/native amphibians/pond turtles within the work site, prior to dewatering. The applicant shall first obtain a project-specific authorization from the CDFG and/or the USFWS, as applicable to relocate these animals. Captured native fish/native amphibians/pond turtles shall be moved to the nearest appropriate site on the stream channel downstream. The biologist/contractor shall check daily for stranded aquatic life as the water level in the dewatering area drops. All reasonable efforts shall be made to capture and move all stranded aquatic life observed in the dewatered areas. Capture methods may include fish landing nets, dip nets, buckets, and by hand. Captured aquatic life shall be released immediately in the nearest appropriate downstream site. This condition does not allow the take or disturbance of any state or federally listed species, nor state-listed species of special concern, unless the applicant obtains a project specific authorization from the CDFG and/or the USFWS, as applicable.

SCA Bio-16: Creek Dewatering and Diversion. *Prior to the start of any in-water construction activities.* If installing any dewatering or diversion device(s), the project applicant shall develop and implement a detailed dewatering and diversion plan for review and approval by the Building Services Division. All proposed dewatering and diversion practices shall be consistent with the requirements of the Streambed Alteration Agreement issued by the California Department of Fish and Game.

a. Ensure that construction and operation of the devices meet the standards in the latest edition of the Erosion and Sediment Control Field Manual published by the Regional Water Quality Control Board (RWQCB).

b. Construct coffer dams and/or water diversion system of a non-erodible material which will cause little or no siltation. Maintain coffer dams and the water diversion system in place and functional throughout the construction period. If the coffer dams or water diversion system fail, repair immediately based on the recommendations of a qualified environmental consultant. Remove devices only after construction is complete and the site stabilized.

c. Pass pumped water through a sediment settling device before returning the water to the stream channel. Provide velocity dissipation measures at the outfall to prevent erosion.

The SCA below applies to all new construction, including telecommunication towers, which include large uninterrupted expanses of glass that account for more than 40% of any one side of the building's exterior and at least one of the following:

- The project is located immediately adjacent to a substantial water body (i.e. Oakland Estuary, San Francisco Bay, Lake Merritt or other substantial lake, reservoir, or wetland); OR

- The project is located immediately adjacent to a substantial recreation area or park (i.e. Region-Serving Park, Resource Conservation Areas, Community Parks, Neighborhood Parks, and Linear Parks and Special Use Parks and generally over 1 acre in size), which contains substantial vegetation, or
- The project includes a substantial vegetated or green roof (roofs with growing medium and plants taking the place of conventional roofing, such asphalt, tile, gravel, or shingles), but excluding container gardens.

SCA Bio-17: Bird Collision Reduction. *Prior to issuance of a building permit and ongoing.* The project applicant, or his or her successor, including the building manager or homeowners' association, shall submit plans to the Planning and Zoning Division, for review and approval, indicating how they intend to reduce potential bird collisions to the maximum feasible extent. The applicant shall implement the approved plan, including all mandatory measures, as well as applicable and specific project Best Management Practice (BMP) strategies to reduce bird strike impacts to the maximum feasible extent.

a. Mandatory measures include **all** of the following:

   i. Comply with federal aviation safety regulations for large buildings by installing minimum intensity white strobe lighting with three second flash instead of blinking red or rotating lights.

   ii. Minimize the number of and co-locate rooftop-antennas and other rooftop structures.

   iii. Monopole structures or antennas shall not include guy wires.

   iv. Avoid the use of mirrors in landscape design.

   v. Avoid placement of bird-friendly attractants (i.e. landscaped areas, vegetated roofs, water features) near glass.

b. Additional BMP strategies to consider include the following:

   i. Make clear or reflective glass visible to birds using visual noise techniques. Examples include:

      1. Use of opaque or transparent glass in window panes instead of reflective glass.
      2. Uniformly cover the outside clear glass surface with patterns (e.g., dots, decals, images, abstract patterns). Patterns must be separated by a minimum 10 centimeters (cm).
      3. Apply striping on glass surface. If the striping is less than 2 cm wide it must be applied vertically at a maximum of 10 cm apart (or 1 cm wide strips at 5 cm distance).
      4. Install paned glass with fenestration patterns with vertical and horizontal mullions of 10 cm or less.
      5. Place decorative grilles or louvers with spacing of 10 cm or less.
      6. Apply one-way transparent film laminates to outside glass surface to make the window appear opaque on the outside.
      7. Install internal screens through non-reflective glass (as close to the glass as possible) for birds to perceive windows as solid objects.
      8. Install windows which have the screen on the outside of the glass.
      9. Use UV-reflective glass. Most birds can see ultraviolet light, which is invisible to humans.

10. If it is not possible to apply glass treatments to the entire building, the treatment should be applied to windows at the top of the surrounding tree canopy or the anticipated height of the surrounding vegetation at maturity.

ii. Mute reflections in glass. Examples include:

1. Angle glass panes toward ground or sky so that the reflection is not in a direct line-of-sight (minimum angle of 20 degrees with optimum angle of 40 degrees).
2. Awnings, overhangs, and sunshades provide birds a visual indication of a barrier and may reduce image reflections on glass, but do not entirely eliminate reflections.

iii. Reduce Light Pollution. Examples include:

1. Turn off all unnecessary interior lights from 11 p.m. to sunrise.
2. Install motion-sensitive lighting in lobbies, work stations, walkways, and corridors, or any area visible from the exterior and retrofitting operation systems that automatically turn lights off during after-work hours.
3. Reduce perimeter lighting whenever possible.

iv. Institute a building operation and management manual that promotes bird safety. Example text in the manual includes:

1. Donation of discovered dead bird specimens to authorized bird conservation organization or museums to aid in species identification and to benefit scientific study, as per all federal, state and local laws.
2. Production of educational materials on bird-safe practices for the building occupants.
3. Asking employees to turn off task lighting at their work stations and draw office blinds or curtains at end of work day.
4. Schedule nightly maintenance during the day or to conclude before 11 p.m., if possible.

Impacts, Standard Conditions of Approval and Mitigation Measures

This section discusses potential impacts to biological resources that could result from implementation of the proposed Project. It presents the thresholds of significance, describes the approach to the analysis, and identifies potential impacts and mitigation measures, as appropriate.

Thresholds of Significance

The proposed Project would have a significant impact on the environment if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

3. Have a substantial adverse effect on federally protected wetlands (as defined by section 404 of the Clean Water Act) or state protected wetlands, through direct removal, filling, hydrological interruption, or other means;
4. Substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites;
5. Fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan;
6. Fundamentally conflict with the City of Oakland Tree Protection Ordinance (Oakland Municipal Code (OMC) Chapter 12.36) by removal of protected trees under certain circumstances [NOTE: Factors to be considered in determining significance include the number, type, size, location and condition of (a) the protected trees to be removed and/or impacted by construction and (b) protected trees to remain with special consideration given to native trees. Protected trees include *Quercus agrifolia* (California or coast live oak) measuring four inches diameter at breast height (dbh) or larger and any other tree measuring nine inches dbh or larger except eucalyptus and *Pinus radiata* (Monterey pine); provided, however, that Monterey pine trees on City property and in development-related situations where more than five Monterey pine trees per acre are proposed to be removed are considered to be protected trees.]; or
7. Fundamentally conflict with the City of Oakland Creek Protection Ordinance (OMC Chapter 13.16) intended to protect biological resources. [NOTE: Although there are no specific, numeric/quantitative criteria to assess impacts, factors to be considered in determining significance include whether there is substantial degradation of riparian and/or aquatic habitat through (a) discharging a substantial amount of pollutants into a creek, (b) significantly modifying the natural flow of the water, (c) depositing substantial amounts of new material into a creek or causing substantial bank erosion or instability, or (d) adversely impacting the riparian corridor by significantly altering vegetation or wildlife habitat.]

Approach to Analysis

This biological resources analysis was prepared by conducting the following:

- Two reconnaissance-level field surveys of the Project Area in February 2013 and November 2013;
- Review of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) species occurrence records for the Project Area and 5 miles around the Project Area (CDFW 2013);
- Review of USFWS designated critical habitat mapping program data for critical habitat within the Oakland East, Oakland West, Richmond and San Leandro USGS 7.5-minute quadrangles (USFWS 2013);
- Review of the United States Fish and Wildlife Service (USFWS) Federally Endangered and Threatened Species List for the Oakland East, Oakland West, Richmond and San Leandro USGS 7.5-minute quadrangles (USFWS 2013);
- Review of California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants records for the Oakland East, Oakland West, Richmond and San Leandro U.S. Geographical Survey (USGS) 7.5-minute quadrangles (CNPS 2013);

- Review of available surveys, monitoring reports, and other data from a variety of groups collecting biological information in the region, including, but not limited to: CDFW, CNPS East Bay Chapter, EBRPD, Golden Gate Audubon Society, Golden Gate Raptor Observatory, NOAA Fisheries, Oakland Museum of California, Port of Oakland, San Francisco Bay Bird Observatory, San Francisco Estuary Invasive Spartina Project, Save the Bay, and USFWS; and
- Review of current and historic aerial imagery.

The implementation of the proposed Project and the approval of future development within the Project Area would be subject to the City's SCAs. This biological resource analysis includes the application of the SCAs to reduce potentially significant impacts to a less than significant level and the identification of additional mitigation measures in instances when the SCAs would not fully mitigate potentially significant impacts.

Biologically Sensitive Components of the Project

Coliseum District

The sensitive biological features of the Coliseum District are Elmhurst Creek and Damon Slough. Under the proposed Project, three treatments of Elmhurst Creek and Damon Slough are possible, as shown in **Figure 4.3-3** and described below:

Option A

- Elmhurst Creek – No change to Elmhurst Creek. In this option, the alignment and condition of Elmhurst will Creek will remain unchanged, whereas the areas surrounding it are upgraded with the new Coliseum complex and parking areas. No new bridges will span the creek, so all circulation must use existing crossings.
- Damon Slough – Damon Slough would be subject of a creek restoration effort intended to enhance and increase the habitat value of this segment of the creek. The design parameters of the creek restoration effort would include retaining the overall flow capacity (volume) of the primary creek channel to maintain its flood control function, establishing a low-flow channel within which stormwater runoff would be conveyed to the Bay, and creating an enhanced and widened tidal slough/mud flat habitat between the low-flow and high-flow channels.
- "Cruise America" parcel[3] – Removal of paving and buildings from the property, then restored to a more natural condition by seeding this site with common, upland coastal plant species similar to those established in selected locations along the banks of Damon Slough. The site would be visible from the proposed Ballpark and would provide aesthetic value to the area as compared to the current parking lot.

Option B

- Elmhurst Creek – Elmhurst Creek stays in its current alignment but with pedestrian and vehicular bridges constructed to provide access between the parking areas and the proposed Coliseum. These bridges must be "clear spans" that do not have any structures resting in the water or the creek

[3] A City of Oakland-owned site at 796 66th Avenue.

shoreline. Aesthetic and possibly habitat enhancements will also occur. Permitting for this alternative may require an expansion of the creek width.

- Damon Slough – Same as Option A, plus additional upland restoration of riparian habitat beyond the tidal slough to create a more functional habitat area, fenced to prevent public access.
- "Cruise America" parcel – Same as Option A

Option C

- Elmhurst Creek – The preferred option is to realign Elmhurst Creek far enough to the south to provide clearance for construction of the new Stadium. The preferred alignment for Elmhurst Creek would be capture the creek within an underground culvert at the point where it enters into the Coliseum District from a culvert under Hegenberger Road, and to continue the creek within a new culvert following along or within the Hegenberger Road right-of-way. The underground culvert would then daylight on the east side of I-880 near the confluence of several other local drainages near the Hegenberger Road interchange. This option would enable the flood control function of Elmhurst Creek to continue to operate as it currently exists, with flood flow volumes entering San Leandro Bay at the current Elmhurst Creek outfall. The tidal ebbs and flows in Elmhurst Creek would be limited at the existing I-880 culvert.
- Damon Slough – Same as Option A
- "Cruise America" parcel – The 8-acre property will be transformed into a tidal wetland, fenced off from public access, designed to be self-sustaining in hydrological and habitat function and –if possible – visually appealing when viewed from the Ballpark. At a 2:1 ratio, approximately 2.4 acres of the new wetland will serve as mitigation for the removal of 1,500 feet of Elmhurst Creek.

The work within and adjacent to Damon Slough in Options A, B and C and the work in Elmhurst Creek under Option C could cause indirect or direct impacts to aquatic species that may enter Damon Slough or Elmhurst Creek or that are in San Leandro Bay by mobilizing sediments.

In addition, under Option C the re-alignment of Elmhurst Creek would result in the permanent removal of a section of creek, which would be replaced by a new segment connecting to Damon Slough. The de-watering and filling of the creek could cause direct impacts to any species present within the waterway and cause indirect impacts by releasing large amounts of sediments downstream into lower Elmhurst Creek.

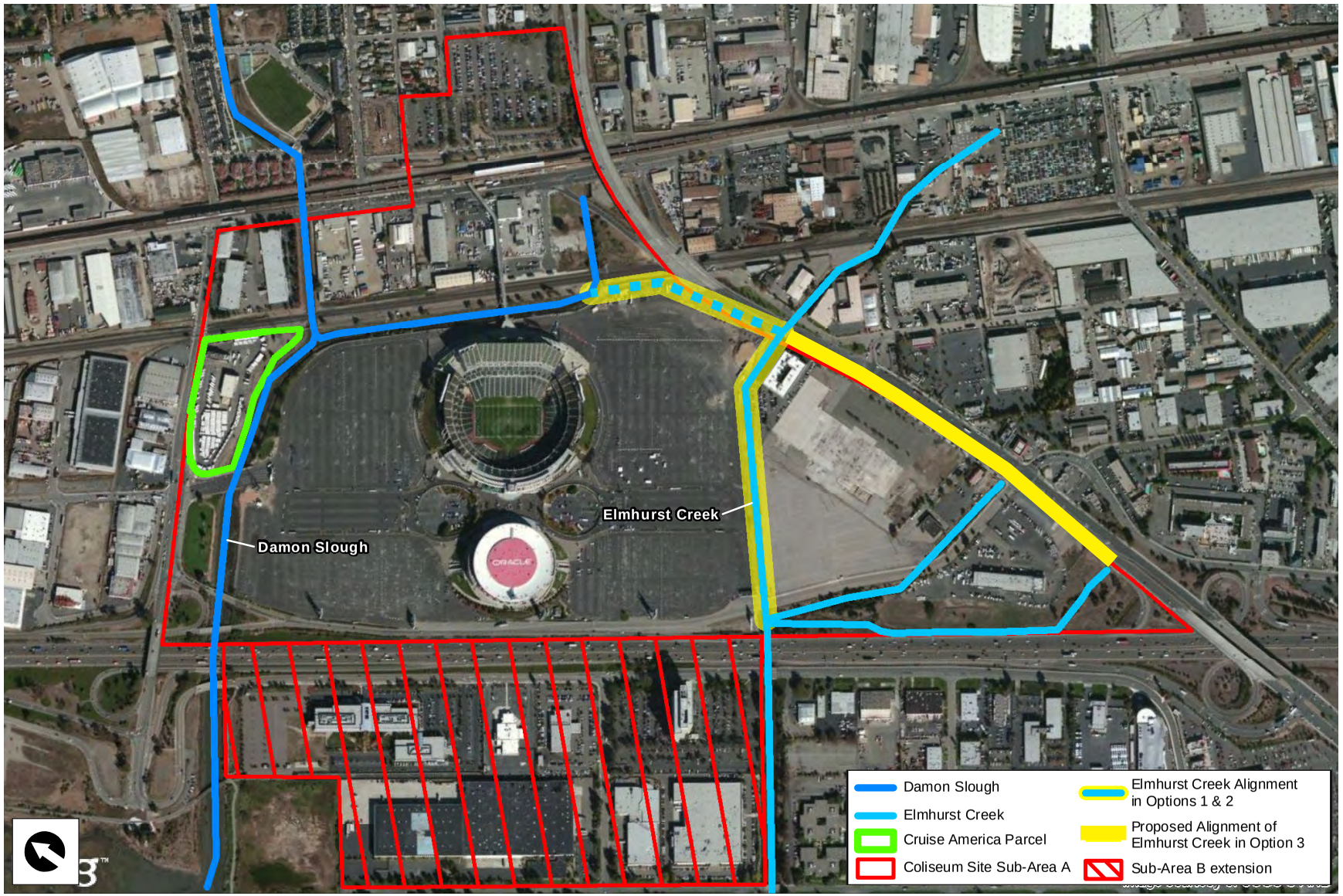


Figure 4.3-3
Damon Slough and Elmhurst Creek Improvement Options

Source: Garcia & Associates (January 2014)

Plan Buildout

Besides the sensitive features in the Coliseum District, the Project Area includes Edgewater Seasonal Wetland, the proposed new freshwater marsh, the proposed new bay inlet, and general proximity to creeks, sloughs and open water (**see Figure 4.3-4**). Furthermore, the entire Project Area is adjacent to creeks, sloughs and San Leandro Bay.

Plan Buildout includes the proposed development (removal) of Edgewater Seasonal Wetland in Sub-Area B as the site for new waterfront residential use. The Edgewater Seasonal Wetland comprises approximately 8 acres of Coastal and Valley Freshwater Marsh. This site was historically a tidal salt marsh and mudflat that was previously filled and developed. In the year 2000, this site was designated as a wetlands mitigation site for the Oakland Airport Runway 11-29 Rehabilitation Project. That mitigation program included recreating and enhancing wetland features on the site. The restored Edgewater Seasonal Wetland now holds water six or seven months of the year and is used by migratory birds along the Pacific Flyway. This site is discussed in detail above in the Existing Conditions.

To mitigate for habitat lost at the Edgewater Seasonal Wetland, Plan Buildout includes the proposed creation of approximately 15 acres of freshwater seasonal wetland as a Coastal and Valley Freshwater Marsh habitat. The new marsh would be located in Sub-Area E. The proposed parcel is adjacent to existing coastal salt marsh and would increase the total acreage of contiguous breeding and wintering habitat along the eastern shoreline of San Leandro Bay. This site could also have a hydrologic connection to the Bay and have tidal influence and be restored as a tidal coastal salt marsh. Restoration to a tidal coastal salt marsh may benefit California clapper rail, which are present at the adjacent Damon Marsh and the nearby Arrowhead Marsh, by providing foraging and breeding habitat. This could also increase habitat for the endangered salt marsh harvest mouse.

Plan Buildout also includes proposed creation of a new Bay inlet, which would create approximately 12 acres of open water within San Leandro Bay. This inlet would be created by excavating/dredging portions of Sub-Area B (currently the City of Oakland Public Works Department corporation yard) and allowing Bay waters to enter. This excavation would result in a removal of fill and an increase in Bay volume and surface area. Existing infrastructures in this area would be removed and/or modified by the surrounding development. The new inlet is not proposed as a navigable waterway (i.e., no ferries or boat docks), but would include intertidal mudflats that would support shorebird foraging and possibly high-tide roosting habitat. The primary purpose of the new bay Inlet would be to create new waterfront edge within this Sub-Area as an attraction and amenity for new development.

Figure 4.3-4
Sensitive Biological Features in the Plan Buildout Area

Source: Garcia & Associates (January 2014)

Special Status Species

Coliseum District

Impact Bio-1A: New development within the Coliseum District, particularly the proposed realignment of Elmhurst Creek and construction work related to enhancements of Damon Slough, could have a substantial adverse effect, either directly or through habitat modifications on identified candidate, sensitive, or special status species. **(LTS with MM)**

Developed and ruderal landscapes comprise approximately 94% of the Project Area. Most listed candidate, sensitive or special status species addressed in this analysis are more likely to be found in natural areas adjacent to the Coliseum District than elsewhere in the Project Area. Construction activities in the Coliseum District could potentially directly impact any of the listed species included for study in this EIR by harassing or causing injury or death. Construction activities could potentially indirectly impact these species by reducing the quality of their habitats or attracting predators.

The fill material which constitutes much of the Coliseum District includes organic and inorganic contaminants (see Chapter 4.7 Hazards and Hazardous Materials). There is potential for these sediments to be released at concentrations high enough to cause detectable increased loading of contaminants to Bay waters. Therefore, development of the Coliseum District could have indirect impacts on species which inhabit the surrounding natural landscapes and open water if construction of the proposed Project causes sediments or contaminants to move out to the surrounding creeks and sloughs, marshes, or open water.

Species considered as special status and that have potential to occur within the Coliseum District, and to be exposed to Project impacts, include the following State or Federally Threatened or Endangered and State Fully Protected Species with moderate or high potential to occur at the Site (see Appendices 4.3A and 4.3B for full list of species considered):

- North American green sturgeon, southern DPS
- Steelhead, Central California Coast DPS
- Salt marsh harvest mouse
- California black rail
- California brown pelican
- California clapper rail
- California least tern
- Peregrine falcon
- Western snowy plover

The State or Federally Threatened or Endangered and State Fully Protected Species with only a low potential to occur at the Coliseum District include:

- Chinook salmon, Central Valley spring run ESU
- Chinook salmon, Sacramento River winter run ESU
- Longfin smelt

Other Special Status species that have also been considered in this analysis include:

- State Managed Fishery: Pacific herring
- Marine Mammals: California sea lion, harbor seal
- Terrestrial Mammals: salt marsh wandering shrew, pallid bat, silver-haired bat, Townsend's big-eared bat
- Raptors: American kestrel, burrowing owl, Cooper's hawk, Northern harrier, osprey, red-tailed hawk, white-tailed kite
- Other migratory and nesting Birds: Alameda song sparrow, California gull, double-crested cormorant, great blue heron, great egret, redhead, San Francisco saltmarsh common yellowthroat, snowy egret
- Plants: Marin knotweed and saline clover (both of these species have low potential to occur within the Project Area and they are not State or federally listed, but both species are associated with salt marsh habitat.

Special Status Fish and Marine Mammals

The open waters surrounding the Project Area are identified as critical habitat for steelhead trout and green sturgeon. The State-threatened longfin smelt may also be found in these waters, most commonly in the winter months (Robinson and Greenfield 2011). Although not expected, it is possible that the Central Valley Spring Run Chinook Salmon, Sacramento River Winter Run Chinook Salmon, and Central California Coast Steelhead could also potentially use San Leandro Bay for foraging. These waters are also considered essential fish habitat for Fishery Management Plan-managed fish taxa and contain spawning and foraging habitat for Pacific herring. Pacific harbor seals may be found year-round in the Bay waters, and California sea lions may occasionally occur through most of the year.

It is unlikely that any special status fish would enter either Elmhurst Creek or Damon Slough, as those water bodies are not connected to habitat of any quality upstream, although that is not a certainty. Additionally, Damon Slough is listed as an impaired water body by the EPA due to high levels of trash.

In-water work within the Coliseum District could cause direct impacts to any individuals of species that nonetheless are present within the waters and may cause indirect impacts by releasing large amounts of sediments downstream and into the Bay during construction.

Special Status Terrestrial Mammals

Outside of the Coliseum District, but hydrologically connected to it, are areas of coastal salt marsh that may support salt marsh harvest mouse and the salt marsh wandering shrew. The fill material which constitutes the Coliseum District includes organic and inorganic contaminants. There is potential for these sediments to be released at concentrations high enough to cause detectable increased loading of contaminants to salt marsh habitat. Development of the Coliseum District could impact the salt marsh harvest mouse or salt marsh wandering shrew if sediments or contaminants, caused by new construction, flowed out to the open water from Damon Slough and Elmhurst Creek, which then affected Damon Marsh or Arrowhead Marsh.

The State and federally endangered salt marsh harvest mouse is associated with pickleweed. Impacts to pickleweed, including trampling or driving on pickleweed, could cause direct impacts to salt marsh harvest mice.

Three bat species, the Townsend's big-eared bat, pallid bat and silver haired bat, have the potential to roost in structures and trees, and the numerous creeks, sloughs, and open water provide suitable foraging habitat. The demolition of the existing Coliseum and other structures within the Coliseum District could impact bat species if roosting individuals are present or if maternity roosts have been established.

Special Status Birds

The State or federally threatened or endangered or State fully protected species with potential to occur within the vicinity of the Coliseum District include California clapper rail, California black rail, California brown pelican, California least tern, peregrine falcon, and western snowy plover. Of these listed birds, the California clapper rail and California black rail are expected to nest in the adjacent coastal salt marshes. The other four listed species are expected to forage in the vicinity. There is some potential for peregrine falcons to nest on tall man-made structures near the Bay, but none have been documented to nest in the Coliseum District.

Other raptors which may occur in the Coliseum District are the American kestrel, burrowing owl, Cooper's hawk, northern harrier, osprey, red-tailed hawk, and white-tailed kite. Mature trees and tall buildings and other man-made structures may be used for nesting, roosting and perching by birds, especially raptors. The removal of buildings is not considered significant loss of habitat, especially as new buildings will replace those that are removed.

Other special status birds which may occur in the Coliseum District are the Alameda song sparrow, California gull, double-crested cormorant, great blue heron, great egret, redhead, San Francisco saltmarsh common yellowthroat, and snowy egret. The Alameda song sparrow and San Francisco saltmarsh common yellowthroat are known to nest in in tidal coastal salt marshes along the edges of San Francisco Bay. All forage in the vicinity of the Coliseum District. Damon slough, Elmhurst Creek and San Leandro Creek provide foraging for the great blue heron, great egret, snowy egret, and other species. Adjacent marshes, creeks, sloughs and Bay waters also provide foraging habitat for most of these species.

Development at the Coliseum District could have indirect impacts on the fish-eating bird species, waterfowl, and salt marsh-associated species if construction caused sediments or contaminants to flow out to the open water from work in Damon Slough and Elmhurst Creek, which then affected San Leandro Bay, Damon Marsh or Arrowhead Marsh. Development at the Coliseum District could also have direct impacts on birds from the construction activity itself through disturbance from noise, truck traffic and works. However, this area is already an urban environment with existing sports facilities and business parks.

The California clapper rail, California black rail, Alameda song sparrow, and San Francisco saltmarsh common yellowthroat are all associated with salt marsh habitat. The proposed Project would increase the number of people using this area and other existing trails of the MLK shoreline. This could result in increased disturbance and harassment of special status or otherwise protected wildlife by people and their dogs when compared to existing conditions where the trails are only moderately used.

Pet and feral cats can cause significant impacts on resident and migratory birds, especially shorebirds, through harassment, injury or death. The existing uses of the area include industrial and commercial uses and the area presumably currently hosts a population of feral and possibly pet cats. It is not possible to quantify the existing predation pressure on birds from cats, and it is unclear how this predation pressure will change through implementation of the proposed Project.

Standard Conditions of Approval

Work in Area Subject to Additional Agency Jurisdiction

Developed and ruderal landscapes comprise approximately 94% of the Coliseum District and no regional, state or federal agency jurisdiction is expected to apply to development throughout most of the Coliseum District. However, work associated with realignment and culverting of Elmhurst Creek and enhancement of Damon Slough will be subject to the jurisdiction of several additional agencies including the RWQCB, California Fish and Wildlife, the US Army Corps of Engineers and the US Fish and Wildlife Service. Pursuant to implementation of SCA Bio-12: Regulatory Permits and Authorizations, it is anticipated that these regulatory agencies will require the following, or similar, conditions pursuant to their permits or authorizations to ensure that potential impacts to sensitive status species are minimized:

- Provide a qualified biological monitor to be present during construction work within waterways and work within 100 feet of creeks or salt marsh habitat to monitor potential impacts to sensitive habitats and/or listed and protected species; If a listed or protected species is encountered during construction, work shall be stopped immediately at that location, the appropriate agency or agencies (USFWS, NOAA Fisheries and/or CDFW) shall be notified, and work shall not resume at that location prior to the agencies' approval or as agreed to in prior consultation with the agencies;
- Worker Environmental Awareness Training (WEAT) shall be developed and presented to all construction personnel before they start work on the proposed Project. The program shall summarize relevant laws and regulations that protect biological resources, discuss sensitive habitats and special status species with the potential to occur in the work zone, explain the role and authority of the biological monitors, and review applicable avoidance and minimization measures to protect sensitive species and habitats;
- During construction, all trash, including food-related trash which can attract wildlife or increase predators, shall be contained in sealed containers and removed from the work site daily. Following construction, all construction debris shall be removed from work areas;
- Construction access, staging, storage, and parking areas shall be located on ruderal or developed lands to the extent possible. Vehicle travel adjacent to wetlands and riparian areas shall be limited to existing roads and designated access paths. Sensitive natural communities (i.e., wetlands, marshes, waters, riparian zones, and coastal scrub) shall be conspicuously marked in the field to minimize impacts on these areas, and work activities shall be limited to outside the marked areas; and
- Upon completion of construction work, all temporarily disturbed natural areas, including stream/slough banks, shall be returned to original contours to the extent feasible. Affected marshes, banks or channels shall be stabilized prior to the rainy season and/or prior to reestablishing flow. Vegetation shall be re-established as appropriate.
- Post construction, on-leash restrictions for dogs and potentially fencing may be required along areas where publicly accessible trails are adjacent to sensitive biological resources (e.g., salt marsh, wetlands, and known breeding grounds).
- Public trails will likely be required to include educational signage informing the public of sensitive habitats, and the need to protect them.

Implementation of SCA Bio-12 would generally reduce most impacts on special status species that might otherwise result from construction activity within and near sensitive species habitat to a less than significant level.

Downstream Sediments and Contamination

Potential impacts associated with construction activity at the Coliseum District causing sediments or contaminants to move out to the surrounding creeks and sloughs, marshes, or open water would be reduced through implementation of City of Oakland SCAs including, but not limited to SCA Bio-9: Erosion and Sedimentation Control Plan, SCA Bio-10: Best Management Practices for Soil and Groundwater Hazards, SCA Bio-11: Creek Protection Plan, SCA Bio-13: Creek Monitoring, SCA Bio-14: Creek Landscaping, SCA Bio-15: Creek Dewatering and Aquatic Life, and SCA Bio-16: Creek Dewatering and Diversion. Implementation of these SCAs would substantially reduce impacts on special status species (fish, marine mammal species and mammal species which inhabit salt marshes) that could otherwise be adversely affected by downstream sedimentation and contamination resulting from work adjacent to, and within the creek corridors.

Direct Impacts to Birds and Bats

Indirect impacts on special status birds and bats could occur from construction activity through disturbance from noise, truck traffic and works, as well as direct impacts through removal of nesting habitat. Implementation of SCA Bio-1: Operational Noise-General, SCA Bio-2: Pile Driving and Other Extreme Noise Generators, SCA Bio-4: Tree Removal Permit on Creekside Properties, SCA Bio-5: Tree Removal During Breeding Season, SCA Bio-6: Tree Removal Permit, SCA Bio-7: Tree Replacement Plantings, SCA Bio-8: Tree Protection During Construction, SCA Bio-11: Creek Protection Plan, and SCA Bio-14: Creek Landscaping would reduce impacts on special status bird species.

In addition, to reduce potential impacts to special status bat species, the consulting biologists recommend the following additional measures be implemented in furtherance of SCA Bio-5: Tree Removal during Breeding Season:

- Potential direct and indirect disturbances to bats shall be identified by locating colonies and instituting protective measures prior to tree removal and building dismantling and demolition activities. No more than two weeks in advance of tree removal, demolition of buildings onsite, or initiation of construction within 100 feet of trees or structures providing potential bat roosting sites, a qualified bat biologist (e.g., a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle and collect bats) shall conduct pre-construction surveys for bat roosts. No activities that could disturb active roosts shall proceed prior to the completed surveys.
- If a bat maternity colony is located within the Project site during pre-construction surveys, the Project shall be redesigned to avoid impacts if feasible, and a no-disturbance buffer acceptable in size to the CDFW shall be created around the roost. Bat roosts (maternity or otherwise) initiated during construction are generally presumed to be unaffected by increased noise, vibration, or human activity, and no buffer is necessary as long as roost sites are not directly altered or destroyed. However, the "take" of individuals is still prohibited at any time.
- If there is a maternity colony present and the Project cannot be redesigned to avoid removal of the tree or structure inhabited by the bats, demolition of that tree or structure shall not commence until after young are flying (i.e., after July 31, confirmed by a qualified bat biologist) or before maternity colonies form the following year (i.e. prior to March 1).

- If a non-maternity roost must be removed as part of the Project, the non-maternity roost shall be evicted prior to building/tree removal by a qualified biologist using methods such as making holes in the roost to alter the air-flow or creating one-way funnel exits for the bats.
- If significant (e.g., maternity roosts or large non-maternity roost sites) bat roosting habitat is destroyed during building/tree removal, artificial bat roosts shall be constructed in an undisturbed area in the Project site vicinity away from human activity and at least 200 feet from Project demolition/construction activities. The design and location of the artificial bat roost(s) shall be determined by a qualified bat biologist.

If approved, new development at the Coliseum District would be required to comply with all SCAs identified above, including the biologist's recommendations for roosting bat surveys in furtherance of SCA Bio-5, to ensure reduction of potential impacts to birds, bats and their habitat to a level of less than significant.

Mitigation Measures

Because of the special sensitivity and extended nesting and migratory period associated with California clapper rails, California black rails and raptors, the following mitigation measure is recommended to replace and/or supersede certain provisions of SCA Bio-5: Tree Removal during Breeding Season:

MM Bio 1A-1: Pre-construction Nesting Bird Surveys and Buffers. A qualified biologist shall conduct pre-construction surveys for construction activities between February 15th and September 30th throughout the Coliseum District to identify and subsequently avoid nesting areas for special-status and migratory bird species. Surveys shall be designed and of sufficient intensity to document rail and raptor nesting within 500 feet of planned work activities and within 50 feet for passerine nesting activity.

a) Construction activities within 500 feet of Damon Marsh and Arrowhead Marsh shall be conducted during the period from August 1 to January 31 to protect potentially nesting California clapper rail, California black rail, Alameda song sparrow and San Francisco saltmarsh common yellowthroat.

b) If California clapper rails, California black rails or raptors are found to be nesting within or adjacent to the planned work area, a minimum 100-foot wide buffer shall be maintained between construction activities and the nest location.

c) For Alameda song sparrow, San Francisco saltmarsh common yellowthroat and all other protected birds a 50-foot buffer shall be maintained.

d) Buffer zones may be reduced in consultation with a qualified biologist.

e) Buffers shall be maintained until the young have fledged and are capable of flight or by September 30.

The open waters surrounding the Project Area are identified as critical habitat for steelhead trout. While it is unlikely that steelhead or any other special status fish would enter either Elmhurst Creek or Damon Slough, any in-water work within these drainage channels at the Coliseum District could cause indirect impacts by releasing large amounts of sediments during construction. Therefore, the following additional mitigation measure is recommended:

MM Bio 1A-2: In-water Work Restrictions. In-water construction shall be confined to the period between June 1 and November 30 to protect migrating steelhead from any unanticipated discharges. In-water construction activities shall be confined to low tide cycles where it allows work to be performed outside of the water to the extent practical.

a) During in-water construction, any dewatered areas, temporary culverts and temporary cofferdams shall be limited to the minimum area necessary.

b) Pumps used for dewatering shall have NOAA Fisheries-approved fish screens installed to minimize intake of fish into pumps. Diversion structures shall be left in place until all in-water work is completed.

c) Temporary culverts and all construction materials and debris shall be removed from the affected area prior to re-establishing flow and prior to the rainy season.

The following additional mitigation measure is recommended to fully address potential impacts on special status terrestrial mammals:

MM Bio 1A-3: Salt Marsh Protection. All core salt marsh harvest mouse habitat (pickleweed-dominated salt marsh habitat within Damon Marsh and Arrowhead Marsh) areas shall be avoided and protected. If construction activities are within 100 feet of these areas, site-specific buffers shall be established in coordination with a qualified biologist, approved by USFWS or CDFW as appropriate.

a) Buffers shall be designed to preclude changes to water and soil salinity and flooding/inundation regime. The buffers shall be at least 100 feet wide or extend to the current boundary of existing roads or development (includes vacant but graded lots and filled building pads). The qualified biologist may modify these buffers depending on site conditions.

b) The construction work area shall be fenced on the side closest to salt marsh habitat to delineate the extent of construction, preclude construction personnel and equipment from entering non-work areas, and prevent debris from entering avoided habitats. The construction boundary fencing may also inhibit movement of species such as the salt marsh harvest mouse and salt-marsh wandering shrew into the construction area.

c) The qualified biologist shall be present during work on-site until the construction barrier fencing is installed, instruction of workers has been conducted, and any direct habitat disturbance has been completed. After that time, the contractor or permittee shall designate a person to monitor on-site compliance with all minimization measures.

d) The monitor and qualified biologist shall have the authority to halt construction that might result in impacts that exceed anticipated levels

Resulting Level of Significance

The majority of impacts to special status species resulting from construction and operations at the Coliseum District would be reduced to less than significant through implementation of SCA Bio-12: Regulatory Permits and Authorizations, as well as implementation of all other City of Oakland SCAs related to direct and indirect impacts to special status species and habitat as described above.

Because of certain especially sensitive habitat and species presence within or adjacent to the Coliseum District, additional mitigation measures are recommended to fully reduce impacts to these species and their habitat. With implementation of all SCAs, as well as Mitigation Measures Bio 1A-1, 1A-2 and 1A-3,

potential impacts to special status species and their habitats will be reduced to a level of **less than significant.**

Plan Buildout

Impact Bio-1B: Future development pursuant to Plan Buildout could have a substantial adverse effect, either directly or through habitat modifications, on candidate, sensitive or special status species. **(SU)**

As in the Coliseum District, construction activities pursuant to Plan Buildout could potentially directly impact any individual of those species included for study in this EIR by harassing or causing injury or death. Construction activities could potentially indirectly impact those species by reducing the quality of their habitats or attracting predators. Also, as discussed under Impact Bio-1A, the fill material which constitutes much of the Project Area includes organic and inorganic contaminants. There is potential for these sediments to be released at concentrations high enough to cause detectable increased loading of contaminants to Bay waters. Therefore, future development pursuant to Plan Buildout could have indirect impacts on species which inhabit the surrounding natural landscapes and open water, if, during construction, sediments or contaminants were allowed to move out to the surrounding creeks and sloughs, marshes, or open water.

Indirect impacts on special status birds and bats could occur from construction activity through disturbance from noise, truck traffic and works, as well as direct impacts through removal of nesting habitat.

Direct impacts to special status species could also occur pursuant to the proposed creation of a new Bay inlet, which would create approximately 12 acres of open water within San Leandro Bay. This inlet would be created by excavating/dredging portions of Sub-Area B, and allowing Bay waters to enter. The new inlet would include intertidal mudflats that would support shorebird foraging and possibly high-tide roosting habitat, but the primary purpose of the new bay Inlet would be to create new waterfront edge within this Sub-Area as an attraction and amenity for new development.

Additionally, direct and indirect impacts to sensitive species and their habitat would occur under the proposal to fill the existing approximately 8 acres of Coastal and Valley freshwater marsh at the Edgewater Seasonal Wetland, and to develop this site for new waterfront residential uses. The Edgewater Seasonal Wetland is a high quality habitat for marsh species, including the State and federally endangered species California clapper rail and salt marsh harvest mouse. In winter there are many species of ducks foraging and feeding in the deeper waters and roosting on the surrounding uplands. Significant numbers of shorebirds utilize the site during their migratory season in late-winter and early spring (URS 2009). During the February 2013 site visit to this location, hundreds of migratory birds were observed utilizing this freshwater marsh. There are also abundant native wetland plant species, such as cattail, arroyo willow, rushes, bulrush, spike rush and saltgrass.

Special Status Fish and Marine Mammals

The open waters surrounding the Project Area are identified as critical habitat for steelhead trout and green sturgeon. The State-threatened longfin smelt may also be found in these waters, most commonly in the winter months (Robinson and Greenfield 2011). Although not expected, it is possible that the Central Valley Spring Run Chinook Salmon, Sacramento River Winter Run Chinook Salmon, and Central California Coast Steelhead could also potentially use San Leandro Bay for foraging. These waters are also considered essential fisheries habitat and contain spawning and foraging habitat for Pacific herring.

Pacific harbor seals may be found year-round in the Project Area's Bay waters, and California sea lions may occasionally occur through most of the year.

The creation of the Bay Inlet as part of Plan Buildout in Sub-Area B will require dredging of existing fill material to create additional Bay. This activity could cause direct impacts to these special status fish and marine mammals by releasing large amounts of sediment into San Leandro Bay.

Special Status Terrestrial Mammals

The State and federally endangered salt marsh harvest mouse is associated with pickleweed, which is a primary vegetative species found in the Edgewater Seasonal Wetland. Impacts to pickleweed, including the direct removal and fill associated with the proposed development of the Edgewater Seasonal Wetland site, or trampling or driving on pickleweed, could cause direct impacts to salt marsh harvest mouse. In addition, areas of coastal salt marsh within and adjacent to the Project Area may support salt marsh harvest mouse and the salt marsh wandering shrew.

Three bat species, the Townsend's big-eared bat, pallid bat and silver-haired bat, have the potential to roost in structures and trees, and the numerous creeks, sloughs, and open water provide suitable foraging habitat. The demolition and or renovation of structures under Plan Buildout could impact bat species if roosting individuals are present or if maternity roosts have been established.

Special Status Birds

The State or federally threatened or endangered or State fully protected species with potential to occur within the vicinity of the Project Area include California clapper rail, California black rail, California brown pelican, California least tern, peregrine falcon, and western snowy plover. Of these listed birds, the California clapper rail and California black rail are expected to nest in the adjacent coastal salt marshes. The other four listed species are expected to forage in the vicinity of the Project Area. There is some potential for peregrine falcons to nest on tall man-made structures near the bay, but none have been documented to nest in the Project Area.

Other raptors which may occur in the Project Area are the American kestrel, burrowing owl, Cooper's hawk, northern harrier, osprey, red-tailed hawk, and white-tailed kite. Mature trees and tall buildings and other man-made structures may be used for nesting, roosting and perching by birds, especially raptors. The removal of buildings is not considered significant loss of habitat, especially as new buildings will replace those that are removed.

Other birds which may occur in the Project Area are the Alameda song sparrow, California gull, double-crested cormorant, great blue heron, great egret, redhead, San Francisco saltmarsh common yellowthroat, and snowy egret. The Alameda song sparrow and San Francisco saltmarsh common yellowthroat nest in in tidal coastal salt marshes along the edges of San Francisco Bay. All forage in the vicinity of the Project Area. Damon Slough, Elmhurst Creek and San Leandro Creek provide foraging for the great blue heron, great egret, snowy egret, and other species. Adjacent marshes, creeks, sloughs and Bay waters also provide foraging habitat for most of these species.

The California clapper rail, California black rail, Alameda song sparrow, and San Francisco saltmarsh common yellowthroat are all associated with salt marsh habitat. Other species may also have potential to nest within the Project Area. Increased development can also have indirect impacts by increasing predation pressure on bird species. Features providing perching opportunities for raptors can have impacts on burrowing owls. The development of the new trail along the south side of Damon Slough, along with the development of residential and a higher density of business uses would increase the

number of people using this area along the shoreline. This could result in increased disturbance and harassment of special status or otherwise protected wildlife.

Standard Conditions of Approval

Work in Area Subject to Additional Agency Jurisdiction

Development and construction associated with Plan Buildout includes continuation of the realignment and potential culverting of Elmhurst Creek and continued enhancement of Damon Slough beyond the boundaries of the Coliseum District and into Sub-Areas B and C. As described above for the Coliseum District, each of these activities will be subject to the jurisdiction of several additional agencies in addition to the City of Oakland, including the RWQCB (National Pollution Discharge Elimination System permits), the California Department of Fish and Wildlife (a Streambed Alteration Agreement), the US Army Corps of Engineers (Section 404 permit pursuant to the Clean Water Act), and potentially the US Fish and Wildlife Service (Biological Opinion pursuant to a Section 404 permit). Pursuant to implementation of SCA Bio-12: Regulatory Permits and Authorizations, it is anticipated that these regulatory agencies will require conditions pursuant to their permits or authorizations to ensure that potential impacts to sensitive status species are minimized.

Plan Buildout also includes a proposal to create a new Bay inlet by dredging a portion of existing fill along the edge of San Leandro Bay within Sub-Area B, as well as the fill and development of the existing Edgewater Seasonal Wetland. For these additional Plan Buildout elements, additional regulatory permits and authorizations will be required pursuant to SCA Bio-12: Regulatory Permits and Authorizations. These additional regulatory agencies and their permitting authorities include:

- Any projects requiring in-Bay work (including the proposed Bay inlet cut and the completion of Damon Slough enhancements at Damon Marsh) will require that a Long Term Management Strategy (LTMS) Dredge permit (a cooperative permitting process of the USEPA, US Army Corps of Engineers, RWQCB, and BCDC for the placement of dredged material in the San Francisco Bay Region) be obtained from the Dredged Material Management Office (staffed by the four cooperative agencies and by representatives of CDFW, NOAA Fisheries, and USFWS who provide technical advice and guidance on dredging projects impacts to biological resources). The agencies jointly review applications before issuing permits and/or authorizations.
- In-Bay work (including the proposed Bay inlet cut and the completion of Damon Slough enhancements at Damon Marsh) will require consultation with NOAA Fisheries to determine if the work can be covered under one of the programmatic consultations for federally listed species or if a project-level Biological Opinion (BO) would be required, and whether an Incidental Harassment Authorization (IHA) for marine mammals would be needed for dredging activities.
- In-Bay work will also require consultation with CDFW regarding State special status fish and the potential need for an Incidental Take Permit (ITP).
- The discharge of dredged or fill material into "waters of the United States" (which includes the Bay and the Edgewater Seasonal Wetland) is regulated by the US Army Corps of Engineers under the Clean Water Act, and the excavation of material from, or deposition of material into navigable waters is regulated under Section 10 of the Rivers and Harbors Act . Section 404 permits would be required for both the proposed Bay inlet and the proposed fill of the Edgewater Wetlands site, and Section 10 permits would be required for any possible Bay cut.
- BCDC regulates dredging, filling, and public access within 100 feet of the mean high tide line within San Francisco Bay and has jurisdiction over open water, marshes, mudflats, the first 100-feet inland

from the shoreline, and portions of most creeks, rivers, sloughs and tributaries that flow into San Francisco Bay. BCDC permits will be required for all work within their jurisdictional boundaries.

The City of Oakland's SCA Bio-12: Regulatory Permits and Authorizations acknowledges the regulatory permits and authorizations needed from a number of additional regulatory agencies in addition to the City of Oakland, and requires compliance with all conditions as may be issued by these applicable agencies. Not until such time as permits from these agencies are sought for individual Project elements (i.e., the Bay Inlet cut, the filling and development of the Edgewater Seasonal Wetland, any work within Damon Marsh related to Damon Slough improvements, and/or changes in Bay habitat related to Elmhurst Creek modifications) can the requirements and conditions specific to these Project elements be known.

Downstream Sediments and Contamination

Potential impacts associated with construction activity pursuant to Plan Buildout that may cause sediments or contaminants to move out to the surrounding creeks and sloughs, marshes, or open water will also be reduced through implementation of City of Oakland SCAs including, but not limited to SCA Bio-9: Erosion and Sedimentation Control Plan, SCA Bio-10: Best Management Practices for Soil and Groundwater Hazards, SCA Bio-11: Creek Protection Plan, SCA Bio-13: Creek Monitoring, SCA Bio-14: Creek Landscaping, SCA Bio-15: Creek Dewatering and Aquatic Life, and SCA Bio-16: Creek Dewatering and Diversion. Implementation of these SCAs would substantially reduce impacts on special status species (fish, marine mammal species and mammal species which inhabit salt marshes) that could otherwise be adversely affected by downstream sedimentation and contamination resulting from work adjacent to and within creek corridors.

Direct Impacts to Birds and Bats

Indirect impacts on special status birds and bats could occur from construction activity pursuant to Plan Buildout through disturbance from noise, truck traffic and works, as well as direct impacts through removal of nesting habitat. Implementation of SCA Bio-1: Operational Noise-General, SCA Bio-2: Pile Driving and Other Extreme Noise Generators, SCA Bio-4: Tree Removal Permit on Creekside Properties, SCA Bio-5: Tree Removal During Breeding Season, SCA Bio-6: Tree Removal Permit, SCA Bio-7: Tree Replacement Plantings, SCA Bio-8: Tree Protection During Construction, SCA Bio-11: Creek Protection Plan, and SCA Bio-14: Creek Landscaping would reduce impacts on special status bird species.

In addition, to reduce potential impacts to special status bat species, the consulting biologist has recommended additional measures be implemented in furtherance of SCA Bio-5: Tree Removal during Breeding Season, as described above under Impact Bio-1A, which would also apply elsewhere within the Project Area pursuant to Plan Buildout.

Mitigation Measures

Because of the special sensitivity and extended nesting and migratory period associated with California clapper rails, California black rails and raptors, the following mitigation measure is recommended to replace and/or supersede certain provisions of SCA Bio-5: Tree Removal during Breeding Season:

MM Bio 1A-1: Pre-construction Nesting Bird Surveys and Buffers. (See full text under Impact Bio-1A)

Any in-water work within Damon Slough or Elmhurst Creek could cause indirect impacts by releasing large amounts of sediments during construction. Therefore, the following mitigation measure is recommended:

MM Bio 1A-2: In-water Work Restrictions. (See full text above under Impact Bio-1A)

The following additional mitigation measure is recommended to fully provide for the avoidance and protection of salt marsh harvest mouse habitat (pickleweed-dominated salt marsh habitat within Damon Marsh and Arrowhead Marsh):

MM Bio 1A-3: Salt Marsh Protection. (See full text above under Impact Bio-1A)

Although the specific conditions and requirements of several regulatory agencies will ultimately control the proposal for a Bay Inlet cut, the following mitigation measure is recommended by the City of Oakland, specific to that Bay cut proposal, to address sensitive species habitat:

MM Bio 1B-1: In-Bay Dredge Requirements. No in-Bay dredging activities shall occur during the period from October 1 to July 31 to minimize open water turbidity during the sensitive seasons for steelhead, chinook salmon, Pacific herring, longfin smelt, California brown pelican, and California least tern.

a) Measures to be included to reduce the possibility of entrainment of green sturgeon and longfin smelt and may include ensuring dredge drag maintains contact with substrate and potentially investigating methods to move fish out of an area of interest using nets or sounds before dredging.

b) Measures to reduce in-water turbidity will be implemented and may include the use of impermeable silt curtains to contain sediments within a limited area until it resettles, the use of gunderbooms, and the use of operational controls for mechanical and hydraulic dredges to limit the amount of sediment released while dredging.

Although the specific conditions and requirements of several regulatory agencies will ultimately control the proposal for filling and redeveloping the Edgewater Seasonal Wetland, the following mitigation measure is are recommended by the City of Oakland, specific to that wetlands fill proposal, to address sensitive species habitat:

MM Bio 1B-2: Seasonal Wetland Restoration Plan. To replace impacted wetlands and associated habitat for special status species at the Edgewater Seasonal Wetland, a Habitat Restoration Plan will be developed and implemented to create an approximately 15-acre seasonal wetland and associated Coastal and Valley freshwater wetland habitat in Sub-Area E. The precise boundaries of the newly created wetland have not been defined, but may include portions of the 24-aqcres of City-owned waterfront property in Sub-Area E, and/or portions of the adjacent EBMUD-owned property pending a negotiated acquisition of such lands.

a) The majority of lands potentially considered for wetlands restoration within Sub-Area E Are currently ruderal areas, with some paving. Proposed improvements would include removing paved material, mitigating for potential hazardous materials or soils, and re-grading the site to create low areas that would retain freshwater and rainfall, and creating surrounding uplands to provide bird roosting habitat.

b) The area would be planted with appropriate native plants to achieve a functioning seasonal wetland and fenced to exclude people and land-based predators.

c) Performance standards that are accepted by the resource agencies for site re-vegetation shall be specified in the plan.

d) The restored areas shall be monitored for a minimum of five years and remedial measures taken, such as replanting vegetation or enhancing additional areas, until the performance standards are met.

e) Construction of the new wetland must be completed prior to removing the Edgewater Seasonal Wetland.

f) The City will enter into discussions with the East Bay Regional Parks District about management of the new wetland in Sub-Area E.

Resulting Level of Significance

Impacts to special status species resulting from the majority of construction activity and operations pursuant to Plan Buildout will be reduced to less than significant through implementation of SCA Bio-12: Regulatory Permits and Authorizations, as well as implementation of all other City of Oakland SCAs related to direct and indirect impacts to special status species and habitat as described above.

However, the proposed Bay Inlet cut and the fill and development of the Edgewater Seasonal Wetland as a new waterfront residential development site will be subject to numerous subsequent permitting and regulatory requirements of outside regional, state and federal agencies with jurisdiction over the Plan Buildout components. Not until such time as the details of the project elements are known, permits from responsible agencies are sought, and the requirements and conditions of the responsible regulatory agencies specific to these Project elements are fully known, can any determination be made as to the efficacy of mitigation strategies. Therefore, impacts to special status species and their habitat resulting from the proposed Bay Inlet cut and the filling and development of Edgewater Seasonal Wetland are considered **significant and unavoidable**.

Wetlands, Riparian Habitat and Other Sensitive Natural Communities

Coliseum District

Impact Bio-2A: New development within the Coliseum District could have a substantial adverse effect on wetlands, riparian habitat and other sensitive natural communities. **(LTS with MM)**

As part of the Coliseum District development, Elmhurst Creek, Damon Slough and the "Cruise America" parcel adjacent to Damon Slough will be affected. See the section "Biologically Sensitive Components of the Project" earlier in this chapter for a list of the three creek treatment options.

Within the Coliseum District, Damon Slough and Elmhurst Creek are considered navigable Waters of the United States, therefore "jurisdictional" waters regulated by the US Army Corps of Engineers under Section 10 of the Rivers and Harbors Act up to mean high-water, and under Section 404 of the Clean Water Act up to the mean high-tide line. These waters are also regulated by the RWQCB as Waters of the State. BCDC also has jurisdiction over all areas of San Francisco Bay that are subject to tidal action.

Damon Slough has a narrow band of coastal tidal marsh (a sensitive natural community) along its edges. Elmhurst Creek has a narrow band of coastal scrub (a sensitive natural community) along its edges. This habitat is considered sensitive because of its value to wildlife and because of the substantial loss and degradation of these habitats regionally. Removal of coastal scrub vegetation could reduce potential nesting habitat for birds and cover sites for animals, reduce beneficial shading of watercourses and potentially affect bank stability.

Damon Slough

As part of the proposed Project within the Coliseum District, Damon Slough will be restored, enhanced and protected. The extent of restoration of the "Cruise America" parcel[4] adjacent to Damon Slough varies, but all Creek options would involve Damon Slough restoration intended to enhance and increase habitat value. Upon implementation, restoration activities would result in no significant impacts to wetlands, riparian habitat or sensitive natural communities.

However, construction activities could impact Damon Slough and other waters adjacent to temporary work sites, including temporarily-affected areas at stream crossings. Operation of vehicles and equipment in these areas could adversely affect marsh and slough habitat by disrupting soil and damaging and removing marsh and slough vegetation. Ground disturbance and other activities within the stream zones could result in increased erosion, water turbidity and sediment transport into waterways. Oil, gas and other pollutants could also be released into water bodies. While these temporary effects would not result in net loss of wetlands or other waters, they could adversely affect aquatic organisms in the vicinity of work areas. Suspended sediments can interfere with respiration, reduce visibility and affect feeding and other essential life cycle activities. Excess sediments can also bury eggs, fill pools and alter streambeds that provide important habitat (see discussion on potential impacts on special status fish and wildlife and aquatic species under Impact Bio-1A).

Elmhurst Creek

If Option A is pursued, Elmhurst Creek would remain as-is in its current condition and no significant impacts are anticipated. If Option B of the creek options is pursued, this option would include installation of pedestrian and vehicular bridges across Elmhurst Creek with pilings and abutments on creek banks, and could result in removal of coastal scrub vegetation. If Option C of the creek options is pursued, the realignment of Elmhurst Creek and placement of the current open creek into a flood-flow drainage culvert would result in the permanent removal of coastal scrub habitat around the creek and result in the permanent loss of 1,500 feet of jurisdictional waters.

For creek alignment Options A and B, Elmhurst Creek will remain in its current, open alignment. Construction activities adjacent to the Creek could impact Elmhurst Creek and other waters adjacent to temporary work sites, including temporarily-affected areas at stream crossings. Bridge construction, culvert construction and/or rehabilitation construction will occur along the Creek corridor. Operation of vehicles and equipment in temporary construction access and staging areas, parking of vehicles, and placement of equipment and materials in laydown and storage areas within sensitive communities along the edges of waterways throughout the Coliseum District could remove or crush vegetation and/or compact the soil. Ground disturbance and other activities within the stream zones could result in increased erosion, water turbidity and sediment transport into waterways. Oil, gas and other pollutants could also be released into water bodies. While these temporary effects would not result in net loss of wetlands or other waters, they could adversely affect aquatic organisms in the vicinity of work areas and could potentially impair the recruitment and establishment of onsite vegetation.

Standard Conditions of Approval

For all impacts to wetlands, riparian habitat and sensitive natural communities potentially caused by construction activities near the edges of on-site waterways, SCA Bio-10: Best Management Practices for

[4] A City of Oakland-owned parcel at 796 66th Avenue.

Soil and Groundwater Hazards and SCA Bio-11: Creek Protection Plan would substantially reduce these impacts.

Damon Slough

For impacts to wetlands, riparian habitat or sensitive natural communities resulting from construction activity pursuant to the proposed Damon Slough enhancements, City of Oakland SCAs that would apply include SCA Bio-6: Tree Removal Permit and/or SCA Bio-8: Tree Protection Permit, SCA Bio-9: Erosion and Sedimentation Control Plan, SCA Bio-10: Best Management Practices for Soil and Groundwater Hazards, SCA Bio-11: Creek Protection Plan, SCA Bio-12: Regulatory Permits and Authorizations, SCA Bio-13: Creek Monitoring, and SCA Bio-14: Creek Landscaping Plan. Implementation of the SCAs would substantially reduce impacts to riparian habitat or sensitive natural communities.

Elmhurst Creek

For impacts to wetlands, riparian habitat or sensitive natural communities along Elmhurst Creek, the same standard SCAs applicable to Damon Slough would also generally apply, but there would be differences depending upon the various creek treatment options:

- Under Option A, no modifications to the Creek would occur, and thus no outside agency regulatory permits and authorizations (SCA Bio-12) would be required. However, because development of the new Stadium and parking lot improvements would occur within the immediate proximity to this Creek, a City of Oakland Creeks permit would still be required and all SCAs relevant to that permit would be required to be implemented.
- Under Option B, all of the same SCAs as required above for Damon Slough would similarly be required for improvements and creek crossings of Elmhurst Creek, including SCA Bio-8, Bio-9, Bio-10, Bio-11, Bio-12, and Bio-13.
- Under Option C, wherein Elmhurst Creek is placed within a new underground culvert, there would be additional jurisdictional regulatory requirements. This option would likely be subject to the jurisdiction of several additional agencies including the Alameda County Flood Control and Water Conservation Agency, the RWQCB, the California Department of Fish and Wildlife, the US Army Corps of Engineers and potentially the US Fish and Wildlife Service. Pursuant to implementation of SCA Bio-12: these regulatory agencies will require conditions pursuant to their permits or authorizations to ensure that potential impacts to sensitive natural communities are minimized. In addition, implementation of City of Oakland SCA will be required, including SCA Bio-4: Tree Removal Permit on Creekside Properties, SCA Bio-6: Tree Removal Permit, SCA Bio-9: Erosion and Sedimentation Control Plan, SCA Bio-10 Best Management Practices for Soil and Groundwater Hazards, SCA Bio-11: Creek Protection Plan, SCA Bio-13: Creek Monitoring, SCA Bio-15: Creek Dewatering and Aquatic Life, and SCA Bio-16: Creek Dewatering and Diversion. Implementation of these SCA would substantially reduce the impacts to sensitive natural communities associated with modifications to Elmhurst Creek.

Mitigation Measures

In addition to the SCAs identified above, the following mitigation measures are recommended to address potential impacts to wetlands and sensitive natural communities within the Coliseum District that are associated with proposed Creek modifications:

Damon Slough

MM Bio 2A-1: Vegetation Plan for Coliseum District Sensitive Communities. A Restoration Plan shall be developed for disturbed sensitive communities.

a) Performance standards that are accepted by CDFW and RWQCB for site re-vegetation shall be specified in the plan. The restored areas shall be monitored for a minimum of three years and remedial measures taken, such as replanting vegetation or enhancing additional areas until the performance standards are met.

b) The former RV site (known as the "Cruise America" parcel[5]) shall be transferred to an appropriate resource management agency, such as the East Bay Regional Park District (EBRPD) or the California Department of Fish and Wildlife (CDFW).

MM Bio 2A-2: Damon Slough Bridge Structure Placement. Place any new bridge pilings and abutments outside of coastal tidal marsh habitat.

Elmhurst Creek

Under Option A for Elmhurst Creek, with implementation of City of Oakland SCAs no significant impacts to wetlands or sensitive natural communities are anticipated and no further mitigation measures are required.

Under Option B for Elmhurst Creek, the following mitigation measures are recommended in addition to City SCAs to fully reduce impacts to wetlands and the coastal scrub habitat that lines Elmhurst Creek.

MM Bio 2A-3: Elmhurst Creek Bridge Structure Placements *(only applies if Creek Option B is pursued)*. Place bridge pilings and abutments outside of coastal scrub habitat.

MM Bio 2A-4: Coastal Scrub Restoration (*only applies if Creek Option B is pursued)***.** Impacts to coastal scrub habitat at Elmhurst Creek shall be fully mitigated by restoration of the former RV site (known as the "Cruise America" parcel) and the restoration of additional upland riparian habitat along Damon Slough.

a) Performance standards that are accepted by CDFW and RWQCB for site re-vegetation shall be specified in the Restoration Plan required under Mitigation Measure Bio 2A-1: Vegetation Plan for Coliseum District Sensitive Communities.

b) The restored areas shall be monitored for a minimum of three years and remedial measures taken, such as replanting vegetation or enhancing additional areas, until the performance standards are met.

Under Option C for Elmhurst Creek, the following mitigation measures are recommended in addition to City SCAs to fully reduce or compensate for impacts to wetlands and coastal scrub habitat.

[5] A City of Oakland-owned parcel at 796 66th Avenue.

MM Bio 2A-5: Realigned Portion of Elmhurst Creek *(Only applies if Creek Option C is pursued).* Any newly aligned and day-lighted portion of Elmhurst Creek must have a channel design that is consistent with the City of Oakland Creek Protection, Storm Water Management and Discharge Control Ordinance.

a) A minimum 3:1 ratio for a setback based on the depth of the existing Elmhurst Creek is required for the newly aligned creek banks.

b) The created banks will be enhanced to support coastal scrub habitat. Performance standards that are accepted by CDFW and RWQCB for site re-vegetation shall be specified in the Restoration Plan required by Mitigation Measure Bio 2A-1.

c) The restored areas shall be monitored for a minimum of three years and remedial measures taken, such as replanting vegetation or enhancing additional areas, until the performance standards are met.

MM Bio 2A-6: "Cruise America" Tidal Wetland *(Only applies if Creek Option C is pursued).* The former RV site, known as the "Cruise America" parcel[6] shall be restored to provide a tidal wetland designed to be self-sustaining in hydrological and habitat function. In addition to the newly aligned segment of Elmhurst Creek, approximately 2.4 acres of this new wetland will serve as mitigation for the removal of 1,500 feet of Elmhurst Creek.

a) Along with the new wetland, creation of upland coastal scrub habitat will be provided on this site as well.

b) Performance standards that are accepted by CDFW and RWQCB for site re-vegetation shall be specified in the Restoration Plan required by Mitigation Measure Bio 2A-1.

c) The restored areas shall be monitored for a minimum of three years and remedial measures taken, such as replanting vegetation or enhancing additional areas, until the performance standards are met.

Resulting Level of Significance

For impacts caused by construction activities in sensitive communities along the edges of waterways, application of City of Oakland SCAs including but not limited to SCA Bio-10: Best Management Practices for Soil and Groundwater Hazards and SCA Bio-11: Creek Protection Plan would reduce these impacts to a **less than significant** level.

For impacts to Damon Slough under all Creek options (A, B, and C), implementation of identified City of Oakland SCAs, and implementation of Mitigation Measure Bio 2A-1: Vegetation Plan for Sensitive Communities and Mitigation Measure Bio 2A-2: Damon Slough Bridge Structure Placement, are needed to fully reduce and/or compensate for impacts to sensitive natural communities to a **less than significant** level.

Depending upon the ultimate selection of the preferred Creek treatment options at Elmhurst Creek:

- No mitigation measures are required and City of Oakland SCAs fully address impacts to sensitive natural communities under Option A,

[6] A City of Oakland-owned parcel at 796 66th Avenue.

- Mitigation Measures Bio 2A-3: Bridge Structure Placement and Bio 2A-4: Coastal Scrub Restoration, in addition to City of Oakland SCAs, are needed to fully address impacts to sensitive natural communities to a **less than significant** level under Option B, and
- Mitigation Measures Bio 2A-5: Realigned Portion of Elmhurst Creek and Bio 2A-6: "Cruise America" Tidal Wetland, in addition to City of Oakland SCAs, are needed to fully address impacts to sensitive natural communities to a **less than significant** level under Option C.

Plan Buildout

Impact Bio-2B: Future development pursuant to Plan Buildout could have a substantial adverse effect on riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. **(LTS with MM)**

Seasonal Wetlands

The proposed construction of the waterfront residential district in Sub-Area B pursuant to Plan Buildout would result in the loss and permanent fill of the approximately 9-acre Edgewater Seasonal Wetland. The Edgewater Seasonal Wetland is a jurisdictional wetland including coastal and valley freshwater marsh habitat. Coastal and valley freshwater marsh forms in permanently to semi-permanently flooded basins of relatively shallow water. These marshes occur where freshwater creates inundated or saturated soil conditions on an annual or semi-annual basis, allowing for growth of perennial, emergent plant species. Edgewater Seasonal Wetland was designed as a mitigation site for the Oakland Airport Runway 11-29 Rehabilitation Project. It was a joint project between the Port of Oakland, EBRPD, Golden Gate Audubon Society, San Francisco Bay Conservation and Development Commission (BCDC), Save the Bay, the U.S. Army Corps of Engineers (USACE), URS Corporation, the City of Oakland, the RWQCB, and the Federal Aviation Administration. The mitigation included creating and enhancing wetland features on the site Over 7,000 native plants were planted at the mitigation site to create nesting and foraging habitat for wildlife. In 2012, the Port of Oakland transferred this land to the EBRPD for long-term management. The Edgewater Seasonal Wetland is adjacent to the brackish water habitat in Damon Slough at the confluence of Damon Slough and San Leandro Bay, and has proximity to Arrowhead Marsh, which is a high quality habitat for marsh species. The restored freshwater marsh now holds water six or seven months of the year. The soils are saline because it was bay dredge that filled the site, but design of the restoration intends to allow for fresh water to pond in the area, which dilutes the salts in the soils.

The Project proposes that the loss of the Edgewater Seasonal Wetland would be mitigated by creating a new, approximately 15-acre freshwater seasonal wetland and associated coastal and valley freshwater wetland habitat in Sub-Area E (see Figure 4.3-4). Currently the proposed mitigation site in Sub-Area E is a rectilinear vacant lot that is partially paved; the existing vegetation is ruderal and distribution of wildlife within the lot is limited. The lot is adjacent to a PG&E corporation yard, near the East Bay Municipal Utility District water treatment plant, and adjacent to Oakport Street and I-880 to the north and east. The western border of this property is adjacent to undeveloped lands and Damon Marsh, which lead directly out to San Leandro Bay. This mitigation site has connectivity to upland areas, tidal salt marsh, and the San Leandro Bay. The proposed restoration would include removing paved material, remediating potential hazardous materials and soil, grading the site to create low areas to retain fresh water rain, and creating surrounding uplands to provide roosting habitat. The area would be planted with appropriate native plants to achieve a functioning seasonal wetland and the area would be fenced

to exclude human and land based predators. This would improve the local water quality by removing pavement and increasing the infiltration capacity of the site.

Because the mitigation site is adjacent to brackish water habitat, salt marsh and San Leandro Bay, as compared to Edgewater Seasonal Wetland it offers similar if not better proximity to a large area of high quality habitat for migratory birds and increases potential value to provide non-fragmented habitat. This would increase the total acreage of contiguous breeding and wintering habitat along the eastern shoreline of San Leandro Bay. There is also potential for the site to have a hydrologic connection to the Bay and have tidal influence, which could allow for its restoration as a salt marsh. Restoration to a tidal salt marsh may benefit federally endangered California clapper rail and salt marsh harvest mouse by providing foraging and breeding habitat which is connected to Damon Slough.

Bay Inlet

Creation of the proposed Bay inlet would permanently create approximately 12 acres of new jurisdictional waters within San Leandro Bay. This inlet would be created by excavating/dredging the area and allowing Bay waters to enter. This activity is considered a beneficial impact because it increases jurisdictional waters by removing fill and increases linear feet of shoreline. The new inlet would include intertidal mudflats that would support shorebird foraging and possibly high tide roosting habitat.

Creeks, Sloughs and San Leandro Bay

In addition to the restoration, enhancement and protection of Damon Slough and potential realignment of Elmhurst Creek, both described under Impact Bio-2A, it is anticipated that under Plan Buildout there will be additional realignment or widening of existing bridges or addition of new bridges over Damon Slough and Elmhurst Creek, and potentially other waterways within the Project Area. These new or widened bridges could include installation of bridge components, such as pilings and abutments on creek banks, which could result in removal of coastal scrub vegetation. This habitat is considered sensitive because of its value to wildlife and because of the substantial loss and degradation of these habitats regionally. Removal of coastal scrub vegetation could reduce potential nesting sites for birds and cover sites for animals, reduce beneficial shading of watercourses and potentially affect bank stability.

Construction activities could impact jurisdictional waters adjacent to temporary work sites, including temporarily-affected areas at stream crossings within and adjacent to the Project Area. Bridge construction, culvert reconstruction or rehabilitation will occur along the Project corridor. Operation of vehicles and equipment in these areas could adversely affect coastal scrub, coastal marsh and creek habitat by disrupting soil and damaging and removing coastal scrub, coastal marsh and creek vegetation. Ground disturbance and other activities within the stream zones could result in increased erosion, water turbidity and sediment transport into waterways. Oil, gas and other pollutants could also be released into water bodies. While these temporary effects would not result in net loss of wetlands or other waters, they could adversely affect aquatic organisms in the vicinity of work areas. Suspended sediments can interfere with respiration, reduce visibility and affect feeding and other essential life cycle activities. Excess sediments can also bury eggs, fill pools and alter streambeds that provide important habitat. Potential impacts on special status fish and wildlife and aquatic species are described under Impact Bio-1B.

Standard Conditions of Approval

See the discussion under Impact Bio-2A.

Mitigation Measures

As discussed above, the seasonal freshwater marsh relocation proposed under Plan Buildout would have net beneficial effects for wetland and riparian habitat in the long-term. To reduce impacts from this project component on wetland habitat, the following mitigation measure is recommended:

MM Bio 1B-2: Freshwater Marsh Restoration Plan. (See full text under Impact Bio-1B)

Although the specific conditions and requirements of several regulatory agencies will ultimately control the proposal for a Bay Inlet cut, the following mitigation measure is recommended to address sensitive species habitat:

MM Bio 1B-1: In-Bay Dredge Requirements. (See full text under Impact Bio-1B)

Because of the potential of the Damon Creek restoration to damage sensitive riparian habitats, the following mitigation measures are recommended. Note that these measures apply throughout the Project Area, including work in and along Damon Slough within Sub-Areas B and E:

MM Bio 2A-1: Vegetation Plan for Coliseum District Sensitive Communities. (See full text under Impact Bio-2A)

MM Bio 2A-2: Damon Slough Bridge Structure Placement. (See full text under Impact Bio-2A)

In the case of Option B being pursued for Elmhurst Creek (retain alignment, add bridges and enhancements), the following mitigation measures are recommended to reduce damage to sensitive riparian habitats. These measures will also apply to any bridges or other improvements applied to Elmhurst Creek within Sub-Areas B and C:

MM Bio 2A-3: Elmhurst Creek Bridge Structure Placements. (See full text under Impact Bio-2A)

MM Bio 2A-4: Coastal Scrub Restoration. (See full text under Impact Bio-2A)

In the case of Option C being pursued for Elmhurst Creek (re-routing), the following mitigation measures are recommended to fully reduce or compensate for impacts to wetlands and coastal scrub habitat. These measures would only occur within Sub-Area A:

MM Bio 2A-5: Realigned Portion of Elmhurst Creek. (See full text under Impact Bio-2A)

MM Bio 2A-6: former RV site ("Cruise America" parcel) Tidal Wetland. (See full text under Impact Bio-2A)

Furthermore, any in-water work within Damon Slough or Elmhurst Creek could cause indirect impacts by releasing large amounts of sediments during construction, which could affect wetlands and riparian habitat. Therefore, the following mitigation measure is recommended:

MM Bio 1A-2: In-water Work Restrictions. (See full text above under Impact Bio-1A)

Resulting Level of Significance

For impacts caused by construction activities in sensitive communities along the edges of waterways, implementation of City of Oakland SCAs including but not limited to SCA Bio-10: Best Management Practices for Soil and Groundwater Hazards and SCA Bio-11: Creek Protection Plan would reduce these

impacts. In addition, impacts to wetland and riparian habitat due to marsh relocation, Bay inlet construction, and work in and around other waterways will be reduced through implementation of SCA Bio-12: Regulatory Permits and Authorizations. Mitigation Measures Bio 1B-1: In-Bay Dredge Requirements and Bio 1B-2: Freshwater Marsh Restoration Plan will help ensure that these actions are undertaken with sensitivity to the existing environment and that in concert with the City's SCAs, impacts are **less than significant.**

For impacts to Damon Slough, Mitigation Measures Bio 2A-1: Vegetation Plan for Sensitive Communities, Bio 2A-2: Damon Slough Bridge Structure Placement, are needed to fully reduce and/or compensate for impacts to sensitive natural communities to a **less than significant** level. Depending upon the ultimate selection of the preferred Creek treatment options for Elmhurst Creek, Mitigation Measures Bio 2A-3: Bridge Structure Placement, Bio 2A-4: Coastal Scrub Restoration, Bio 2A-5: Realigned Portion of Elmhurst Creek, and Bio 2A-6: "Cruise America" Tidal Wetland, in addition to City of Oakland SCAs, are needed to fully address impacts to sensitive natural communities to a **less than significant** level. Mitigation Measure Bio 1A-2: In-water Work Restrictions would ensure that work within these waterways protects migrating steelhead.

Species Movement, Migration, or Nursery Sites

Coliseum District and Plan Buildout

Impact Bio-3: Future development (at the Coliseum District and pursuant to Plan Buildout) could substantially interfere with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. **(LTS with MM)**

Migratory Fish and Marine Mammals

San Leandro Bay serves as important habitat for listed fish and marine mammal species. The federally threatened Central California Coast Steelhead is known to spawn in San Leandro Creek and migrate through waters in the vicinity of the Project Area in San Leandro Bay between the ocean and San Leandro Creek. Other covered fish species, Pacific harbor seals and California sea lions may be found year-round in the waters near the Project Area as well, although San Leandro Bay is not an important migratory route for them. No work is proposed to take place in San Leandro Creek. In-water work is limited to work in Damon Slough, in Elmhurst Creek and when creating the proposed Bay inlet. Only indirect impacts to migratory aquatic species are anticipated.

Migratory Bird and Terrestrial Mammal Species

Habitat suitable for nesting birds is found throughout and adjacent to the Project Area and includes Damon Slough, Elmhurst Creek, San Leandro Creek, Edgewater Seasonal Wetland, San Leandro Bay, landscape trees, and structures including buildings and bridges. Numerous special status bird species have the potential to occur within or adjacent to the Project Area. Special status species known to breed within or adjacent to the Project Area include California clapper rail and burrowing owl. In addition, common bird species that have been observed during reconnaissance level surveys which have the potential to breed at the Project site include red-tailed hawk, killdeer, Anna's hummingbird, mallard, and American crow.

Disturbance from construction activities during the breeding season could result in nest abandonment and direct impacts to eggs or nestlings. Disturbance can result from both direct and indirect effects.

Direct construction disturbance would include physically altering the nest or the substrate where the nest is located. Indirect disturbance include, noise, night lighting, altering of surrounding habitat through vegetation removal, and flight path obstruction. The Project Area may also contain three special status bat species and two special status salt marsh mammals, salt marsh harvest mouse and salt marsh wandering shrew. There is some potential for direct impacts to nesting migratory bird and bat species.

The MLK Regional Shoreline Park currently provides recreation opportunities along San Leandro Bay, Damon Slough, East Creek Slough, Elmhurst Creek, and San Leandro Creek. The proposed Project will likely increase the number of people using these recreational facilities and build additional trails along Damon Slough and improve trails along Elmhurst Creek. This has the potential to cause disturbance to migratory bird species through increased noise and presence of people and pets. Feral cats are also associated with human presence. Increased noise could prevent birds from receiving acoustic signals for nest exchanges, feeding, and predator alarm. Increased noise has been shown to impact nestling response to adults (Leonard et al. 2012). These factors already exist and are tolerated well by the many species currently using the area. An increase in all of these pressures is anticipated but there are no standard metrics by which to quantify the potential impacts.

Increased usage could also result in an increase in littering of plastic trash and food waste by recreational users. Impacts to nesting birds could also result from an attraction of predators to the Project Area from construction activities, including trash containers, food waste, and feeding of wildlife. Plastics also pose a threat to birds, if ingested. The proposed Project will result in daily noise from construction equipment and activities, and a minor increase in long-term noise from increased recreational use of trails.

Long-term maintenance of the Project Area's landscaping and facilities could impact migratory bird species through future vegetation trimming and maintenance work, including the use of herbicides.

Birds living or flying through urban areas have numerous hazards including collisions with buildings, power lines, and bridges. Bird collisions with buildings are a significant threat to bird populations (San Francisco Planning Department 2011). It is estimated that, nationwide, millions of birds die in collisions with buildings each year (Ogden 1996). Clear glass is invisible to birds and poses both a daytime and nighttime hazard. Songbirds represent a large proportion of migrating birds that are affected by structures. Songbirds are vulnerable to collisions with structures as many songbird species migrate at night, fly at low altitudes, and they tend to become disoriented by night-time illumination (Ogden 1996). Bird collisions with glass are not limited to buildings, but also include smaller structures such as courtyards and atriums that have windows and especially if these structures are surrounded by vegetation. Transparent glass can reflect the surrounding environment. When glass reflects the natural environment, such as trees and grass, birds attempt to fly through this reflected habitat and collide with the glass. Birds will also collide with transparent windows as they attempt to reach potential food, water, or vegetation that is visible to them through the glass (San Francisco Planning Department 2011).

Night-time illumination has a potential to interfere with bird migrations. Approaching the lights of buildings or other structures, birds become vulnerable to collision with the structure (Ogden 1996). If the bird avoids collision with the structure, it is still at risk. Birds become hesitant to fly out of the light and into the dark and can often become exhausted from continuous circling, putting themselves at risk of death or predation (Ogden 1996). For seabirds, waterbirds, and marsh birds, lamplight-reflecting surfaces such as wet roads and greenhouses can be mistaken for water at night, causing birds to land in these areas. Many of these species have difficulty taking off from land, which puts them at risk of predation and exhaustion (Rich and Longcore 2006 and references therein).

The proposed Project will include three new structures for sports events, an elevated skyway and numerous high rise buildings for office and residential use. Glass used on all of these structures may create collision hazards for birds. Artificial lighting will be used to illuminate the buildings, walkways, and parking areas during evening events and on the elevated skyway year round. The Project Area currently includes sports facilities and office buildings and lighted walkways and streets. It is anticipated that the new development will increase the height of buildings, the amount of glass and the amount of lighting.

Standard Conditions of Approval

Potential interference with the movement of migratory fish and marine mammals would be substantially reduced through implementation of City of Oakland SCAs including, but not limited to SCA Bio-9: Erosion and Sedimentation Control Plan, SCA Bio-10: Best Management Practices for Soil and Groundwater Hazards, SCA Bio-11: Creek Protection Plan, SCA Bio-12: Regulatory Permits and Authorizations, SCA Bio-13: Creek Monitoring, SCA Bio-15: Creek Dewatering and Aquatic Life, and SCA Bio-16: Creek Dewatering and Diversion.

Disturbance from construction activities during the breeding season that may impact nesting migratory bird and bat species would be reduced through implementation of SCA Bio-5: Tree Removal During Breeding Season (including consulting biologist's recommendations), SCA Bio-6: Tree Removal Permit, and SCA Bio-7: Tree Replacement Plantings.

For impacts of increased recreation and residential facilities on migratory birds, implementation of SCA Bio-1: Operational Noise and SCA Bio-2: Pile Driving and Other Extreme Noise Generators, will reduce construction-related noise impacts to a less than significant level.

For impacts of potential avian collisions with buildings and night lighting on migratory birds, the City of Oakland has adopted strategies to make the City safer for birds. The City of Oakland has adopted bird safety measures as part of their Standard Conditions of Approval. Implementation of SCA Bio-3: Lighting Plan and SCA Bio-17: Bird Collision Reduction would result in measures to reduce bird strikes, including night lighting recommendations and restrictions, and building maintenance guidelines. To ensure maximum effectiveness of these SCAs at the Project site, the consulting biologist recommends the following specific features be implemented pursuant to SCA Bio-3: Lighting Plan to minimize the potential negative effects of artificial light from future trails and walkways on migratory birds and specifically the California clapper rail and salt marsh harvest mouse:

- Acorn-style lights that are International Dark Sky Association approved "Dark Sky Friendly" will be installed. This type of lighting ensures 0 percent light above 90 degrees, directs light downward and minimizes the amount of backward and side lighting, thereby reducing light pollution on habitat and animals in the surrounding area.
- Use only the lowest luminaire wattage that still provides safe conditions for vehicular traffic, bicyclists, and pedestrians.
- If possible, correlated color temperature (an indication of how "warm" or "cool" the light source appears) ranges of the light source to be between 3800 and 4000 Kelvins. This range corresponds to "warm" light that would be less disturbing to animals.
- Lights shall be directed away and/or screened from Damon Marsh and Arrowhead Marsh.

If approved, the proposed Project would be required to comply with SCA Bio-3: Lighting Plan, including the biologist's implementation recommendations identified above to ensure reduction of potential impacts to special status breeding birds and bats to a level of less than significant.

Mitigation Measures

There is a direct relationship between special species habitats and movement of fish or wildlife species migratory wildlife corridors and wildlife nursery sites. Because of this direct relationship, those mitigation measures that are recommended to reduce and avoid impacts to sensitive species and sensitive habitat types are also equally applicable to reducing or avoiding impacts to migratory movement, migratory corridors and nursery sites, including the following:

- MM Bio 1A-1: Pre-construction Nesting Bird Surveys and Buffers.
- MM Bio 1A-2: In-water Work Restrictions
- MM Bio 1A-3: Salt Marsh Protection
- MM Bio 1B-1: In-Bay Dredge Requirements
- MM Bio 1B-2: Freshwater Marsh Restoration Plan
- MM Bio 2A-1: Vegetation Plan for Coliseum District Sensitive Communities
- MM Bio 2A-4: Coastal Scrub Restoration (only applies if Creek Option B is pursued)
- MM Bio 2A-5: Realigned Portion of Elmhurst Creek (Only applies if Creek Option C is pursued)
- MM Bio 2A-6: "Cruise America" Tidal Wetland (Only applies if Creek Option C is pursued)

In addition, because of the increase in recreational use and the establishment of new residential areas along the Bay shoreline, especially with the proposed Bay Inlet cut, the following mitigation measures are recommended to further reduce the Project's impacts, especially on migratory birds:

MM Bio 3-1: Boat docks. No future boat docks will be allowed associated with the proposed Project to avoid disturbance to migratory and resident waterfowl.

MM Bio 3-2: Herbicide / Pesticide Control. Future maintenance shall require an herbicide/pesticide drift control plan.

Resulting Level of Significance

Implementation of City of Oakland SCA, together with the mitigation measures recommended above, would reduce impacts related to migratory movement, migratory corridors and nursery sites to a **less than significant** level.

Applicable Conservation Plans

Coliseum District and Plan Buildout

Impact Bio-4: Future development (at the Coliseum District and pursuant to Plan Buildout) would not fundamentally conflict with an applicable habitat conservation plan or natural community conservation plan. **(No Impact)**

The BCDC San Francisco Bay Plan contains findings and policies related to fish and wildlife, water quality, fill, recreation, public access, and the appearance and design of shorelines, as well as procedures for BCDC control of filling, dredging, and shoreline development. The proposed Project would provide public access to water-related uses consistent with the Bay Plan. The proposed Project would also conserve

and/or restore and enhance wetland and aquatic habitat, and potentially increase Bay habitat with the construction of the proposed Bay inlet. In addition, BCDC permitting for Project elements within Bay waters and within the 100 foot shoreline band would require measures to ensure that development facilitated by the Project would be protective of the Bay's biological resources. Thus, the proposed Project would generally be consistent with the Bay Plan.

The proposed Project aims to promote the use and development of shoreline areas consistent with San Francisco Bay Plan. It is a redevelopment project for an area that is highly developed and urbanized and surrounded by natural areas. The proposed Project is designed to maintain and improve the quality of the Bay, ocean, and shoreline areas. The Project promotes the use and development of shoreline areas consistent with San Francisco Bay Plan while protecting rare and endangered species and their habitats.

The San Francisco Baylands Habitat Goals and Subtidal Habitat Goals Reports provide a scientific foundation and approach for the conservation and enhancement of the baylands and submerged areas of San Francisco Bay. These reports are described in the Environmental Setting subsection on Special Status Natural Communities, Baylands and Subtidal Habitat; the reports are not actual regulations but rather guidelines. These reports contain recommended conservation goals for Bay habitats potentially affected by Project activities that can be used by permitting agencies when evaluating proposed projects within their jurisdiction. They are supported by most of the agencies and non-governmental groups with major planning, operational, or regulatory interests in Bay Area wetlands. Although the Goals Project has no regulatory authority, any adverse effects on wetlands, shorelines, and subtidal habitats would also have potential negative effects on special status species, critical habitat for federal listed species, managed fish species, essential fish habitat, or habitat for protected marine mammals. The Subtidal Goals Project prioritizes conservation goals for the following subtidal habitats: soft substrate, rock habitat, artificial structures, and shellfish beds. This Project will protect and enhance both baylands and subtidal habitats by protecting existing bay lands, and creating new soft bottom subtidal habitat through the construction of the proposed Bay inlet.

The East Bay Regional Park District manages the MLK Regional Shoreline. The removal of the Edgewater Seasonal Wetland would conflict with the EBRPD Master Plan. The building and transfer of the new proposed freshwater marsh to the East Bay Regional Park District is proposed to mitigate for the removal of the Edgewater Seasonal Wetland.

As discussed above in Impacts Bio 1 through Bio 4, the proposed Project has the potential to impact biological resources, which could conflict with applicable local policies or ordinances protecting biological resources. However, with the implementation of the City of Oakland SCAs and the Mitigation Measures described above, the proposed Project would be built in a way to support the goals of the BCDC Bay Plan, Goals Project and the Subtidal Goals Project, and the East Bay Regional Park District Master Plan.

Conflicts with Tree Protection Ordinance

Coliseum District and Plan Buildout

Impact Bio-5: Future development (at the Coliseum District and pursuant to Plan Buildout) would not fundamentally conflict with the City of Oakland Tree Protection Ordinance by removal of protected trees under certain circumstances. **(LTS)**

Protected trees under the City's Tree Protection Ordinances are Coast live oak (four inches or larger in diameter, measured four and a half feet above the ground) or any other species nine inches in diameter or larger, except Eucalyptus and Monterey Pine trees. Prior to removal of any protected tree within the Project Area, the permit criteria for tree removal (section 12.36.050) will be reviewed and a tree removal permit approved with the City of Oakland. Pursuant to SCA Bio-6, all conditions, procedures and protections for approval (section 12.36.060) shall be implemented before and during removal of protected trees. It is anticipated that most of the protected trees to be removed within the Project Area are non-native, ornamental species. Pursuant to SCA Bio-7, removed trees will be replaced by new trees which will contribute to the visual framework of the Project Area. In addition, as part of the proposed Project, enhancement and restoration of natural habitats and vegetation along sloughs and creeks will be implemented.

Conflicts with Creek Protection Ordinance

Coliseum District and Plan Buildout

Impact Bio-6: New development (at the Coliseum District and pursuant to Plan Buildout) would not fundamentally conflict with the City of Oakland Creek Protection Ordinance. **(LTS with SCAs)**

The proposed development would not conflict with the City of Oakland Creek Protection, Storm Water Management and Discharge Control Ordinance because Project designs include extensive riparian habitat and hydrology improvements to Damon Slough and part of Elmhurst Creek. Currently Elmhurst Creek is mostly an open channel through the Coliseum District, separating the Coliseum and Arena from the adjacent surface parking lot. There is no public access to the creek because it is within private property and fenced. The creek is lined with degraded coastal scrub and ruderal vegetation. Although Option C for Elmhurst Creek would permanently fill 1,500 linear feet of creek and bank, it would create 975 linear feet of new creek and bank as it is realigned to Damon Slough. Restoration of the new creek banks would include high quality coastal scrub and riparian vegetation that would benefit wildlife, such as birds, and would be designated as open space for public enjoyment.

Additional creek enhancements would include the "Cruise America" parcel north of Damon Slough to be transformed into a tidal wetland and designed to be self-sustaining in hydrological and habitat function. As part of the design, Damon Slough, which was listed as an impaired waterway by the RWQCB and EPA, would also be restored to enhance and increase the coastal scrub and coastal wetland habitat value along the Coliseum District segment of the slough. To ensure that Damon Slough can manage additional flow capacity from the realigned Elmhurst Creek, a low-flow channel will be established within which stormwater run-off would be conveyed to the Bay. The slough/mud flat habitat between the low-flow and high-flow channels will be enhanced as well.

No changes are proposed for San Leandro Creek.

Standard Conditions of Approval

All work conducted to improve Damon Slough, realign Elmhurst Creek to connect with Damon Slough, and to culvert and fill portions of Elmhurst Creek would be conducted pursuant to a City of Oakland Creek Protection Permit as required under SCA Bio-11, and would be implemented in accordance with the detailed performance requirements as list in SCA Bio-13, -14 and -15. By obtaining the required Creek Protection permit(s) and conducting the work in accordance with those permits, any impacts would be **less than significant**.

Cumulative Impacts

Impact Bio-7: Construction activity and operations of adoption and future development (at the Coliseum District and pursuant to Plan Buildout) in combination with past, present, existing, approved, pending and reasonably foreseeable future projects, would result in impacts on special-status species, sensitive habitats, wildlife movement corridors, wetlands, and other waters of the U.S. **(Significant and Unavoidable)**

The cumulative analysis considers the effect of the proposed Project in combination with past, present, existing, approved, pending and reasonably foreseeable future projects within and in the vicinity of the Project Area (as described in Chapter 4.0 of this Draft EIR).

The Project Area largely includes areas that have previously been developed, but which are along or adjacent to creeks, sloughs, wetlands, and San Leandro Bay. Future development under the proposed Project will adhere to the City's SCAs Bio-1 through Bio-16, with details of implementation as provided above, as well as the mitigation measures listed in this EIR, which will ensure that potential impacts to protected species and habitat are less than significant.

Environmentally protective laws and regulations have been applied with increasing rigor since the early 1970s and include the CESA, FESA, and the CWA, as described earlier in this chapter. Adoption and development under the Specific Plan, as well as other future projects which may be upstream along the Project Area's waterways or directly or indirectly impact San Leandro Bay, would be required to comply with local, state, and federal laws and policies and all applicable permitting requirements of the regulatory and oversight agencies intended to address potential impacts on biological resources, including waters of the U.S., and special-status species. Additionally, future projects would be required to demonstrate that they would not have significant effects on these biological resources, although it is possible that some projects may be approved even though they would have significant, unavoidable impacts on biological resources.

That said, the proposed Bay Inlet cut and the fill and development of the Edgewater Seasonal Wetland will be subject to numerous subsequent permitting and regulatory requirements of outside regional, state and federal agencies. Not until such time as the details of those project elements are known, permits from responsible agencies are sought, and the requirements and conditions of the responsible regulatory agencies specific to these Project elements are fully known, can any determination be made as to the efficacy of mitigation strategies.

Standard Conditions of Approval

The implementation of SCAs Bio-1 through Bio-16, following the application details specified for SCA Bio-3 under Impact Bio-4, SCA Bio-5 under Impacts Bio-1A and Bio-4, and SCA Bio-12 under Impacts Bio-1A and Bio-1B, would reduce the impacts of the proposed Project, and its contribution to significant

cumulative impacts on biological resources. This reduction would not reduce all impacts to a less than significant level, however, and so further mitigation measures are required.

Mitigation Measures

The implementation of Mitigation Measures Bio 1A-1, 1A-2, 1A-3, 1B-1, 1B-2, 2A-1, 2A-2, 2A-3, 2A-4, 2A-5, 2A-6, 4-1, and 4-2 will reduce impacts on biological resources from the proposed Project, and its contribution to significant cumulative impacts on biological resources.

Significance after Mitigation

Overall, considering development under the proposed Project with implementation of the cited SCAs as directed and Mitigation Measures, with effects of past, present, pending and reasonably foreseeable future projects within the geographic context for this analysis, the cumulative effect on biological resources would be generally be less than significant. Given the possible wide-ranging impacts of the proposed Bay Inlet cut and the filling and development of Edgewater Seasonal Wetland, however, which will remain unknown in their scope and magnitude until the details of those projects are determined, the cumulative impact of the proposed Project on biological resources must be considered **significant and unavoidable**.

4.4

Cultural and Historic Resources

This section provides background information on cultural and historic resources located within the Project Area. It describes the relevant environmental and regulatory settings, evaluates potential impacts to these resources that would result from implementation of the proposed Project, and identifies Standard Conditions of Approval (SCAs) or mitigation measures that would avoid or minimize potential impacts, when appropriate.

Environmental Setting

The following section presents a summary of the paleontological, prehistoric, ethnographic, and historic settings pertaining to the Project Area. These settings will be used to evaluate the paleontological and prehistoric and historic period archaeological sensitivity, as well as built environment resources (e.g., buildings, bridges, railroads) located within the Project Area.

Paleontological Setting

According to the geotechnical and geological data review, fossil locality search, and literature and map review, at least seven distinct strata are locally mapped and correlated from youngest to oldest as: Artificial fill (Af), Quaternary young Bay Mud (Qybm), Quaternary Alluvium (Qa), Quaternary Posey Formation (Qpf), Quaternary San Antonio Formation (Qsaf), Quaternary Old Bay Mud (Qobm), and Quaternary Alameda Formation (Quaf). The strata appear to be variably continuous and discontinuous, as well as overlapping due to variations in landscape setting, erosion, historic land use patterns, and historic development. The surface strata of the Project Area consist of a variable veneer of historic and modern artificial fill (Af) that was placed to raise the elevation of bay margin for development. The fill consists of a mix of local and imported material. The deposits below the Qa, such as the Posey Formation, fossil-baring San Antonio Formation (Pleistocene locality PI MF22133—Rancholabrean age mammals (e.g., fossil horse), amphibians (e.g., salamander), rodents, reptiles, birds, fish, deer (Radbruch 1969) and the fossiliferous Alameda Formation (Lawson 1914), date to the Late Pleistocene and earlier (Savage 1951; Atwater et al. 1977; Dibblee 1980), when the coast of the Pacific Ocean was 25 to 50 kilometers to the west. Due to the position on the landscape and the age of the deposits, such deposits are considered to have high potential for the presence of paleontological resources (see the discussion under Impact CH-3 below).

Prehistoric Setting

Archaeological investigations throughout the San Francisco Bay Area and elsewhere seek to explain past human behavior, culture continuity, and change. Archaeological interpretation of material remains can address many aspects of human behavior, including when people occupied an area and at which time of the year; the technological and natural resources available; social organization; settlement patterns; relationships with neighboring groups in terms of trade, competition, and conflict; ceremonial systems; and external environmental issues that confronted indigenous populations. Current archaeological

research seeks to explain a wide array of questions regarding prehistoric human culture and adaptive responses.

Archaeological research throughout the San Francisco Bay Area region has resulted in the documentation of numerous prehistoric habitation sites. These early archaeological sites were typically situated near the shoreline of lakes, marshes, creeks, and rivers. Archaeologists now recognize three general patterns of cultural adaptation throughout the Central Valley Region based on artifact assemblages and mortuary practices during the period between 5000 Before Present (B.P.)[1] and 200 B.P. The three primary time periods are the Early Period (5000–2500 B.P.), the Middle Period (2500–1300 B.P.), and the Late Period (1300–200 B.P. or contact). Fredrickson (1973, 1974, and 1994) delineated distinct time-period divisions based on general economic, technological, and mortuary traits. He further introduced three cultural patterns, the Windmiller, Berkeley, and Augustine Patterns, to the Early, Middle, and Late horizons of the California Central Taxonomic System (CCTS) (Rosenthal et al. in Jones and Klar 2007:154). These patterns are briefly described below.

The Early Period/Windmiller Pattern (5000–2500 B.P.) is divided into the Early, Middle, and Late Windmiller, named for the Windmiller Pattern first identified in the Sacramento–San Joaquin Delta as the oldest archaeological complex (Lillard et al. 1939). The Windmiller Pattern is thought to be composed of a mixed economy of game procurement and the use of wild plant foods. The archaeological assemblages of this period contain numerous projectile points, including large obsidian concave base and stemmed points and rectangular *Olivella* beads with a wide range of faunal remains (Erlandson and Jones eds. 2002). The Windmiller Pattern reflects a seasonal adaptation in which habitation sites in the valley were occupied during the winter months and summer camps were inhabited in the foothills (Rosenthal et. al. in Jones and Klar 2007:154; Moratto 1984:201-207).

The Middle Period/Berkeley Pattern (2500-1300 B.P.) shifted to a more specialized adaptation called the Berkeley Pattern, which spanned approximately 1,200 years. Fredrickson (1974) defined the Berkeley Pattern based on the economic adaptive strategies developed around the extensive and rich resources of the area. Deeply stratified midden deposits, which developed over generations of occupation, are common to Berkeley Pattern sites exemplified by the Emeryville Shellmound (CA-ALA-309) southwest of the project area on the east shore of the San Francisco Bay. These middens contain numerous milling and grinding stones for food preparation. Early representations of the Berkeley Pattern resemble the Windmiller Pattern but shift to larger occupation sites located near water sources with the presence of projectile points and atlatls (Rosenthal et. al. in Jones and Klar 2007:156; Hughes 1994; Moratto 1984:207-211). There are no recorded middens in the Project Area.

The Late Period/Augustine Pattern (1300 B.P.–contact) followed the Berkeley Pattern. The Augustine Pattern exhibits elaborate ceremonial and social organization, and the development of social stratification. Exchange became well developed, and an even more intensive emphasis was placed on the use of acorns, as evidenced by the presence in the archaeological record of shaped mortars and pestles and numerous hopper mortars. Other traits associated with the Augustine Pattern include the introduction of pre-interment burning of offerings in a burial pit during mortuary rituals, increased village sedentism, population growth, and an incipient monetary economy in which beads were used as a standard of exchange (Rosenthal et. al. in Jones and Klar 2007:157; Moratto 1984:211-214).

While no prehistoric sites have been identified directly within the Project Area, three prehistoric sites, CA-ALA-321, -322, and -323 (also known as N-321, -322, -323, respectively) have been tentatively

[1] Before Present is considered to commence at the year 1950.

recorded as located just outside the eastern boundary of the Project Area. These three resources are prehistoric shellmounds that Nels Nelson recorded in the early 1900s (Nelson 1909). They reportedly consisted of shellfish and robust deposits representing long term, prehistoric Native American habitation of the area. The historic shoreline was a highly desirable place for human occupation providing access to an abundance of marine food resources and fresh water from tributary creeks. During a separate project, geoarchaeological testing conducted to identify these three sites beneath approximately 12 feet of artificial fill overlaying Hegenberger Road (Siskin and Steinkamp 2011) did not result in the identification of archaeological deposits.

Ethnographic Setting

The Project Area is located within the area that is ethnographically attributed to the *Ohlone* (also known as *Costanoan*). The term Costanoan derives from the Spanish word *Costaños* or "coast people" and refers to an ethno-linguistic group of people that lived along the San Francisco peninsula before contact with European Americans. Ethnographic and ethnohistoric information about the Ohlone derives primarily from the accounts of early explorers and missionaries. The territory of the Ohlone is purported to have extended from the Central Coast Ranges between San Pablo Bay in the north and Monterey in the south. The Ohlone tribal territory boundary in the east is not precisely known but is understood to extend to the Mount Diablo Range (Kroeber 1925:462; Moratto 1984:225).

The Ohlone spoke a language considered to be one of the eight major subdivisions of the *Miwok-Costanoan*, as categorized by linguistics, which belonged to the *Utian* family within the *Penutian* language family (Shipley 1978:82-84). Linguistic evidence suggests that the Ohlone entered the San Francisco and Monterey Bay areas about 1500 B.P. (Levy 1978:486). The Ohlone were politically organized by tribelets, each having a designated territory. A tribelet consisted of one or more villages and camps in a territory designated by physiographic features. Tribelets generally had 200 to 250 members (Levy 1978:485; Margolin 1978:1). Each tribelet consisted of villages every three to five miles (as noted by early Spanish explorers) that contained an average of 60 to 90 persons (Milliken 1995:19). The current study area is located within the *Huchiun* triblet ethnographic territory, where *Chochenyo*/*East Bay Costanoan* was the common spoken language (Levy 1978:485; Margolin 1978:2).

The acorn was among the most important food resources for Ohlone, who preferred tanbark oak, valley oak, and California black oak, abundant in the area. The large stands of oak tree acorns created a readily accessible staple. These could be stored in granaries and used through the winter months. The acorns were ground into meal and leached to remove tannins. Other important food resources were buckeye nuts, which were leached and made into a mush, and the seeds of dock, gray pine, and tarweed, all of which were roasted in baskets with hot coals before being eaten. The Ohlone gathered berries and fruits including gooseberries, blackberries, madrone, and wild grapes along with root resources such as wild onion, cattail, and wild carrot (Levy 1978:491).

Shellfish and marine mammals were important resources in the Ohlone diet in general, particularly for coastal populations. Midden deposits found in shellmounds throughout the Bay Area attest to the importance of shellfish in the Ohlone diet. Terrestrial mammals were also important to coastal and inland Ohlone populations including rabbits, black-tailed deer, Tule elk, and pronghorn sheep, which were hunted and trapped using drive and snare methods. Hunting parties were communal, often involving bulk harvesting meat for immediate consumption or for winter storage for the various village groups (Lightfoot and Parrish 2009:212). Migratory waterfowl, particularly geese, ducks, and coots, were the most important avian resources and were captured with nets. The Ohlone fished for salmon, sturgeon, and lampreys, and built Tule *balsas* (rafts) to move about the waterways. The Ohlone traded with surrounding tribes such as the Miwok (to the northeast), and the *Northern Valley Yokuts* (to the

east). Mussels, abalone shells, dried abalone, and salt were exchanged for *piñon* nuts with the Yokuts. *Olivella* shells (the shell of a small predatory sea snail) were traded with the Sierra Miwok and bows with the Plains Miwok (Levy 1978:488).

Between 1770 and 1797, six missions were set up within the Ohlone territory (Margolin 1978:160). In 1770, the Ohlone population was estimated to be between 7,000 and 10,000 (Moratto 1984:225). Based on mission records, Milliken estimates that there were 2.5 people per square mile (Milliken et al. 1993:25). As a result of numerous stressors including the introduction of European diseases; the loss of traditional lifeways, including their settlement and subsistence practices; reduced birth rates; and poor working and living conditions that they were forced to endure, the Ohlone population dramatically and rapidly declined to fewer than 2,000 by 1832 (Milliken 1995). For native peoples who lived in tribelets, the loss of this many members would destabilize what little remained of their traditional social structure.

Since the 1980s, the modern Ohlone community has undergone a period of revitalization based on familial ties and former rancheria affiliations. Although they have yet to receive formal recognition from the federal government, the Ohlone are becoming increasingly organized as a political unit in the San Francisco Bay Area. Today, the Ohlone continue to live in and around Alameda County and despite more than a century of adversity, they continue to engage in traditional cultural practices and advocate for the preservation of their heritage.

Historic Setting

The Project Area remained largely unsettled by Spanish colonists until Don Luis Maria Peralta received the approximate 44,800-acre Rancho San Antonio in appreciation of his extensive military service at the Presidios of Monterey and San Francisco. One of the largest and oldest ranchos, it included the majority of what is now Alameda County, including the cities of Oakland, Berkeley, Alameda, Emeryville, Piedmont, and a portion of San Leandro. Peralta's land grant was confirmed when California became a Mexican Territory following Mexico's independence from Spain in 1822, and when the United States annexed the state following the 1848 Treaty of Guadalupe Hidalgo (Goetter and Merritt-Greenwald 2009:15). In 1842, Peralta divided Rancho San Antonio between his four sons. Ygnacio Peralta's 9,500-acre inheritance and Antonio Peralta's 15,200-acre bequest encompassed the Project Area. The remaining land was divided between their brothers, Vicente and Domingo Peralta (Bagwell 1983:10-11; JRP Historical Consulting 2000:9).

Following California's admission into the Union in 1850, Horace Carpentier successfully gained control of Oakland's waterfront when he, along with his cronies Edson Adams and Andrew Moon, squatted on Vicente Peralta's inherited land and struck a deal to lease three 160-acre parcels near the start of present-day Broadway along the Oakland Estuary (north of the Project Area). The men subsequently platted the parcels and began selling lots. In 1854, Carpentier used his influence at the State legislature to incorporate the small community as Oakland, and in turn, city trustees granted the waterfront and tidelands to him in exchange for constructing several wharves and a schoolhouse (Praetzellis and Praetzellis 2004:33; Rawls and Bean 2003:180). In 1863, the San Francisco & Oakland Railroad (SF&ORR) constructed the city's first rail tracks along 7th Street west to the Oakland Point wharf, where passengers boarded ferries bound for San Francisco (Waterfront Action 2008). The construction of the SF&ORR and the Oakland Point wharf spurred Oakland's economy as early entrepreneurs sought to capitalize on the city's new rail and ferry connections and advantageous location on the San Francisco Bay (Praetzellis and Praetzellis 2004:33). During this period of early transit development, the San Francisco & Alameda Railroad was constructed in 1865 from Alameda south through the Project Area to Hayward (JRP Historical Consulting 2000:9).

Commercial and industrial use of Oakland's waterfront increased notably following the arrival of the Transcontinental Railroad. The 1862 Pacific Railway Act authorized the Central Pacific Railroad (CPRR), under the ownership of the "Big Four" (Collis P. Huntington, Mark Hopkins, Leland Stanford and Charles Crocker), to build the western half of this massive rail system. In 1868, recognizing the economic importance of the Transcontinental Railroad, Carpentier formed the Oakland Waterfront Company in partnership with the CPRR. He granted a controlling interest in his waterfront holdings in exchange for the selection of Oakland over San Francisco as the railroad's western terminus (Rawls and Bean 2003:180). As part of the deal, the CPRR also assumed control of the SF&ORR and also constructed the rail segment from Oakland to Sacramento to connect with the Transcontinental Railroad tracks heading east. This rail segment incorporated the existing San Francisco & Alameda Railroad tracks running through the Project Area (Praetzellis and Praetzellis 2004:34-36; JRP Historical Consulting 2000:10).

The arrival of the Transcontinental Railroad transformed Oakland into a bustling transportation hub. Businesses established warehouses, canneries, lumber mills, and manufacturing plants along the waterfront, and the Oakland Estuary north of the Project Area began to take on an industrial character. With direct access to the railroad and industrial piers, nearby companies could easily harvest raw materials and transport goods to market (City of Oakland and Port of Oakland 1999:10-12; Praetzellis and Praetzellis 2004:33). In comparison, the area to the south around San Leandro Bay remained largely undeveloped. The estuary's creeks and sloughs meandered through the area and drained into the bay creating mudflats, tidal sloughs, and fresh and salt water marshes (Richard 1995:31). These creeks and sloughs extending through the Project Area include East Creek and Damon sloughs and Lion, Arroyo Viejo, Elmhurst, and San Leandro creeks. Other than the SPRR tracks, late nineteenth century development within the Project Area consisted of the short-lived Pacific Race Track, which George Treat, A. W. Swett, and Lloyd Tevis opened in 1876, and several landings, including Damon's Landing, which was established by Nathanial Damon along Lion Creek, Clark's Landing along East Creek slough, and Fitchburg Landing located approximately at the mouth of the present-day Elmhurst Creek (Henkenius 1888; Halley 1876:280). The latter landing was established to serve the prospective development of Fitchburg, named after Colonel Henry S. Fitch, who unsuccessfully attempted to purchase the land that became Oakland prior to Carpentier and his cohort (JRP Historical Consulting 2000:9). According to late nineteenth century maps, it was approximately bounded by San Leandro Road (now International Boulevard) to the north, Fitch Street to the east, San Leandro Bay to the south (accessed by Fitch Landing), and Mary Street to the west. The SPRR railroad tracks bisected the development north-south (Henkenius 1888). Although appearing on paper maps, the community, however, was not developed until the early twentieth century.

In 1909, the City of Oakland finally wrested control of the waterfront from the Southern Pacific Railroad (SPRR), which had previously subsumed the CPRR into its vast rail system, and established a municipal port north of the Project Area (City of Oakland 2002:4.6-7). A wave of development followed the shoreline acquisition, including new municipal docks and wharves (City of Oakland and Port of Oakland 1999:12). Shortly thereafter, the City authorized the Western Pacific Railroad (WPRR) to construct a two-mile long mole on infill land located north of newly-completed training walls, thereby breaking the SPRR's monopoly on Oakland's port. The WPRR also constructed tracks extended from the waterfront and south through the Project Area just north and parallel to San Leandro Street and the SPRR tracks (City of Oakland 2002:4.6-7).

That same year, Oakland annexed over 30 square miles of land, including Fitchburg and the nearby communities of Elmhurst, Fruitvale, and Claremont. However, residential development did not intensify following the annexation, because Fitchburg still lacked access to a streetcar line to downtown Oakland. Despite this, a few entrepreneurial homeowners did build houses, including the residence at 728 – 73rd

Street (now demolished) in the Project Area. Residential construction largely did not occur until the 1920s, with single-family, detached bungalows lining the blocks north of San Leandro Street (JRP Historical Consulting 2000:11). These residences, which were built at the east end of the Project Area, were demolished in the 1960s to create the parking lot servicing the adjacent Bay Area Rapid Transit (BART) Coliseum/Oakland Airport station.

Immediately west of the Project Area, the Oakland Municipal Airport was first developed on Bay Farm Island in 1927 and became the starting and ending location for many early experimental flights, including those by Charles Lindbergh and Amelia Earhart (JRP Historical Consulting 2000:11). This original airport construction became known as the North Airport following a major expansion of the facility in the early 1960s. This expansion included construction of the Oakland International Airport and extensive landfilling and dredging and channelization of nearby sloughs in the San Leandro Bay estuary (JRP Historical Consulting 2000:11-12). Due in part to the close proximity to the new airport, the Project Area began to be filled in with commercial and light industrial properties, particularly along the south side of San Leandro Street in the 1940s. This included extant properties such as 6815, 6905, 6925 and 7217 San Leandro Street. During this time and continuing through the early 1950s, the sloughs and creek running through the Project Area were also channelized. Sections of Arroyo Viejo and Lions creek were lined with concrete, and bridges spanning them were upgraded (JRP Historical Consulting 2000:12-13).

Transit throughout the Project Area also improved in the 1950s and 1960s as new routes were constructed. As part of national highway program following World War II, the East Shore Freeway (later Nimitz Freeway in 1958 and then I-880 in 1984) was constructed through the Project Area west and parallel to the SPRR and WPRR tracks. It already extended from the San Francisco-Oakland Bay Bridge to Richmond but was extended south to San Jose by 1950 (Caltrans 1998:6). In 1956 and 1963, sections of the freeway, including the segment running through the Project Area, were subsequently widened from six to eight lanes. Hegenberger Road, which had been established in the 1920s as a connection to the airport, was improved when the Hegenberger Road overpass was built along the eastern boundary of the Project Area in the 1960s, speeding traffic from the airport, over the SPRR and WPRR tracks, and along the corridor (JRP Historical Consulting 2000:14-15).

This improved transit infrastructure and infilling of land adjacent to the Oakland International Airport led to the development of many commercial and light industrial buildings within the southern portion of the Project Area in the 1960s. Warehouse Union Hall, designed by Oakland architect Herbert Johnson, at 99 Hegenberger Road, is architecturally notable. As shown in **Figure 4.4-1**, the building's suspended roof features two parabolic arches that support the roof from steel cables, which Johnson modeled after the Golden Gate Bridge (Rosenstein 200:55). Several restaurants, hotels, and parking lots catering to air travelers were also constructed in the Project Area along Hegenberger Road (JRP Historical Consulting 2000:12).

Warehouse Union Hall Circa 2014

Oakland Coliseum Arena Circa 1969

Figure 4.4-1
Photographs of Representative Historic Resources

In 1966, the City celebrated the completion of the Oakland Coliseum and Arena, which the architecture firm Skidmore, Owings & Merrill designed to great acclaim. The Coliseum featured an innovative design that sunk into the ground with a mid-level entry to the structure, rather than rising above ground with entrances at the ground story. This allowed the stadium to be constructed without visually distracting outer pedestrian ramps. It also featured an elegant circular design with an almost perfect round shape. In 1993, the California Council of the American Institute of Architects awarded the Coliseum and Arena with its Twenty-Five Year Award in recognition of the fact that it has "retained its central form and character, with the architectural integrity intact," and that it incorporated innovative design and structural techniques in a large-scale public setting that has stood the test of time (*Chicago Tribune* 1993). Exterior additions on the Coliseum in 1995 and the alteration of the Arena's façade in 1998 have altered the buildings' original appearance.

The last wave of large-scale development in the Project Area occurred in the 1970s, beginning with the completion of BART in 1972. This train system links Bay Area cities in Alameda, Contra Costa, San Francisco, and San Mateo counties, with the Coliseum/Oakland Airport BART station servicing the Project Area. At the time of its construction, BART featured a highly advanced engineering system and technology, including the nation's first Automatic Train Control system, which allows all train movements to be controlled remotely from a single control board at Oakland's Operations Center. It also built the world's longest underwater rapid transit twin tubes, connecting San Francisco and Oakland underneath San Francisco Bay (Duke 1999:8-9).

In 1976, the Martin Luther King Jr. Shoreline Regional Park was established as part of the East Bay Regional Parks along the western portion of the Project Area. The park was established in response to the Port of Oakland's project that filled in the 200-acre marsh area between Arrowhead Marsh and Pardee Road in 1970. Of the 2,000 acres of marshland surrounding San Leandro Bay, the regional park's approximate 71 acres are all that remain (Richard 1995:34).

Oakland Coliseum Complex

The Coliseum complex (which includes the Coliseum stadium and the Oakland Arena) was designed by Skidmore, Owings & Merrill, with Edward C. Bassett as partner-in-charge and Myron Goldsmith as senior designer (see **Figure 4.4-1**). Construction by the Guy F. Atkinson Company began in 1962, and was completed in 1965. The Oakland Raiders held their first games in the Coliseum and the Oakland Seals hockey team played their first games in the Arena in the fall of 1966, and the Oakland Athletics began playing their first games in the Coliseum in 1968.

Over the years, the Coliseum complex has won numerous awards, including:

- American Institute of Architects (AlA) Northern California Chapter Honor Award (1967),
- AlA San Francisco Chapter Honor Award (1967),
- American Society of Civil Engineers Award of Merit (1967),
- California State Legislature Resolution Recognizing Design Excellence (1967),
- American Iron and Steel Institute Best Design in Low Rise Construction (1969), and the
- AlA California Council 25 Year Award (1993).

As described in an article published in the *Oakland Heritage Alliance News*,[2]

> *"According to Robert Bruegmann, an authority on SOM at the University of Illinois at Chicago, Bassett and Goldsmith were leading figures at the most successful large corporate firm in America in translating European modernist ideas to this country. The Coliseum was one of the largest and most conspicuous examples of rational clarity in site plan and structural design. It is a major monument of American architecture and engineering of the 1960s."*

The same article quoted Allen Temko of the San Francisco Chronicle (1988) as describing the Coliseum and Arena as, "*unmatched in sports architecture. A spectacular interplay of related, curving shapes is set up by the two structures, unlike any other large scale spatial experience in ancient or modern architecture. Up close there is a sense of harmony and order, of simple heroic dignity, that is expressed in perfection of proportions and lines.*"

In 1996, the Coliseum underwent a major renovation which added over 10,000 seats in the upper deck that now spans the outfield when the stadium is in the baseball configuration. The effect of these new stands was to completely enclose the stadium, eliminating the view of the Oakland hills that had been the stadium's backdrop for 30 years. This 1996 addition certainly altered the physical characteristics of the Coliseum, but no assessment was conducted at that time (or since) to determine whether the 1996 addition materially altered in an adverse manner those physical characteristics of the Coliseum complex that conveyed its historical significance. It is conservatively assumed that the Coliseum complex still retains enough of its original physical characteristics as to remain a significant resource under the regulations of the California Environmental Quality Act (CEQA).

In 1998, the Arena also underwent a major renovation; the façade changes included minor alterations to its appearance from the original 1960's design.

Currently, the Oakland Coliseum is the only multi-purpose stadium in the United States that serves as a full-time home to both a Major League Baseball team (the Oakland Athletics) and a National Football League team (the Oakland Raiders).

The Oakland City Planning Department's Oakland Cultural Heritage Survey (OCHS) rates the Oakland Coliseum as "A" (Highest Importance) and the Arena as "B+" (Major Importance). The buildings are also rated as "1+", which means they are contributing structures to an Area of Primary Importance (i.e., the Coliseum complex). Therefore, the Oakland Coliseum, the Arena and the complex as a whole are on Oakland's Local Register of Historical Resources (Historic Preservation Element Policy 3.8) and are considered historical resources under CEQA. The buildings have not been listed in or formally evaluated

[2] Michael Corbett, OHA News, Winter 1996.

for listing in the National Register of Historic Places (NRHP), California Register of Historic Places (CRHR), or Local Register of Historical Resources or recorded on DPR 523B forms, but are considered to be historical resources under CEQA based on the OCHS ratings.

Regulatory Setting

The regulatory framework that mandates consideration of cultural and historic resources in project planning includes federal, state, and local governments. Paleontological resources include the fossilized remains of plants and animals and other evidence of past life, such as preserved animal tracks and burrows. Cultural resources include prehistoric and historic period archaeological sites; buildings, structures, districts, and objects over 45 years old; and sites of traditional and/or cultural importance to various groups. Cultural resources may be determined significant by applying national, state, or local criteria, either individually or in combination. The regulations and criteria applicable to cultural and historic resources are discussed below.

Federal

National Register of Historic Places

The City of Oakland considers properties listed in or determined eligible for listing in the National Register of Historic Places (NRHP) to be historical resources under CEQA. The NRHP is the nationwide inventory of districts, sites, buildings, structures, or objects that are significant in prehistory or history at the national, state, or local level. Significance is determined using the NRHP's four Criteria for Evaluation in 36 Code of Federal Regulations (CFR) 60.4, which state that a historic property is any district, site, building, structure, or object that:

- Is associated with events that made a significant contribution to the broad patterns of our history (Criterion A);
- Is associated with the lives of persons significant to our past (Criterion B);
- Embodies the distinctive characteristics of a type, period, or method of construction; or that represents the work of a master, or that possesses high artistic values; or that represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C); and/or,
- Has yielded, or may be likely to yield, information important in prehistory or history (Criterion D).

Archaeologists generally evaluate archaeological resources using Criterion D in order to determine their potential to yield information. Criterion D emphasizes the importance of the information encompassed in an archaeological site rather than its inherent value as a surviving example of a particular architectural type or its historical association with an important person or event.

If the State Historic Preservation Office (SHPO) determines that a cultural resource is eligible for inclusion in the NRHP, then it is automatically eligible for the California Register of Historical Resources (CRHR). If a resource does not retain the level of integrity necessitated by the NRHP, it may still be eligible for the CRHR, which allows for a lower level of integrity (see below).

National Register of Historic Places Criteria for Historic Districts

A historic property can be listed in the NRHP both individually and as a contributor to a historic district. The NRHP defines a historic district as possessing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical

development. Therefore, a resource can contribute to a historic district by belonging to a group of identifiably linked properties or features that collectively convey their significance under the NRHP criteria. A historic district can be eligible even if all the components lack individual distinction, provided that the grouping achieves significance as a whole within its historic context.

National Register of Historic Places Seven Aspects of Integrity

Cultural resources integrity is determined using the NRHP's seven aspects of integrity at 36 CFR 60.4, which state that a historic property must not only be shown to be significant under the NRHP criteria, but it also must retain integrity appropriate to its significance. The seven aspects of integrity include location, design, setting, materials, workmanship, feeling, and association. A property must meet one or more of the Criteria for Evaluation before a determination can be made about its integrity.

State

California Environment Quality Act

The California Environment Quality Act (CEQA) Statutes and Guidelines (Title 14 of the California Code of Regulations 15064.5) include procedures for identifying, analyzing, and disclosing potential adverse impacts to historical resources, which include all resources listed in or formally determined eligible for the NRHP, the CRHR, or local registers. CEQA further defines a "historical resource" as a resource that meets any of the following criteria:

- A resource listed in, or determined to be eligible for listing in, the NRHP or CRHR.
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code (PRC), unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- A resource identified as significant (e.g., rated 1-5) in a historical resource survey meeting the requirements of PRC Section 5024.1(g) (Department of Parks and Recreation [DPR] Form 523), unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the CRHR.

California Register of Historical Resources

The City of Oakland considers properties listed in or determined eligible for listing in CRHR to be historical resources under CEQA. The CRHR is a state-wide program of similar scope to the NRHP. It is a listing of resources that are significant within the context of California's history and includes all resources listed in or formally determined eligible for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR. A historical resource must be significant at the local, state, or national level under one or more of the following four criteria (Criteria 1-4) defined in the California Code of Regulations (CCR) Title 14, Chapter 11.5, Section 4850:

- It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States (Criterion 1);
- It is associated with the lives of persons important to local, California, or national history (Criterion 2);
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values (Criterion 3);
- It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation (Criterion 4).

The CRHR criteria are similar to the NRHP criteria, and are tied to CEQA, as any resource that meets the above criteria is considered a historical resource under CEQA.

California Register of Historical Resources Seven Aspects of Integrity

The CRHR defines integrity similar to the NRHP and uses the same seven aspects of integrity of location, design, setting, materials, workmanship, feeling, and association. A resource that does not retain a sufficient level of integrity for listing in the NRHP, however, may still be eligible for listing in the CRHR if it maintains the potential to yield significant scientific or historical information or specific data or it was moved to prevent its demolition. The new location must be compatible with the original character, use, orientation, and setting (California Office of Historic Preservation 2001).

Regulations Concerning Discovery of Human Remains

California Public Resources Code §5097.98 (notification of Native American human remains, descendants; disposition of human remains and associated grave goods) mandates that the lead agency adhere to the following regulations when a project results in the identification or disturbance of Native American human remains:

- Whenever the Native American Heritage Commission (NAHC) receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The descendants shall complete their inspection and make their recommendation within 24 hours of their notification by the commission. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials.
- Whenever the NAHC is unable to identify a descendent, or the descendent identified fails to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the descendent, and the mediation provided for in subdivision (k) of Section 5097.94 fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.

- Notwithstanding the provisions of Section 5097.9, the provisions of this section, including those actions taken by the landowner or his or her authorized representative to implement this section and any action taken to implement an agreement developed pursuant to subdivision (l) of Section 5097.94, shall be exempt from the requirements of the California Environmental Quality Act [Division 13 (commencing with Section 21000)].
- Notwithstanding the provisions of Section 30244, the provisions of this section, including those actions taken by the landowner or his or her authorized representative to implement this section, and any action taken to implement an agreement developed pursuant to subdivision (1) of Section 5097.94 shall be exempt from the requirements of the California Coastal Act of 1976 [Division 20 (commencing with Section 30000)].

Senate Bill 18

Senate Bill (SB) 18 requires local governments to consult with Native American tribes when adopting or amending general plans or specific plans. The legislation provides the opportunity for tribes to participate in local land use decisions early in the planning process in order to protect or mitigate impacts to cultural resources. According to the *Tribal Consultation Guidelines: Supplement to General Plan Guidelines* (California Office of Planning and Research 2005), local governments must implement the following procedures:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government's jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code §65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county's jurisdiction. The referral must allow a 45-day comment period (Government Code §65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.
- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code §65092).

Under SB 18, local governments must consult with tribes under two circumstances:

- On or after March 1, 2005, local governments must consult with tribes that have requested consultation in accordance with Government Code §65352.3. The purpose of this consultation is to preserve, or mitigate impacts to, cultural places that may be affected by a general plan or specific plan amendment or adoption.
- On or after March 1, 2005, local governments must consult with tribes before designating open space, if the affected land contains a cultural place and if the affected tribe has requested public notice under Government Code §65092. The purpose of this consultation is to protect the identity of the cultural place and to develop treatment with appropriate dignity of the cultural place in any corresponding management plan (Government Code §65562.5).

Paleontological Resources

The primary California state environmental law protecting paleontological resources, or fossils, is CEQA (Public Resources Code Section 21000 et seq.). CEQA requires that public agencies and private interests identify the environmental consequences of their proposed projects on any object or site of significance to the scientific annals of California (Division I, California Public Resources Code Section 5020.1 [b]).

Under the CEQA Guidelines section 15064.5 (a) (2), public agencies must treat all historical and cultural resources as significant unless the preponderance of evidence demonstrates that they are not historically or culturally significant. This position is held because fossils are uncommon and only rarely will a fossil locality yield a statistically significant number of specimens representing the same species. In fact, some types of fossils, such as all fossil vertebrates, are so uncommon that, in most cases, each fossil specimen found will provide additional important information about the characteristics or distribution of the species it represents.

Due to the rarity of fossils and the scientific information they provide, a resource can be considered significant if it meets any of the following criteria (Society of Vertebrate Paleontology [SVP] 1995, Scott and Springer 2003):

- The paleontological resource provides data on the evolutionary relationships and developmental trends among organisms, both living and extinct.
- The paleontological resource provides data useful in determining the age(s) of the geologic unit or stratigraphy, as well as timing of associated geological events.
- The paleontological resource provides paleoecological information pertaining to biological community development and zoological/botanical biota interaction of the past.
- The paleontological resource demonstrates unusual or spectacular circumstances in the history of life.
- The paleontological resource is not abundant or found in other geographic locations and may be in danger of being depleted or destroyed by the elements or vandalism.
- The paleontological resource is considered a type or topotype specimen.

Thus, the SVP (1995) identifies vertebrate fossils, large (macro) or small (micro), any associated invertebrate fossils, plant fossils, trace fossils (animal tracks and/or burrows), or any other data that provides taphonomic, taxonomic, phylogenetic, ecologic, and/or stratigraphic information as significant, nonrenewable paleontological resources.

Paleontological resources must be identifiable to determine if any of the criteria above is applicable. Proper identification of paleontological resources is often difficult in the field, therefore the salvaging, preparation, and analysis of paleontological resources is necessary to determine their significance (SVP 1995). Additionally, many significant microvertebrate fossils (e.g., small mammal, bird, reptile, or fish remains) are generally not visible to the naked eye in the field and are salvaged and identified by the processing of sediment concentrate collected from productive, paleontologically sensitive, geologic units that have been wet-screened in the field (SVP 1995; Scott and Springer 2003). To be scientifically valid, significance determinations must be made by, or made under, the supervision of a qualified paleontologist (SVP 1995).

In common with other environmental disciplines such as archaeology and biology (specifically in regard to listed species), the SVP (1995) considers any fossil specimen significant, unless demonstrated

otherwise, and, therefore, protected by environmental statutes. An individual fossil specimen is considered scientifically significant if it is:

- Identifiable;
- Complete;
- Well preserved;
- Age diagnostic;
- Useful in paleo-environmental reconstruction;
- A type or topotypic specimen;
- A member of a rare species;
- A species that is part of a diverse assemblage; or
- A skeletal element different from, or a specimen more complete than, those now available for that species.

All identifiable vertebrate fossils are considered scientifically important due to their potential use in providing relative age determinations and paleo-environmental reconstructions for the sediments in which they occur. Although fossil plants are usually considered of lesser importance since they are less helpful in age determination, they are actually more sensitive indicators of their environment and as sedentary organisms, are more valuable than mobile animals for paleo-environmental reconstructions. For marine sediments, invertebrate and marine algal fossils, including microfossils, are scientifically important for the same reasons that land mammal and/or land plant fossils are valuable in terrestrial deposits (Miller 1971). The value or importance of different fossil groups varies depending on the age and depositional environment of the geologic unit that contains the fossils.

Local Regulations

City of Oakland General Plan Historic Preservation Element

Adopted in 1994 and amended in 1998, the City of Oakland's Historic Preservation Element of the General Plan delineates a broad "Historic Preservation Strategy" to "provide a broad, multifaceted historic preservation strategy that addresses a wide variety of properties, and is intended to help revitalize Oakland's districts and neighborhoods and secure other preservation benefits" (City of Oakland 1998). The Historic Preservation Element establishes two broad goals:

Goal 1: To use historic preservation to foster the economic vitality and quality of life in Oakland by:

- Stressing the positive community attributes expressed by well-maintained older properties;
- Maintaining and enhancing throughout the City the historic character, distinct charm, and special sense of place provided by older properties;
- Establishing and retaining positive continuity with the past thereby promoting pride, a sense of stability and progress, and positive feelings for the future;
- Stabilizing neighborhoods, enhancing property values, conserving housing stock, increasing public and private economic and financial benefits, and promoting tourist trade and interest through preservation and quality maintenance of significant older properties;

- Preserving and encouraging a city of varied architectural styles and environmental character reflecting the distinct phases of Oakland's cultural, social, ethnic, economic, political, and architectural history; and
- Enriching the quality of human life in its educational, spiritual, social, and cultural dimensions through continued exposure to tangible reminders of the past.

Goal 2: To preserve, protect, enhance, perpetuate, use, and prevent the unnecessary destruction or impairment of properties or physical features of special character or special historic, cultural, educational, architectural or aesthetic interest or value. Such properties or physical features include buildings, building components, structures, objects, districts, sites, natural features related to human presence, and activities taking place on or within such properties or physical features.

The Historic Preservation Element also describes policies for the identifying, designating, and preserving Oakland's cultural resources. These policies seek to minimize significant impacts to historical resources. Relevant policies for the proposed Project are listed below (City of Oakland 1998). See City of Oakland Planning Code for regulations implementing certain Element recommendations.

Policy 3.1 Avoid or Minimize Adverse Historic Preservation Impacts Related to Discretionary City Actions: This City will make reasonable efforts to avoid or minimize adverse effects on the Character-Defining Elements of existing or Potential Designated Historic Properties (PDHPs), which could result from private or public projects requiring discretionary actions.

Policy 3.2 Historic Preservation and City Owned Properties: To the extent consistent with other Oakland General Plan objectives, the City will ensure that all City-owned or controlled properties warranting preservation will, in fact, be preserved.

Policy 3.3 Designated Historic Property Status for Certain City-Assisted Properties: To the extent consistent with other Oakland General Plan Goals, Policies, and Objectives, as a condition for providing financial assistance to project involving existing or Potential Designated Historic Properties, the City will require that complete application be made for such properties to receive the highest local designation for which they are eligible prior to the issuance of a building permit for the project or transfer of title (for City-owned or controlled properties), whichever comes first.

Policy 3.4 City Acquisition of Historic Preservation Where Necessary: Where all means of preservation have been exhausted, the City will consider acquiring, by eminent domain if necessary, existing or Potential Designated Historic Properties, or portions thereof in order to preserve them. Such acquisition may be in fee, as conservation easements or a combination thereof.

Policy 3.5 Historic Preservation and Discretionary Permit Approvals:

- For additions or alterations to Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: 1) the design matches or is compatible with, but not necessarily identical to, the property's existing or historical design; or 2) the proposed design comprehensively modifies and is at least equal in quality to the existing design and is compatible with the character of the neighborhood; or 3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.
- For any project involving complete demolition of Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: 1) the design quality of the proposed project is at least equal to that of the original structure and is compatible with the character of the neighborhood; or 2) the public benefits of the proposed

project outweigh the benefit of retaining the original structure; or 3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.

Policy 3.7 Property Relocation Rather than Demolition: As a condition of approval for all discretionary projects involving demolition of existing or Potential Designated Historic Properties, the City will normally require that reasonable efforts be made to relocate the properties to an acceptable site.

Policy 3.8 Definition of "Local Register of Historical Resources" and the Historic Preservation "Significant Effects" for Environmental Review Purposes: For purposes of environmental review under CEQA, the following properties will constitute the City of Oakland's Local Register of Historical Resources:

- All Designated Historic Properties, and
- Those Potential Designated Historic Properties that have an existing rating of "A" or "B" or are located within an Area of Primary Importance.
- Oakland Landmarks,
- S-7 Preservation Combining Zone properties, and
- Preservation Study List properties.

Action 3.8.1 Include Historic Preservation Impacts in City's Environmental Review Regulations:

- Include Policy 3.8's definitions of "Local Register of Historical Resources" and historic preservation "significant effect" in the City's Environmental Review Regulations.
- Amend the Regulations to include specific measures that may be considered to mitigate significant effects to a Historical Resource. Measures appropriate to mitigate significant effects to a Historical Resource may include one or more of the following measures depending on the extent of the proposed addition or alteration:*
  - Modification of those elements of the Project design adversely affecting the character elements of the property.
  - Relocation of the affected Historical Resource to a location consistent with its historical or architectural character.
- If the above measures are not found to be feasible, the following measures may be considered:
  - Modification of the Project design to include restoration of the remaining historic character of the property.
  - Modification of the Project design to incorporate or replicate elements of the building's original architectural design.
  - Salvage and preservation of significant features and materials of the structure in a local museum or within the new project.
  - Measures to protect the Historical Resource from effects of on-site or other construction activities.
  - Documentation in a Historic American Buildings Survey report or other appropriate format: photographs, oral history, video, etc.

- Placement of a plaque, commemorative marker, or artistic or interpretive display on the site providing information on the historical significance of the resource.
- Contribution to a Facade Improvement Fund, the Historic Preservation Revolving Loan Fund, the Oakland Cultural Heritage Survey, or other program appropriate to the character of the resource.
- ** The lead agency will determine whether proposed mitigation measures are adequate to reduce effects to a historical resource to a less than significant level on a case by case basis.*

Policy 4.1 Archaeological Resources: To protect significant archaeological resources, the City will take special measures for discretionary projects involving ground disturbances located in archaeologically sensitive areas.

City of Oakland Cultural Heritage Survey

The City of Oakland Planning Department maintains the Oakland Cultural Heritage Survey (OCHS), which is a citywide inventory of historic buildings and districts. In 1997, Planning Department staff completed a windshield survey of every street in Oakland and assigned buildings an estimated construction date and preliminary rating of historical or architectural interest. Additionally, approximately 20,000 properties have been researched and documented through intensive-level surveys. The ratings provide guidance to City staff and property owners in design review and compliance with the Planning Code.

The ratings are based on the following criteria outlined in the Historic Preservation Element (City of Oakland 1998: Appendix C):

1. Visual Quality/Design: Exterior and interior design; construction and materials; style and type; supporting elements (e.g., landscaping, ancillary structures, feeling and association, signs, long-term use); and importance of the architect, designer, or builder.
2. History/Association: Construction date and association with individuals, organizations, events, or patterns of neighborhood, citywide, state, or national importance.
3. Context: Familiarity and continuity of the building within a district.
4. Integrity/Reversibility: Condition, exterior and interior alterations, structural removals, and site.

Survey ratings describe both the individual building (indicated by a letter rating) and the surrounding context or district (indicated by a number rating). The OCHS rates individual properties using letters A through E and * or F (City of Oakland 1998):

- **A: Highest importance:** Outstanding architectural example or extreme historical importance. These properties are clearly eligible for individual listing in the NRHP.
- **B: Major importance:** Especially fine architectural example or major historical importance. These properties may also be eligible for individual listing in the NRHP but are regarded as less important than those rated as A.
- **C: Secondary importance:** Superior or visually important example or very early (pre-1906). These properties may have historical, visual, or architectural value but do not appear to be eligible for individual listing in the NRHP.
- **D: Minor importance:** Representative example. These properties are not distinctive but rather a typical or representative example of an important style, type, convention, or historical pattern.

- **E: Of no particular interest**. These properties are not representative examples of an important style, type, convention, or historical pattern.
- *** or F: Not rated:** Less than 45 years old or modernized.

Properties may also be assigned a contingency rating indicated by a lowercase letter following the primary rating indicated by an uppercase letter (e.g., "Fa" or "Eb"), meaning they may receive the higher rating in certain situations (e.g., they are restored or reach a certain age or new research is uncovered).

District status is indicated by the numbers 1 through 3:

- **1: In an Area of Primary Importance (API) or NRHP quality district.** At least two-thirds of the properties located within the API must be contributors.
- **2: In an Area of Secondary Importance (ASI) or district of local interest.** ASIs do not appear to be eligible for listing in the NRHP. At least two-thirds of the properties located within the ASI must be contributors.
- **3: Not in an identified district.**

For properties located in districts, a "+" after the number rating indicates a contributor, a "-" after the number rating indicates a non-contributor and a "*" after the number rating indicates a contingency contributor. Similar to individual properties, a contingency contributor may become a contributor if it is restored or other conditions change.

City of Oakland Local Register of Historical Resources

The Historic Preservation Element defines the Local Register of Historical Resources as including all Designated Historic Properties (DHPs) and those PDHPs that have an OCHS rating of A or B or are located within an API (City of Oakland 1998). The City of Oakland considers resources listed in the Local Register of Historical Resources to be historical resources under CEQA.

- **Designated Historic Properties (DHPs):** DHPs include Oakland Landmarks, S-7 and S-20 Preservation Combining Zones (i.e., historic preservation zoning districts), and Preservation Study List and Heritage Properties.
- **Potential Designated Historic Properties (PDHPs)**: PDHPs are properties with an OCHS existing or contingency rating of C or higher or properties that are contributors or potential contributors to an API (rating of 1+ or 1*) or ASI (rating of 2+ or 2*). PDHPs warrant consideration for preservation but do not necessarily meet the threshold for historical resources under CEQA. Only those PDHPs with an OCHS rating of A or B or located within an API (i.e., those on the Local Register) are automatically considered historical resources under CEQA.

City of Oakland Planning Code

The City of Oakland's Planning Code contains the following regulations for certain types of projects involving historical resources, based on policies in the Historic Preservation Element:

Planning Code Section 17.136.075 Regulations for Demolition or Removal of Designated Historic Properties and PDHPs.

This section codifies the Historic Preservation Element and other regulations for approval of demolition or removal permits. With the exception of structures declared to be a public nuisance by the Building Official or City Council, Regular Design Review of the demolition or removal of a Designated Historic

Property or PDHP shall only be approved after the Regular Design Review of a replacement project at the subject site has been approved; however, demolition of nuisance structures must still undergo Regular Design Review for demolition. Regular Design Review approval for the demolition or removal of any Local Register property may be granted only if the proposal conforms to the general design review criteria, all other applicable design review criteria, and additional criteria set forth in the chapter. Demolition findings and documentation requirements are further spelled out in the Planning Department's "Demolition Findings for Category I/II/III Historic Properties." The Director of City Planning may postpone issuance of a demolition permit for up to 120 days from the date of permit application following Design Review approval.

Planning Code Section 17.136.075(B)

Category I Historic Properties: This section requires Design Review for the demolition or removal of any Landmark, Heritage Property, structure rated A or B by the Oakland Cultural Heritage Survey, or structure on the City's Preservation Study List that is not in an S-7 or S-20 zone or API. Approval may be granted only if the proposal conforms to the general design review criteria, all other applicable design review criteria, and the following additional criteria:

1. The applicant demonstrates that: a) the existing property has no reasonable use or cannot generate a reasonable economic return and that the development replacing it will provide such use or generate such return, or b) the applicant demonstrates that the structure constitutes a hazard and is economically infeasible to rehabilitate on its present site. For this finding, a hazard constitutes a threat to health and safety that is not immediate;
2. The design quality of the replacement facility is equal or superior to that of the existing facility; and
3. It is economically, functionally, architecturally, or structurally infeasible to incorporate the historic structure into the proposed development.

Planning Code Section 17.136.075(C)

Category II Historic Properties: This section requires Regular Design Review for the demolition or removal of any structure in an S-7 or S-20 zone or API. Approval may be granted only if the proposal conforms to the general design review criteria, all other applicable design review criteria, and the following additional criteria:

1. For the demolition of contributors to an S-7 or S-20 zone or API:
    a. The applicant demonstrates that: i) the existing property has no reasonable use or cannot generate a reasonable economic return and that the development replacing it will provide such use or generates such return, or ii) the applicant demonstrates that the structure constitutes a hazard and is economically infeasible to rehabilitate on its present site. For this criterion, a hazard constitutes a threat to health and safety that is not immediate; and
    b. It is economically, functionally architecturally, or structurally infeasible to incorporate the historic structure into the proposed development.
2. For the demolition of non-contributors to an S-7 zone, S-20 zone, or API: The existing structure is either: i) seriously deteriorated or a hazard; or ii) the existing design is undistinguished and does not warrant retention. For this finding, a hazard constitutes a threat to health and safety that is not immediate;
3. For the demolition of any structure in an S-7 zone, S-20 zone or API:

a. The design quality of the replacement structure is equal or superior to that of the existing structure; and

b. The design of the replacement project is compatible with the character of the district, and there is no erosion of design quality at the replacement project site and in the surrounding area. Specific findings are spelled out.

Planning Code Section 17.136.075(D)

Category III Historic Properties: This section requires Design Review Approval for the demolition or removal of any structure that is rated C by the by the Oakland Cultural Heritage Survey or that contributes to an ASI as determined by OCHS. (Under Historic Preservation Element Policy 3.5, this requirement applies to all PDHPs, including those resources with a contingency C rating and those identified as a contingency contributor to an ASI.) Approval may be granted only if the proposal conforms to the following general design review criteria (based on Historic Preservation Element Policy 3.5):

1. The design quality of the proposed replacement project is at least equal to that of the original structure and the proposed replacement project is compatible with the character of the neighborhood; or
2. The public benefits of the proposed replacement project outweigh the benefit of retaining the original structure and the proposed replacement project is compatible with the character of the neighborhood; or
3. The existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.

City of Oakland Municipal Code Article III – Green Building Compliance Standards (Section 18.02.100)

This regulation requires all buildings or projects to comply with the requirements of the California Building Energy Efficiency Standards (Title 24, Part 6) of the California Building Code and includes special provisions for historic buildings. Applicants for any new construction projects resulting in removal of a historical resource or large additions and alterations to historical resources must consult with a Historic Preservation Planner and seek LEED and Green Building certification, in addition to other specific requirements. The code also offers various incentives, such as lowered green building requirements when avoiding demolition of historic buildings, and higher green building requirements when demolishing historic buildings.

City of Oakland Standard Conditions of Approval

The City's Standard Conditions of Approval (SCAs) relevant to cultural and historic resources that would be impacted by implementation of the proposed Project are listed below. All applicable SCAs would be adopted as part of the proposed Project to eliminate significant impacts to cultural and historic resources.

These Development Standards apply to all projects that involve a Grading Permit:

SCA Cultural-1: Archaeological Resources. Ongoing throughout demolition, grading, and/or construction.

a. Pursuant to CEQA Guidelines section 15064.5(f), "provisions for historical or unique archaeological resources accidentally discovered during construction" should be instituted. Therefore, in the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing

activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the project proponent and/or lead agency and the qualified archaeologist would meet to determine the appropriate avoidance measures or other appropriate measure, with the ultimate determination to be made by the City of Oakland. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards.

b. In considering any suggested measure proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the project applicant shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while measure for historical resources or unique archaeological resources is carried out.

c. Should an archaeological artifact or feature be discovered on-site during project construction, all activities within a 50-foot radius of the find would be halted until the findings can be fully investigated by a qualified archaeologist to evaluate the find and assess the significance of the find according to the CEQA definition of a historical or unique archaeological resource. If the deposit is determined to be significant, the project applicant and the qualified archaeologist shall meet to determine the appropriate avoidance measures or other appropriate measure, subject to approval by the City of Oakland, which shall assure implementation of appropriate measure measures recommended by the archaeologist. Should archaeologically-significant materials be recovered, the qualified archaeologist shall recommend appropriate analysis and treatment, and shall prepare a report on the findings for submittal to the Northwest Information Center.

SCA Cultural-2: Human Remains. *Ongoing throughout demolition, grading, and/or construction.* In the event that human skeletal remains are uncovered at the project site during construction or ground-breaking activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and following the procedures and protocols pursuant to Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, and all excavation and site preparation activities shall cease within a 50-foot radius of the find until appropriate arrangements are made. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance and avoidance measures (if applicable) shall be completed expeditiously.

SCA Cultural-3: Paleontological Resources. *Ongoing throughout demolition, grading, and/or construction.* In the event of an unanticipated discovery of a paleontological resource during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (per Society of Vertebrate Paleontology standards [SVP 1995,1996]). The qualified paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the City determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the City for review and approval.

The SCA below applies to all projects that require a grading permit and are located in a sensitive archaeologically area. Archaeologically sensitive areas include areas in which previous CEQA documents or other information identified a higher likelihood of archaeological finds. This SCA further implements (and is in addition to) the SCA for Archeological Resources (SCA–CultHist1, above).

SCA Cultural-4: Archaeological Resources – Sensitive Areas. Prior to issuance of a demolition, grading, or building permit. The project applicant shall implement either Provision A (Intensive Pre-Construction Study) or Provision D (Construction ALERT Sheet). However, if in either case a high potential presence of historic-period archaeological resources on the project site is indicated, or a potential resource is discovered, the project applicant shall also implement all of the following provisions:

Provision B (Construction-Period Monitoring),

Provision C (Avoidance and/or Find Recovery), and

Provision D (to establish a Construction ALERT Sheet if the Intensive Pre-Construction Study was originally implemented per Provision A, or to update and provide more specificity to the initial Construction ALERT Sheet if a Construction Alert Sheet was originally implemented per Provision D).

Provision A through Provision D are detailed as follows:

a. ***Provision A: Intensive Pre-Construction Study*:** The project applicant, upon approval from the City Planning and Zoning Division, may choose to complete a site-specific, intensive archaeological resources study prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence of history-period archaeological resources on the project site. If that approach is selected, the study shall be conducted by a qualified archaeologist approved by the City Planning and Zoning Division. If prepared, at a minimum, the study shall include:

    i. An intensive cultural resources study of the project site, including subsurface presence/absence studies, of the project site. Field studies conducted by the approved archaeologist(s) may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources;

    ii. A report disseminating the results of this research;

    iii. Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources.

    If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction (see Provision B, Construction-Period Monitoring, below), implement avoidance and/or find recovery measures (see Provision C, Avoidance and/or Find Recovery, below), and prepare an ALERT Sheet that details what could potentially be found at the project site (see Provision D, Construction ALERT Sheet, below).

b. ***Provision B: Construction-Period Monitoring***: Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the ALERT Sheet, require per Provision D, Construction ALERT Sheet, below) and the procedures to follow if any are encountered, field recording and sampling in accordance with the Secretary of Interior's *Standards and Guidelines for Archaeological Documentation*, notifying the appropriate officials if human remains or cultural resources are discovered, or preparing a report to document negative findings after construction is completed. If a significant archaeological resource is discovered during the monitoring activities, adherence to Provision C, Avoidance and/or Find Recovery, discussed below), would be required to reduce the impact to less than significant. The project applicant shall hire a qualified archaeologist to monitor all ground-disturbing activities on the project site throughout construction.

c. ***Provision C: Avoidance and/or Find Recovery*:** If a significant archaeological resource is present that could be adversely impacted by the proposed project, the project applicant of the specific project site shall either:

    i. Stop work and redesign the proposed project to avoid any adverse impacts on significant archaeological resource(s); or,

ii. If avoidance is determined infeasible by the City, design and implement an Archaeological Research Design and Treatment Plan (ARDTP). The project applicant shall hire a qualified archaeologist who shall prepare a draft ARDTP that shall be submitted to the City Planning and Zoning Division for review and approval. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. The project applicant shall implement the ARDTP. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant.

d. ***Provision D: Construction ALERT Sheet***: The project applicant, upon approval from the City Planning and Zoning Division, may choose to prepare a construction ALERT sheet prior to soil-disturbing activities occurring on the project site, instead of conducting site-specific, intensive archaeological resources pursuant to Provision A, above. The project applicant shall submit for review and approval by the City prior to subsurface construction activity an "ALERT" sheet prepared by a qualified archaeologist with visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the project's prime contractor; any project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving); and/or utilities firm involved in soil-disturbing activities within the project site.

The ALERT sheet shall state, in addition to the basic archaeological resource protection measures contained in other standard conditions of approval, that in the event of discovery of the following cultural materials, all work must be stopped in the area and the City's Environmental Review Officer contacted to evaluate the find: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones.

Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel.

If the project applicant chooses to implement Provision D, Construction ALERT Sheet, and a potential resource is discovered on the project site during ground disturbing activities during construction, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction (see Provision B, Construction-Period Monitoring, above), implement avoidance and/or find recovery measures (see Provision C, Avoidance and/or Find Recovery, above), and prepare an updated ALERT Sheet that addresses the potential resource(s) and other possible resources based on the discovered find found on the project site.

These Development Standards apply to all projects that propose demolition of a PDHP or a CEQA Historical Resource.

SCA Cultural-5: Compliance with Policy 3.7 of the Historic Preservation Element (Property Relocation Rather than Demolition). *Prior to issuance of a demolition permit.* The project applicant shall make a good faith effort to relocate the building to a site acceptable to the Planning and Zoning Division and the Oakland Cultural Heritage Survey. Good faith efforts include, at a minimum, the following:

a) Advertising the availability of the building by: (1) posting of large visible signs (such as banners, at a minimum of 3'x 6' size or larger) at the site; (2) placement of advertisements in Bay Area news media acceptable to the City; and (3) contacting neighborhood associations and for-profit and not-for-profit housing and preservation organizations;

b) Maintaining a log of all the good faith efforts and submitting that along with photos of the subject building showing the large signs (banners) to the Planning and Zoning Division;

c) Maintaining the signs and advertising in place for a minimum of 90 days; and

d) Making the building available at no or nominal cost (the amount to be reviewed by the Oakland Cultural Heritage Survey) until removal is necessary for construction of a replacement project, but in no case for less than a period of 90 days after such advertisement.

These Development Standards apply to all projects that involve construction that is adjacent to a CEQA Historical Resource or a PDHP.

SCA Cultural-6: Vibrations to Adjacent Historic Structures. *Prior to issuance of a demolition, grading or building permit.* The project applicant shall retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that could damage the historic building(s) and design means and methods of construction that shall be utilized to not exceed the thresholds.

Impacts, Standard Conditions of Approval and Mitigation Measures

This section discusses potential impacts to cultural resources that could result from implementation of the proposed Project. It presents the thresholds of significance, describes the approach to the analysis, and identifies potential impacts and mitigation measures, as appropriate.

Thresholds of Significance

The proposed Project would have a significant impact on the environment if it would:

1. Cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines section 15064.5. Specifically, a substantial adverse change includes physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be "materially impaired." The significance of an historical resource is "materially impaired" when a project demolishes or materially alters, in an adverse manner, those physical characteristics of the resource that convey its historical significance and that justify its inclusion on, or eligibility for inclusion on an historical resource list (including the California Register of Historical Resources, the National Register of Historical Resources, Local Register, or historical resources survey form (DPR Form 523) with a rating of 1-5);
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines section 15064.5;
3. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
4. Disturb any human remains, including those interred outside of formal cemeteries.

Approach to Analysis

This cultural and historic resources analysis was prepared by conducting the following:

- A reconnaissance-level field survey of the Project Area in January 2013 and an intensive-level survey of the Coliseum District in November 2013.
- A records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) to identify previously recorded resources within and cultural resources studies of the Project Area.
- Archival research at local and state agencies and libraries, including the Oakland Department of Planning and Building and its Oakland Cultural Heritage Survey (OCHS), Alameda County Office of the Assessor, Oakland Public Library and its Oakland History Room, California Department of Transportation (Caltrans), and National Archives at San Francisco. Online repositories included the David Rumsey Historical Map Collection, Online Archive of California, Internet Archive, Google Books, and Sanborn Fire Insurance Maps accessible via the San Francisco Public Library.
- Consultation with the Native American Heritage Commission (NAHC), interested Native American groups and individuals, and local historical societies, including the Oakland Heritage Alliance and Alameda County Historical Society.[3]
- A review of historic topographic and geologic maps, previous archaeological investigations (Siskin and Steinkamp 2011) conducted adjacent to the Project Area, and previous geotechnical reports and geotechnical boring logs from within and nearby the Project Area to establish a baseline of subsurface strata information and to assess the archaeological and paleontological sensitivity for both the horizontal and vertical parameters of the Project Area.

The implementation of the proposed Project and the approval of future development within the Project Area would be subject to the City's SCAs and the goals and policies of the City's General Plan Historic Preservation Element, as outlined above. This cultural and historic resource analysis includes the application of the SCAs to reduce potentially significant impacts to a less than significant level and the identification of additional mitigation measures in instances when the SCAs would not fully mitigate potentially significant impacts. This impacts analysis is also based on the assumption that every parcel within the Coliseum District would be subject to redevelopment and therefore, the existing Coliseum and possibly the Arena structures would ultimately be demolished, or significantly altered, following approval of the proposed Project.

[3] The following is a summary of the consultation efforts: The NAHC was contacted via a faxed letter on January 8, 2013. On January 23, 2013, it responded via a faxed letter with a list of Native American individuals and organizations, which may have knowledge of cultural resources in the project area. These Native American individuals and organizations were contacted via mailed letters on November 6, 2013. A response has not been received to date. On January 14, 2013, the Oakland Heritage Alliance and Alameda County Historical Society were contacted via mailed letters. Responses from both organizations have not been received to date.

Substantial Adverse Change in the Significance of an Historical Resource

Coliseum District

Impact Cultural-1A: Future development of the Coliseum District would result in ultimate demolition of the Oakland Coliseum and potentially the Arena, causing a substantial adverse change in the significance of the Oakland Coliseum and Arena Complex (Site GANDA-9043-11), a historical resource as defined in CEQA Guidelines Section 15064.5. (**Significant and Unavoidable**)

Based on NWIC records search, background research, consultation with OCHS staff and local historical societies, and an intensive field survey of the Coliseum District, 23 built structures over fifty years of age are located within the Coliseum District, as shown on **Table 4.4-1** and **Figure 4.4-2**. Except for the Oakland Coliseum and Arena complex (Site GANDA-9043-11) these structures have either been previously determined ineligible (California Historical Resources [CHR] Status Code 6Y) or have been previously recommended as ineligible (CHR Status Code 6Z) for listing in the NRHP, CRHR, and Local Register of Historical Resources. These remaining 22 structures have been previously recorded on DPR 523 forms and are not considered to be historical resources under CEQA.

Table 4.4-1: Structures Over 50 Years Old Located within the Coliseum District

CHRIS Resource No.	Resource Name	Resource Type	Construction Date	OCHS Rating	CHR Status Code
GANDA-9043-11	Oakland Coliseum and Arena	Sports complex	1966	Coliseum: A1+ Arena: B+1+	7R
P-01-001783	Southern Pacific Railroad (SPRR)	Railroad	1860s to present	None	6Z
P-01-002190	Western Pacific Railroad (WPRR)	Railroad	1906 to present	None	6Z
P-01-010854	Arroyo Viejo Creek Bridge No. 1 (Caltrans Bridge No. 33C0167)	Bridge	1951	None	6Y
P-01-010856	6925 San Leandro Street	Light industrial building	1949-1955	D3	6Y
GANDA-9043-01	Arroyo Viejo Creek Culvert	Culvert	ca. late 1940s/early 1950s	None	6Z
GANDA-9043-02	Arroyo Viejo Creek	Channelized creek	ca. late 1940s	None	6Z
GANDA-9043-03	Arroyo Viejo Creek Bridge No. 2	Bridge	ca. late 1940s/early 1950s	None	6Z

Table 4.4-1: Structures Over 50 Years Old Located within the Coliseum District

CHRIS Resource No.	Resource Name	Resource Type	Construction Date	OCHS Rating	CHR Status Code
GANDA-9043-04	7217 San Leandro Street	Light industrial complex	1948	D3	6Z
GANDA-9043-05	7101 San Leandro Street	Light industrial complex	1959	F3	6Z
GANDA-9043-06	6905 San Leandro Street	Light industrial building	1946	D3	6Z
GANDA-9043-07	6815 San Leandro Street	Light industrial complex	1947	F3	6Z
GANDA-9043-08	Lion Creek Bridge (Caltrans Bridge No. 33C0216)	Bridge	1940	None	6Z
GANDA-9043-09	Lion Creek	Channelized creek	ca. 1940	None	6Z
GANDA-9043-10	6601 San Leandro Street	Office building	1956	F3	6Z
GANDA-9043-12	Damon Slough	Channelized slough	ca. late 1940s/early 1950s	None	6Z
GANDA-9043-13	Damon Slough Bridge No. 1 (Caltrans Bridge No. 33 0434T)	Bridge	1968	None	6Z
GANDA-9043-14	Damon Slough Bridge No. 2 (Caltrans Bridge No. 33 0142S)	Bridge	1968	None	6Z
GANDA-9043-15	Elmhurst Creek and Tributaries	Channelized creek	ca. 1940s	None	6Z
GANDA-9043-16	Coliseum Way Bridge No. 1	Bridge	ca. 1960s	None	6Z
GANDA-9043-17	Coliseum Way Bridge No. 2	Bridge	ca. 1960s	None	6Z
GANDA-9043-19	8055 Collins Drive	Office	1966	F3	6Z

Table 4.4-1: Structures Over 50 Years Old Located within the Coliseum District

CHRIS Resource No.	Resource Name	Resource Type	Construction Date	OCHS Rating	CHR Status Code
		building			
GANDA-9043-20	Elmhurst Creek Culvert	Culvert	ca. 1940s	None	6Z

Notes:

6Y: Determined ineligible for listing in the NRHP by consensus through the Section 106 process.

6Z: Recommended ineligible for listing in the NRHP, CRHR, and local designation through a survey evaluation. While the City of Oakland or any qualified party can make an initial recommendation regarding a resource's eligibility for listing in the NRHP, CRHR, or local register, only the SHPO can make a formal determination of eligibility following review of the documentation and evaluation of a resource.

7R: Identified in a Reconnaissance Level Survey: Not evaluated on DPR523. Primary Records (DPR 523A) were submitted by OCHS in 1996-97 as placeholders for several hundred major resources.

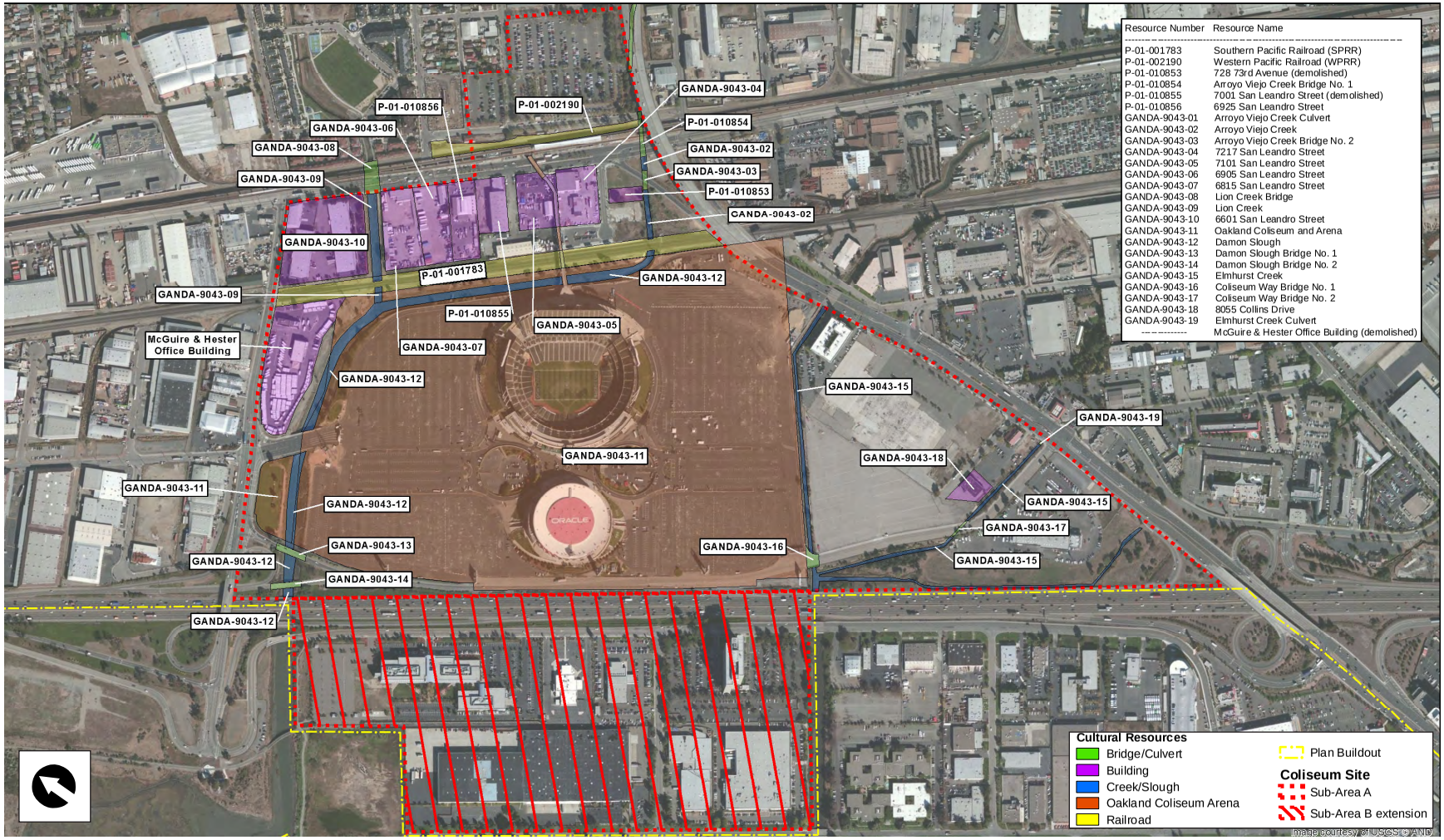


Figure 4.4-2
Cultural Resources Survey Results, Coliseum Site

Garcia & Associates (January 2014)

Oakland Coliseum and Arena

OCHS rates the Oakland Coliseum as "A" (Highest Importance) and the Arena as "B+" (Major Importance). The individual buildings are also rated as "1+", which means they are contributing structures to an Area of Primary Importance (i.e., the Coliseum Complex). The Oakland Coliseum and Arena Complex is therefore listed in the Local Register of Historical Resources and is a historical resource under CEQA. The individual buildings have not been formally evaluated for listing in the NRHP or CRHR or recorded on DPR 523 forms, but are considered to be individual historic resources under CEQA based on their OCHS ratings.

No analysis has been conducted to formally determine whether the 1996 addition to the Coliseum materially altered in an adverse manner those physical characteristics of the Coliseum that conveyed its historical significance. It is conservatively assumed that the Coliseum, as well as the overall Complex, still retains enough of its original physical character-defining elements as to remain an historic resource.

A substantial adverse change to an historic resource includes the physical demolition, destruction, relocation or alteration of the resource or its immediate surroundings, such that the significance of the historical resource would be materially impaired. The significance of a historical resource is materially impaired when a project demolishes or materially alters, in an adverse manner, those physical characteristics of the resource that convey its historical significance and that justify its inclusion on, or eligibility for inclusion on an historical resource list. The Coliseum District's only historical resource, the Oakland Coliseum complex (which includes the Coliseum and Arena, associated ancillary buildings, landscaping, fencing, and signage), is proposed for demolition in the proposed Project. Demolition of this historical resource is considered a significant impact.

Other Potential Sites

During the November 2013 intensive-level field survey, the project architectural historian confirmed that three previously recorded properties located within the Coliseum District (those structures identified with a CHRIS Resource number, see **Table 4.4-2** and **Figure 4.4-2**) have been previous demolished. The DPR 523 forms for these structures have been updated to reflect their current status. These three properties are no longer considered to be potential historic resources.

Table 4.4-2: Non-Extant Structures Located within the Coliseum District

CHRIS Resource No.	Resource Name	Resource Type	Construction Date	OCHS Rating	CHR Eligibility Status
None	796 - 66th Avenue	Office building	1958	N/A (previously F3)	N/A
P-01-010853	728 - 73rd Avenue	Single family residence	1908, 1913	N/A	N/A (previously 6Y)
P-01-010855	7001 San Leandro Street	Light industrial complex	1949-1952	N/A	N/A (previously 6Y)

Note: 6Y = Determined ineligible for listing in the NRHP by consensus through the Section 106 process.

Applicable Regulatory Requirements

The City's Planning Code (implementing Historic Preservation Element Policy 3.5) requires Design Review approval prior to demolition of historic resources, with approval of demolition contingent upon meeting several findings, including:

- demonstration that the existing property has no reasonable use or cannot generate a reasonable economic return, and that the development replacing it will provide such use or generate such return;
- that the design quality of the replacement facility is equal or superior to that of the existing facility; and
- that it is infeasible to incorporate the historic structure into the proposed development.

Historic Preservation Element Policies 3.1 and 3.2 further require the City to make reasonable efforts to avoid or minimize adverse effects on historic resources due to its discretionary actions and, "to the extent consistent with other Oakland General Plan objectives," ensure that City-owned or controlled properties warranting preservation will, in fact, be preserved.

Reasonable Use and Economic Return

Coliseum

The Coliseum Stadium is jointly owned by the City of Oakland and Alameda County, and governed through the Oakland/Alameda County Coliseum Joint Powers Authority (JPA). The two primary tenants of the existing Oakland Coliseum are the National Football League (NFL) franchise Oakland Raiders and the Major League Baseball (MLB) franchise Oakland A's. In addition to being the third oldest NFL stadium and the fourth oldest MLB ballpark in their respective leagues, the Coliseum is the only multi-purpose stadium that serves as a full-time home to both a MLB team and an NFL team in the United States.

Currently, the Coliseum hosts an annual average of approximately 115 events per year, and approximately 90% of these events are attributed to either A's baseball games (81 home games), Raiders games (10 events), or parking lot events in support of these teams (12 events). Annual attendance at the current Coliseum is approximately 2,544,000 visitors, of which approximately 90% are attending A's games (1,764 visitors), Raiders games (505,000 visitors) or parking lot events in support of these teams (60,000 visitors). However, multiple public statements made by the owners of these professional sports franchises have expressed the dissatisfaction that these private business franchise owners have with the current Oakland Coliseum as a venue for their games.[4] Both franchises have announced that they are seeking solutions for developing new venues for their teams. Potential alternative solutions include new venues at the Coliseum site, new venues elsewhere in Oakland, or even moving the teams out of Oakland.

Without either the A's or the Raiders using the facility and based on current scheduling, the Coliseum would host only 12 events with an annual attendance of only 214,000 people. This limited use of such a

[4] For years, the A's franchise has been seeking MLB approval to relocate the franchise and abandon the Oakland Coliseum (Forbes Magazine, March 2014). Public statements made by the A's owner indicate that he feels the Coliseum is ". . . basically a deteriorating facility. I think everybody is aware of that, even the people who run it" (San Jose Mercury News, 06/18/2013). Similarly, statements made by the Raiders owner indicate that; "We can't continue to play in that stadium, with the baseball field and all of that stuff" (SF Gate, Feb 26, 2014).

large facility would not generate a sufficiently reasonable economic return to justify its on-going operation.

Arena

The Arena is also jointly owned by the City of Oakland and Alameda County, and governed through the Oakland/Alameda County Coliseum Joint Powers Authority (JPA). The primary tenant of the existing Oakland Arena is the National Basketball Association (NBA) franchise Golden State Warriors. The Oakland Arena is the second oldest NBA arena in the league.

Currently, the Arena hosts an annual average of approximately 105 events per year, and approximately 43% of these events are attributed to Warrior's basketball games (45 home games). Annual attendance at the Arena is approximately 1,742,000 visitors, of which approximately 50% are attending Warriors games (873,000 visitors). The Warriors' owners have announced their intention to move the sports team to a new venue in San Francisco, although the environmental review process and San Francisco's approvals for that move have not yet been completed.

Without the Warriors using the current Arena (assuming that they move) and based on current scheduling, the Coliseum would still host as many as 60 events with an annual attendance of approximately 870,000 people. Should the Warriors choose to leave, reduced use of the Arena could still potentially generate sufficient economic return to justify its on-going operation, particularly if it were more heavily marketed for other non-sports events and given the high costs to construct an alternative venue capable of accommodating large, non-basketball events.

Design Quality

Neither a new Stadium nor a new Arena has been formally proposed, nor has an actual detailed design proposal for either of these structures been offered. At such time as a design for either of these new venues is proposed, the City would need to consider whether the new design is equal to or superior to that of the existing facilities.

Incorporating the Structure into the Proposed Development

As indicated above, the Coliseum is such a large, limited use facility that any alternative use that may seek to reuse the facility for other purposes (i.e., as a soccer field for amateur or even professional teams or other such reduced-size events)[5] would be unlikely to generate a sufficient economic return to justify its on-going operation. Incorporation of the existing Coliseum into the current planning and design program of the proposed Specific Plan is not viable.

However, there are multiple Specific Plan scenarios whereby the existing Arena is retained and incorporated into the urban design program for the Coliseum District.

Consistency with other Oakland Planning Objectives

One of the major objectives of the proposed Project is to retain the existing sports teams and to maximize the economic value for Oakland and Alameda County from these sports facilities. Furthermore, to maximize the economic value for the City and County, the land surrounding the new venues needs to be developed with revenue-generating uses such as retail, hotels, and science and technology uses. It would not be possible to construct two new professional sports facilities (a new

[5] According to Major League Soccer, the San Jose Earthquakes professional soccer team averages 10,525 fans per game, less than one-sixth of the capacity of the Coliseum.

Stadium and a new Ballpark) within the Coliseum District, provide adequate access and accommodate ancillary economic development, while retaining the existing Coliseum. Preserving the existing Coliseum (a partially City-owned and controlled property) would not be consistent with other Oakland planning objectives for economic development, nor is preservation of the existing Coliseum a feasible and warranted preservation strategy without a professional sports franchise tenant.

Conclusions

Coliseum

The Specific Plan is based on the assumption that in the absence of new venues, the Raiders and the A's will decide to relocate away from the current Coliseum and perhaps out of Oakland. Both of these professional sports franchises have clearly communicated that in their opinion the Coliseum is outdated, in poor condition, does not function well logistically and cannot be renovated in a manner to eliminate these problems. However, there is no way to know for certain what the independent business decisions of these franchises may ultimately be.

As a key objective of the proposed Project, the City of Oakland is seeking to help facilitate positive outcomes for retaining the Raiders and the A's sports franchises (in Oakland and within the Coliseum District) by prioritizing development of new sports venues that maximize benefits to each of these sports franchises, and that serve as economic development catalyst for the remainder of the Project Area and for all of Oakland. To retain the teams, new sports facilities will need to be constructed, and will need adequate access, circulation, and parking. To maximize the economic value for the City and County, the land surrounding the new venues is needed for development of new revenue-generating uses such as residential, retail, hotels, and science and technology uses. The Specific Plan also acknowledges that either (or even both) of these two sports franchises may make independent business decisions to leave the Coliseum site despite the City's planning efforts to retain them, and so provides the flexibility for development scenarios that include fewer (and even no) new sports venues.

However, even under the no new sports venue scenario, there is no planning program that provides for on-going retention of the existing Coliseum. Demolition of the existing Coliseum is a significant and unavoidable outcome of the Specific Plan, resulting in the loss of the Coliseum as an historic resource and the loss of the major contributor of the Coliseum Complex historic district.

Arena

The Arena is a facility with much greater flexibility and economically viable alternative uses than is the Coliseum. The Specific Plan does not pre-determine that the Arena would need to be demolished, even if the Warriors do relocate to San Francisco. The only scenario (under the multiple options presented within the Specific Plan) in which the existing Arena would be demolished is if the Warriors choose to remain in Oakland and to build a new Arena, perhaps on the water-side of I-880. Under that scenario, it would not be economically viable to operate two large arena facilities immediately adjacent to each other. Under that scenario, demolition of the existing Arena would be a significant and unavoidable outcome of the Specific Plan, resulting in the loss of the Arena as an historic resource and the loss of the only other contributor to the Coliseum Complex historic district.

Other plausible scenarios for the Arena include a scenario wherein the Warriors decide to stay in Oakland and at the existing Arena, and choose to invest in facility upgrades to the Arena to better suit their needs and desires. Alternatively, the Warriors may leave from the Arena, but the Arena is incorporated into the economic development plans for the Coliseum District. Under either of these scenarios, demolition of the existing Arena would not occur and the significant impact related to the loss

of the Arena as an historic resource would be avoided. As the only remaining contributor to the Coliseum Complex historic district, it is unlikely that the historic district status would remain.

Standard Conditions of Approval

SCA Cultural-5: Property Relocation Rather than Demolition requires that reasonable efforts be made to relocate rather than demolish historical resources. If relocation efforts are unsuccessful, Action 3.8.1 of the Historic Preservation Element requires that efforts be made to modify those elements of the proposed Project that would materially impair a historical resource. Given the size and scale of the Oakland Coliseum and Arena, these historic resources could not feasibly be relocated.

Design Review Findings Prior to Demo

Additionally, pursuant to Oakland Planning Code, section 17.136.075(B), demolition or removal of the Coliseum, the Arena or both structures can only be granted if a new proposal conforms to the following Design Review criteria:

- the future development proposal conforms to all applicable design review criteria;
- the Coliseum and/or Arena has no reasonable use or cannot generate a reasonable economic return and that the development replacing it will provide such use or generate such return, or the applicant demonstrates that the structure constitutes a hazard and is economically infeasible to rehabilitate on its present site. For this finding, a hazard constitutes a threat to health and safety that is not immediate;
- the design quality of the replacement facility is equal or superior to that of the existing facility; and
- it is economically, functionally, architecturally or structurally infeasible to incorporate the historic structure into the proposed development.

Design Review approval for any subsequently proposed new Stadium and/or new Arena would be dependent upon the City being able to make each of these findings.

Mitigation Measures

The following mitigation measures are recommended to compensate for inevitable the loss of the Oakland Coliseum as an historic resource. These mitigation measures would also be applicable under a scenario whereby the Arena may also be proposed for demolition.

MM Cultural 1A-1: Site Recordation. The Oakland Coliseum, the Coliseum Complex, and the Arena (should it ultimately be proposed for demolition or major alteration), shall be recorded to standards established for the National Park Service's Historic American Buildings Survey (HABS), as detailed below.

a. A HABS written report will be completed to document the physical history and description of the historical resource, the historic context for its construction and use, and its historic significance. The report will follow the outline format described in the *HABS Guidelines for Historical Reports*.

b. Large-format, black and white photographs will be taken, showing the buildings in context, as well as details of the design or engineering features and any ancillary buildings, landscaping, fencing, and signage. The photographs will be taken and processed for archival permanence in accordance with the *HABS/HAER/HALS Photography Guidelines* in effect at the time of recording. The photographs will be taken by a professional with HABS

photography experience. Additionally, additional color photographs or videos will be taken of the resource in consultation with City preservation staff.

c. Existing drawings, where available, will be photographed with large-format negatives or photographically reproduced on Mylar or other archival paper at the direction of City staff. If existing drawings are not available, a full set of measured drawings depicting existing or historic conditions will be prepared. The drawings will be prepared in accordance with the *HABS Guidelines for Recording Historic Structures and Sites with HABS Measured Drawings* in effect at the time of recording. The drawings will be prepared by a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architecture or Historic Architecture.

d. The HABS documentation, including the report, large-format photographs, and drawings, will be submitted to the Oakland Cultural Heritage Survey/Oakland City Planning Department; the Oakland Public Library Oakland History Room; and the Northwest Information Center (NWIC). The documentation will be prepared in accordance with the archival standards outlined in *Transmittal Guidelines for Preparing HABS/HAER/HAL Documentation* in effect at the time of recording. A professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History will manage production of the HABS documentation, which will be reviewed and approved by the City of Oakland Landmarks Preservation Advisory Board (LPAB) prior to demolition.

MM Cultural 1A-2: Public Interpretation Program. The Oakland Coliseum, the Coliseum Complex, and the Arena (should it ultimately be proposed for demolition or major alteration) shall be documented in a public interpretation program, as follows:

a. Interpretive materials, such as informational plaques depicting the history and design of the historical resource, will be prepared as part of a public interpretation program and be displayed in a location with high public visibility near the site.

b. The public interpretation program will be developed by a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History in consultation with the LPAB and OCHS and based on a scope of work approved by the City.

c. The LPAB will review and approve of the public interpretation program prior to demolition.

MM Cultural 1A-3: Financial Contribution. If the Oakland Coliseum and/or Arena are demolished, project applicant(s) shall make a financial contribution to the City of Oakland to be used to fund historic preservation projects within or in the vicinity of the Coliseum District, as described below.

a. The financial contributions can be applied to programs such as a Façade Improvement Program, Tenant Improvement Program, or Mills Act program.

b. The contributions will be determined by the City at the time of the approval for specific projects based on a formula determined by the Landmarks Preservation Advisory Board.

Resulting Level of Significance

Under the proposed Project, demolition of the Oakland Coliseum is identified as the only feasible option to move forward with development of the Specific Plan. HABS recordation, public interpretation, and financial contributions for other historic preservation projects may partially compensate for, but cannot mitigate the loss of this historic resource to a less than significant level. The loss of the existing Oakland

Coliseum as an individual historic resource and as the major contributor to the Coliseum Complex historic district would be a **significant and unavoidable impact**.

Unlike the Coliseum, demolition of the existing Arena is identified as only one of several potential development options within the Coliseum District pursuant to the Specific Plan. However, because this option is possible (and even the preferred outcome to feasibly redevelop the Coliseum District in accordance with the objectives of the Coliseum City Master Plan), this EIR conservatively assumes demolition of the Arena may need to occur. HABS recordation, public interpretation, and financial contributions for historic preservation projects may partially compensate for, but cannot mitigate the loss of a historical resource to a less than significant level. The loss of the existing Arena as an individual historic resource and the remaining contributor to the Coliseum Complex historic district is also conservatively deemed **significant and unavoidable**.

Plan Buildout

Impact Cultural-1B: Other than the proposed demolition of the Oakland Coliseum and the potential demolition of the Arena as discussed above in Impact Cultural-1A, future development pursuant to Plan Buildout does not specifically propose to demolish or materially alter any other historic or potentially historic resources. Any subsequent development project that may propose demolition or alteration of a current or future-defined historic resource would be required to undergo subsequent and individual environmental review, and would also be subject to all applicable City of Oakland's standard conditions of approval, Planning Code requirements and General Plan policy considerations relevant to historic resource preservation. (**LTS with SCAs**)

Project Area outside of the Coliseum District

Portions of the Project Area outside of the Coliseum District contain many additional older buildings and other structures with OCHS ratings of lower than "A" or "B". During the January 2013 reconnaissance survey, many commercial or light industrial buildings, bridges and channelized creeks or sloughs over 45 years old were noted within the Project Area. The OCHS rates several mid-twentieth century buildings along Edgewater Drive, Capwell Drive, Swan Way, and Roland Way within the Project Area as *3 (i.e., they were too recent to rate and were assigned the field notation of "F3"). To further assess these structures, a NWIC records search, background research and consultation with OCHS staff and local historical societies was conducted, which identified three buildings of potential historic interest, each of which is located within Sub-Area D. These buildings are listed in **Table 4.4-3**, and described below:

- the Fire Station Engine No. 27 at 8501 Pardee Drive has a preliminary OCHS ratings of *3 (i.e., too recent to evaluate at the time of the survey and are not located in an identified district);
- the UPS building at 8400 Pardee Drive has a preliminary OCHS ratings of *3 (i.e., too recent to evaluate at the time of the survey and are not located in an identified district); and
- the Warehouse Union Local 6 building at 99 Hegenberger Road, which has a preliminary OCHS rating of *c3 (i.e., too recent to evaluate at the time of the survey and not located in an identified district, but noted as a PDHP of future interest). Along with its unique external truss system and midcentury modern design by architect Herbert T. Johnson, the exterior murals by Benjamino "Benny" Bufano are a noted feature of the Warehouse Union Local 6 building.

These resources have not been evaluated for listing in the NRHP, CRHR, or Local Register of Historical Resources or recorded on DPR 523 forms. At the time of the OCHS field survey, these buildings were not rated because they were less than 45 years old or modernized. These buildings are now over 50 years

old and could potentially be reconsidered as historic resources. Of these buildings of potential current interest, only the Warehouse Union Local 6 building at 99 Hegenberger Road is now of age to be considered a historic resource, has a contingency rating (based on its age) that enables it to be considered a resource of secondary importance, and is identified as a PDHP. Based on these factors, the Warehouse Union Local 6 building is considered a historical resource.

Table 4.4-3: Structures of Potential Interest over 50 Years Old, Located Outside of the Coliseum District

CHRIS Resource No.	Resource Name	Resource Type	Construction Date	OCHS Rating	California Historical Resources (CHR) Status Code
None	Warehouse Union Local 6 (99 Hegenberger Road)	Office building	1965	*c3 (PDHP)	7R
None	Fire Station Engine No. 27 (8501 Pardee Drive)	Fire Station	ca. early 1960s	*3	7R
None	UPS (8400 Pardee Drive)	Light industrial complex	ca. 1960s	*3	7R

Notes:

* rating = too recent to evaluate; equivalent to field map notation "F"

3 = not in an historic district

c = contingency rating of "secondary importance" meaning it may receive a higher rating if restored, or if it reaches a certain age, or if new research is uncovered.

PDHP = Potentially Designated Historic Property

7R = Identified in a Reconnaissance Level Survey: Not evaluated.

Future development pursuant to Plan Buildout, particularly within Sub-Area D, is not specific or detailed enough as to individual properties to enable a determination of whether the Warehouse Union Local 6 building (or any other individual structure) may be proposed for future demolition or removal to accommodate new development. Therefore, demolition of this building is not assumed as part of the Project.

Applicable Regulatory Requirements and SCAs

Since the OCHS has not formally researched or documented the Warehouse Union Local 6 building to date, project-level tabulation, and intensive survey and evaluation would be required in the future should a specific development project be proposed at this site. Pending such review, it should conservatively be considered a historic resource. Any future development proposal that might propose demolition of this structure would also be required to undergo subsequent CEQA review, and would be

subject to all of the City of Oakland's standard conditions of approval, Planning Code requirements and General Plan policy considerations relevant to historic resource preservation. Specifically:

- CEQA: Additional CEQA review would be required to assess whether the loss of this building would be a significant impact on an historic resource as defined for CEQA, and if so, CEQA findings would be required to conclude that this impact would be outweighed by other overriding considerations.
- Planning Code: Should further detailed evaluation of this building conclude it to be eligible as a Landmark, or as a potential Landmark ,or Heritage Property, or A or B-rated pursuant to the Oakland Cultural Heritage Survey), approval of demolition would only be granted if; a) a future development proposal conformed to all applicable design review criteria; b) if it were demonstrated that the property has no reasonable use or cannot generate a reasonable economic return, or is a hazard that is economically infeasible to rehabilitate; c) that the design quality of the replacement facility is equal or superior to that of the existing facility; and d) that it is economically, functionally, architecturally, or structurally infeasible to incorporate the historic structure into the proposed development.
- Preservation Element: If further detailed evaluation of this building concluded that it does not qualify as a Landmark or an A or B-rated building, Planning Code Section 17.136.075(D) would still require Design Review approval prior to the demolition or removal of this structure, as this requirement applies to all PDHPs including those resources with a contingency C rating. Approval of demolition would only be granted if: a) the design quality of the proposed replacement project is at least equal to that of the original structure; b) if the public benefits of the proposed replacement project outweigh the benefit of retaining the original structure; and c) if the existing design is found to be undistinguished and does not warrant retention.
- Pursuant to SCA Cultural-5, if such a project were to obtain design review approval for demolition, the project applicant would be required to make a good faith effort to relocate the building to a site acceptable to the Planning and Zoning Division, Landmarks Board, and the Oakland Cultural Heritage Survey.
- Policy 3.4 of the Historic Preservation Element directs the City to consider acquiring existing historic resources or PDHPs in order to preserve them.
- Policy 3.5 of the Historic Preservation Element PE also requires the City to make specific findings for additions or alterations to existing historic resources or PDHPs prior to approving discretionary permits. These findings address design compatibility and quality and whether the public benefits of the proposed project outweigh the benefit of retaining the original structure. These findings are required of development projects that include structures subsequently found to be historical resources.

New information or new contexts may be discovered, altered properties may be found to have been restored and other properties that may not have been 50 years old at the time they were last surveyed may become potentially eligible for listing in the California Register or the Local Register by the time buildout of the Plan is completed. It is possible that such properties may be considered historic resources in the future, even though not considered historical resources at the time of preparation of this EIR. If it is later determined that demolition or substantial alteration of historically-significant resources would occur pursuant to Plan Buildout, the impact of such development would need to be considered under a subsequent CEQA analysis and would be similarly subject to all of the City of Oakland's standard conditions of approval, Planning Code requirements and General Plan policy considerations relevant to historic resource preservation, as indicated above.

Mitigation Measures

None needed for the current Project as regards structures outside the Coliseum District.

Substantial Adverse Change in the Significance of an Archaeological or Paleontological Resource or Human Remains

Coliseum District and Plan Buildout

Impact Cultural-2: Proposed development within the Coliseum District could directly or indirectly destroy a unique paleontological resource or site, cause a substantial adverse change in the significance of currently undiscovered archaeological resources, or disturb human remains. However, with implementation of City of Oakland Standard Conditions of Approval, this impact would be reduced to less than significant. (**LTS with SCAs**)

Archaeological Resources

Archaeological resources are not anticipated at or near the surface within the entire Project Area due to historic development and the amount of existing artificial fill covering the area. The surface stratum of the entire Project Area consists of a variable veneer of historic and modern artificial fill (Af) that was placed to raise the elevation of Bay margin for development. The fill consists of a mix of local and imported material. The artificial fill is considered to have very low sensitivity for archaeological resources.

The base of the fill, at the interface or contact with Bay Mud (Qybm), is considered to have a high sensitivity for prehistoric cultural deposits, especially deposits associated with the nearby Nelson shellmounds, CA-ALA-321 (Site N-321), CA-ALA-322 (Site N-322), and CA-ALA-322 (Site N-323), which were recorded along the edge of the historic shoreline, as shown in **Figure 4.4-3**. The location of the Project Area is also situated along the historic shoreline, which was an attractive location for Native American settlement and use and rich in natural subsistence resources.

The Qybm "Bay Mud" is late Holocene in age and consists of fine-grained marsh and estuary deposits (Atwater et al 1977; Dibblee 1980; Trask and Rolston 1951). Although marsh and estuary deposits are typically considered low in archaeological sensitivity, the presence of a 5,000 year old human skeleton at CA-SFR-28 in San Francisco (Meyer 2011) in similar deposits within San Francisco Bay area suggests that the Bay Mud strata that are in contact with terrestrial deposits have the potential to contain sealed human remains associated with Native American habitation of the area. The skeleton was recorded in marsh deposits at elevation -23 feet (23 feet below sea level). Thus, archaeological sensitivity is considered moderate to high within marsh deposits when they are situated at the interface of terrestrial deposits and where the marsh may have been exposed as a land surface long enough to have been available for human use.

Figure 4.4-3
High Archaeological Sensitivity Zone, Edge of Historic Shoreline

Source: Garcia & Associates (January 2014)

The base of the Bay Mud is considered to be high for archaeological sensitivity as the interface with the underlying Qa deposit (terrestrial alluvial fan, fluvial, and eolian deposits) suggests a sea level transgression (rise in sea level) with an associated on-lapping of bay muds onto terrestrial (shoreline) deposits. Human occupation along the bay margin shoreline would adjust to sea-level variations. Thus, sites of various age, as suggested by the presence of sealed shell concentrations, artifacts, features (e.g., fire hearths, living floors) or midden deposits, may be located at various elevations that were sealed by transgressing or on-lapping marsh deposits. Similarly, archaeological deposits may also be sealed by terrestrial deposits (during sea regression), exposed by erosion, then later obscured and buried by on-lapping marine deposits. Also, the marine and terrestrial deposits may be inter-digitated due to short term and long term climate oscillations that forced sea level transgressions and regressions during the entire Holocene. Thus, the entire Qa deposit is considered to have high archaeological sensitivity.

The deposits below the Qa, such as the Posey Formation, San Antonio Formation, and Alameda Formation, date to the Late Pleistocene and earlier (Atwater et al 1977; Dibblee 1980), when the coast of the Pacific Ocean was 25 to 50 kilometers to the west. Due to the position on the landscape and the age of the deposits, they are considered to have very low archaeological sensitivity.

Table 4.4-4 below and **Figure 4.4-4** illustrates the geologic setting and soils and consequently, the depth of archaeological sensitivity of the Project Area.

Table 4.4-4 is ordered by the estimated height and depth of the strata anticipated in the Project Area. As shown in Figure 4.4-4, artificial fill is the top layer across most of the Project Area, albeit at a variable depth, with one of several possible strata lying underneath the fill. Note that the northeast corner of the Project Area is underlain by Holocene alluvial fan deposits; these appear in Table 4.4-4 as stratum Qa (Quaternary Alluvium).

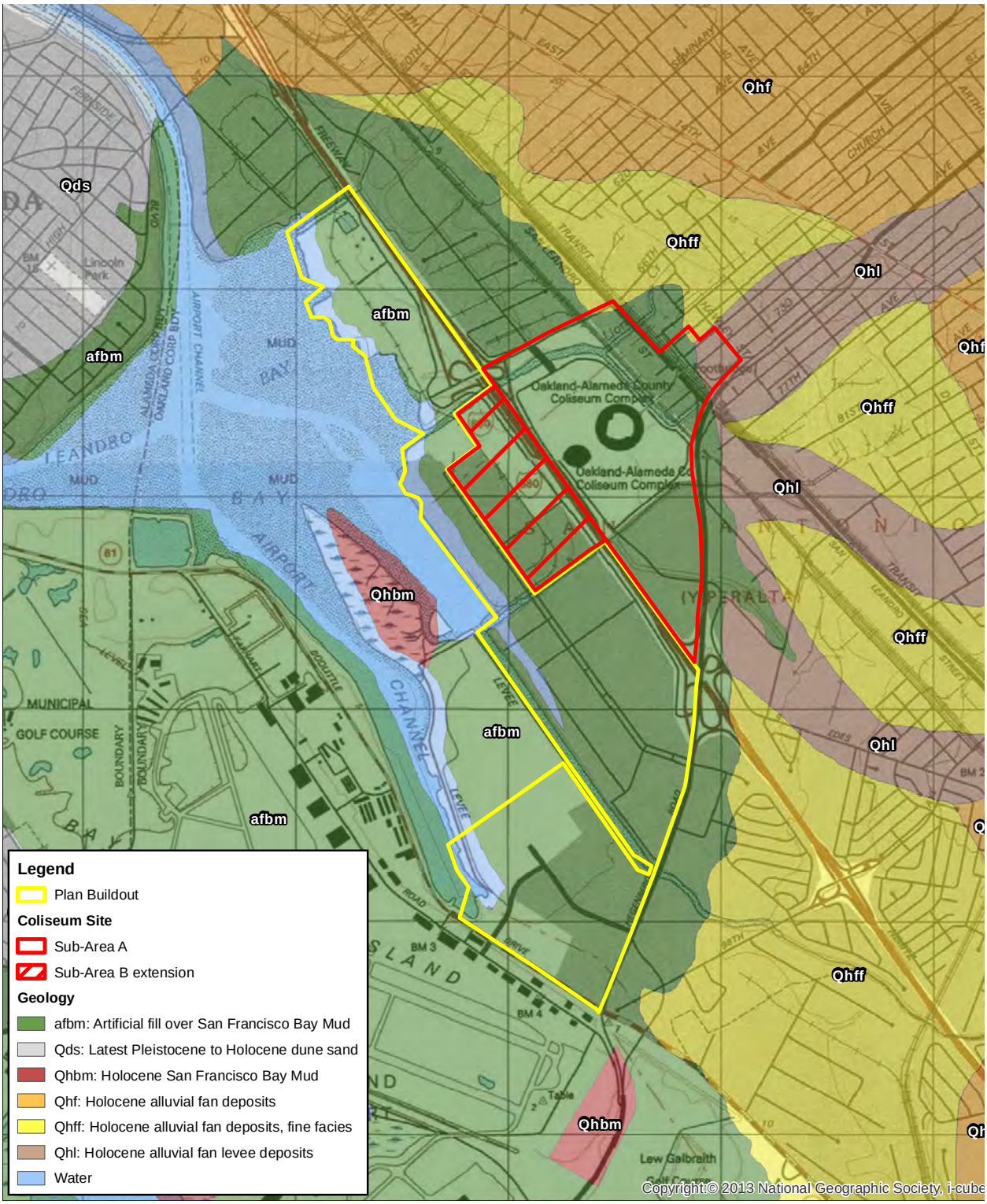


Figure 4.4-4
Archaeological Sensitivity, based Geologic Strata

Source: Garcia & Associates (January 2014)

Table 4.4-4: Archaeological and Paleontological Sensitivity of the Project Area

Estimated Elevation Range (feet)	Stratum/ Formation Code /Name	Stratum /Formation Description	Estimated Age Range	Archaeological Sensitivity	Paleontological Sensitivity
15 to 0 (sea level)	Af (Artificial Fill)	Variable artificial deposit of gravel, sand-clay, wood, metal, brick, glass, concrete, etc. Archaeological deposits may be present at the base of the fill. Ex-situ archaeological deposits may be incorporated within the fill.	Historic and Modern (last 100 years)	Low within fill Very High for shellmounds at base and interface with Qyb	Very Low
10 to -26	Qybm (Quaternary Young Bay Mud)	Estuarine deposit of soft, silty clay and silty sand with mica. May contain or overly archaeological deposits.	Late Holocene	Very High at top and base, low within	Very Low
10 to -40	Qa (Quaternary Alluvium)	Terrestrial stream deposits (alluvium), with relatively horizontal and uniform attitude. May contain buried archaeological deposits.	Middle to Late Holocene	High throughout stratum	Very Low
-2 to -50	Qpf (Quaternary Posey Formation)	Terrestrial firm clays and sandy clays and fine to medium grained sand. May be variably blanketed by well sorted eolian sand of the Merritt Formation.	Late Pleistocene/ Early Holocene	Low to Moderate	High
-20 to -90	Qsaf (Quaternary San Antonio Formation)	Alluvial deposits, slightly tilted attitude. Base of formation contains continuous layer of plant fragment fossils.	Late Pleistocene	Very Low	High

Table 4.4-4: Archaeological and Paleontological Sensitivity of the Project Area

Estimated Elevation Range (feet)	Stratum/ Formation Code /Name	Stratum /Formation Description	Estimated Age Range	Archaeological Sensitivity	Paleontological Sensitivity
-75 to -115	Qobm (Quaternary Old Bay Mud)	Estuarine deposits with marine invertebrates, diatoms, and radiolarians.	Late Pleistocene	Very Low	High
-75 to -130	Quaf (Quaternary Alameda Formation)	Terrestrial alluvial fan deposits, undivided, firm sand, silt, clay, and well-rounded pebbles from underlying Franciscan Formation. Contains plant fossils.	Pliocene and Pleistocene	Very Low	High

Development within the Project Area, including construction-related subsurface disturbance, could damage or destroy previously unidentified prehistoric archaeological resources. There is a low potential for the identification of archaeological resources within the artificial fill which covers the surface of the Project Area from elevation 15 to 0 feet (sea level). However, beneath this stratum, there is a higher potential for the identification of prehistoric archaeological resources where there are Holocene aged soils below the artificial fill and above, or far below, the Bay Mud. These archaeologically sensitive areas are far below the ground surface (see Table 4.4-4). While deep excavation for the construction of new buildings within the Project Area has the potential to impact such resources, identification is not recommended. Geo-archaeological testing to a depth of 36-40 feet beneath the ground surface (which was at an elevation of approximately 11-12 feet) that was conducted for a different project, adjacent to the Project Area on the northeast side along Hegenberger Road (Siskin and Steinkamp 2011), did not discover prehistoric archaeological resources or well developed prehistoric land surfaces that indicate a high potential for the discovery of Native American archaeological resources.

In brief, development sites throughout the Project Area may not be in an archaeologically sensitive area at grade, but may enter an archaeologically sensitive area or stratum if excavation is deep enough to encounter soil types where archeological resources are possible. Therefore, whether an individual development projects are within an archaeologically sensitive area will depend on both its location and the depth of proposed disturbance:

- Almost the entire Project Area is covered with artificial fill as shown on Figure 4.4-4. Table 4.4-4 indicates that this artificial fill has a low sensitivity for prehistoric archeological resources, but a very high sensitivity for such resources at its base (or at the interface with Quaternary Young Bay Mud). Encountering this base material would involve excavation deep enough to pass through the depth of the fill. Therefore, if a development project does not excavate to or below the fill, it is not within an archaeologically sensitive area.

- There is also potential for the presence of historic period resources within the fill. Although such resources are not expected to be comprised of intact, discrete or potentially significant resources, the possibility remains that historic period deposits could be identified that may require additional investigations.
- If development results in excavation deeper than the fill, it then encounters an archaeologically sensitive area.
- A small portion of the Project Area is covered with Holocene alluvial fan deposits (the northeast corner of the Project Area, as shown in Figure 4.4-5), which are considered sensitive for the presence of prehistoric archaeological resources within stratum Qa, as indicated in Table 4.4-4.

Paleontological Resources

Paleontological resources are not anticipated at or near the surface within the Project Area due to the historic development and the existing amount of artificial fill covering the area. As indicated above, the surface stratum of the Project Area consists of a variable veneer of historic and modern artificial fill (Af), which is considered to have very low sensitivity for paleontological resources. Additionally, the entire Qa deposit and all Holocene age deposits are considered to have very low paleontological sensitivity. All are considered to have low paleontological sensitivity.

The deposits below the Qa, such as the Posey Formation, San Antonio Formation, and Alameda Formation, date to the Late Pleistocene and earlier (Atwater et al 1977; Dibblee 1980) when the coast of the Pacific Ocean was 25 to 50 kilometers to the west. Due to the position on the landscape and the age of the deposits, they are considered to have high paleontological sensitivity. Table 4.4-4 and Figure 4.4-4 illustrate the geologic setting and soils and consequently, the depth of paleontological sensitivity of the Project Area.

Development within the Project Area, including construction-related subsurface disturbance such as mass excavation, could destroy fossils by cutting into geological formations where they are located.

- There is a low potential for the identification of paleontological resources within the artificial fill which covers the surface of the Project Area from elevation 15 to 0 feet (sea level).
- Beneath this stratum there is a higher potential for the identification of paleontological resources where there are Late Pleistocene and Pliocene aged strata, far below the artificial fill and the Bay Mud. These areas of sensitivity are situated deep beneath the ground surface (see Table 4.4-4).

Since the presence and significance of fossils is unknown within the Project Area, this event could cause a significant impact to paleontological resources.

Human Remains

Neither the Coliseum District nor the remainder of the Project Area contains any known locations of human remains. However, construction-related subsurface disturbance could result in the inadvertent discovery of human remains.

Standard Conditions of Approval

There is a high potential for the presence of unrecorded historic-period archaeological resources and a high potential for the presence of paleontological resources to be located beneath the upper stratum of fill throughout the Project Area. These sensitive sub-surface areas are located beneath the surface of the Project Area and are not precisely mapped. Their precise location can only be determined by conducting continuous geotechnical coring for each specific location. Given the sensitivity of the area, any new

development project throughout the Project Area that involves excavation would be subject to SCA Cultural-4: Archaeological Resources – Sensitive Sites. This Standard Condition of Approval requires additional intensive pre-construction surveys (such as continuous geotechnical coring) to verify the presence or absence of archaeological sensitivity, or preparation and implementation of a construction ALERT sheet and training of construction contractors, construction period monitoring, and avoidance and recovery measures.

In the event of an unanticipated discovery of prehistoric or historic-period archaeological resources or unique paleontological resources during development within the Project Area, SCA Cultural-1: Archaeological Resources, SCA Cultural-2: Human Remains, and SCA Cultural-3: Paleontological Resources require that excavations within 50 feet of the find be temporarily halted or diverted until the discovery is examined by a qualified archaeologist or paleontologist, documented and evaluated for significance, and procedures established to consider avoidance of the resource or preparation of an excavation plan if avoidance is unfeasible.

Implementation of SCA Cultural-3: Human Remains also ensures that, in the event of discovery of human skeletal remains during construction or ground-breaking activities, all work within a 50-foot radius of the find shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains. Procedures and protocols will be conducted to determine whether the remains are Native American, the California Native American Heritage Commission will be contacted, and appropriate arrangements (including a determination of the feasibility of avoidance, monitoring, data recovery and potentially re-internment) will be made. Implementation of this Standard Condition of Approval would reduce any potential impacts related to the disturbance of human remains to a less than significant level.

With required implementation of SCA Cultural-4: Archaeological Resources – Sensitive Sites, SCA Cultural-1: Archaeological Resources, SCA Cultural-2: Human Remains, and SCA Cultural-3: Paleontological Resources, impacts on archaeological resources, paleontological resources and human remains would be less than significant.

Mitigation Measures

Additional mitigation is not required.

Cumulative Cultural Resources Impacts

Cumulative Impact Cultural-5: The proposed Project would result in the demolition of the existing Coliseum and potentially the demolition of the Arena, resulting in a significant the loss of the historic Coliseum Complex, a Local Register property. The loss of the Coliseum Complex as an historic resource will combine with other known losses of historic resources, resulting in a cumulatively significant impact on historic resources throughout the City. (**SU**)

Cumulative Impact Cultural-6: Cumulative development pursuant to Plan Buildout will not contribute to the destruction of a unique archaeological or paleontological resource or site, nor contribute to disturbance of human remains. Required implementation of SCA Cultural-4: *Archaeological Resources – Sensitive Sites*, SCA Cultural-1: *Archaeological Resources,* SCA Cultural-2: *Human Remains* and SCA Cultural-3: *Paleontological Resources* would reduce the impacts of the proposed Project on these resources to a less than significant level such that the Project would not contribute to significant cumulative impacts to these cultural resources. (**LTS with SCAs**)

Historic Resources

There is only one currently identified Local Register property within the Project Area; the Coliseum Complex. The proposed Project would result in the demolition of the Coliseum stadium and potentially the Arena, materially altering the Coliseum Complex as an historic resource. The loss of this resource would be a significant and unavoidable impact, and its loss would also contribute with the loss of other historic resources, to a cumulative historic resource impact on a City-wide basis,

Additionally, future development throughout the Project Area could result in the loss of or substantial change to historic resources that are not currently CEQA historic resources due to being too recent or otherwise overlooked, but which may be identified as historic resources at a later date. Because new information or new contexts may be discovered, altered properties may have be restored, or properties that may not have been 45 years old at the time they were last surveyed may become eligible for listing in the future, there could be additional historical resources not considered at the time of preparation of this EIR. If it is later determined that demolition or substantial alteration of historically-significant resources would occur as a result of development in the Project Area, the impact of such development would need to be considered under a subsequent CEQA analysis.

Furthermore, implementation of SCA Cultural-6: Vibrations to Adjacent Historic Structures would provide some protection for currently un-evaluated cumulative historic resources that may be adversely affected by surrounding future development.

Archaeological Resources, Paleontological Resources and Human Remains

With required implementation of SCA Cultural-4: Archaeological Resources – Sensitive Sites, SCA Cultural-1: Archaeological Resources, SCA Cultural-2: Human Remains and SCA Cultural-3: Paleontological Resources, future development pursuant to the Specific Plan would not contribute to significant cumulative impacts on archaeological resources, paleontological resources or human remains, and these impacts would be less than cumulatively significant.

Mitigation Measures

None needed

4.5

Geology and Soils

Environmental Setting

Regional Geology and Seismicity

The Project Area is located within the Coast Range Geomorphic Province of California, a north-south trending lineament of moderate relief created by the tectonic movement between the Pacific Plate (to the west) and the North American Plate (to the east). The San Francisco Bay Area and associated delta form a natural break in the Coast Range creating a north and south subdivision. The bedrock of the Coast Ranges is primarily composed of ancient seafloor sediments and volcanic rocks. In most areas, these rocks have been significantly hardened, mineralized, folded and fractured by heat and pressure deep within the earth. This bedrock, broadly divided into the Franciscan Complex and Great Valley Sequence, forms most of the hills and mountains of the Bay Area, but may underlie the San Francisco Bay and adjacent plains at depths ranging from 200 to 2,000 feet.

In the eastern portion of the San Francisco Bay Area (locally known as the East Bay), the East Bay Hills (or Berkeley/Oakland Hills) divide the bayside terrain to the west, from the inland hills and valleys surrounding the 3,848-ft tall Mt. Diablo in the east. The East Bay Hills are a faulted and folded blend of Mesozoic accretionary terrane (primarily the Franciscan Complex) and Cenozoic volcanic rocks. The geography follows the northwest-southeast trending lineament of the Hayward Fault, which bounds the hills to the west. West of the Hayward Fault, the low-lying flat lands that extend to the San Francisco Bay are composed primarily of Quaternary alluvium shed from the uplands to the east.

The San Francisco Bay Area is located within a seismically active region. Seismicity in this portion of California is a result of the lateral relative motion between the Pacific and the North American plates. Movement is accommodated by the San Andreas Fault system, which is composed of the San Andreas Fault proper, and a series of smaller subsidiary faults such as the Hayward and Rodgers Creek Faults. Tectonic activity in the region has resulted in several major earthquakes during the historic period, including the 1868 Hayward Earthquake, the 1906 San Francisco Earthquake, and most recently, the 1989 Loma Prieta Earthquake.[1] According to a recent study completed by the Working Group on California Earthquake Probabilities (WGCEP)[2], which assesses the probability of earthquakes in the San Francisco Bay Area, there is a 63 percent probability that an earthquake of Magnitude 6.7 or greater will strike within the timeframe of the Plan.

According to the Working Group on California Earthquake Probabilities (2008) there are seven active faults in the region that could be responsible for significant seismicity and strong ground motion at the

[1] California Division of Mines and Geology, 2002. Fault Evaluation Reports Prepared Under the Alquist-Priolo Earthquake Fault Zoning Act, CGS CD 2002-01

[2] Working Group On California Earthquake Probabilities (WGCEP), 2007, The Uniform California Earthquake Rupture Forecast, Version 2 (UCERF 2), U.S. Geological Survey Open-File Report 07-1437.

Project Area. In order of increasing distance from the Project Area, these are: the Hayward, San Andreas, Calaveras, Concord-Green Valley, San Gregorio, Marsh Creek-Greenville and Rodgers Creek Faults. All of these faults have documented Holocene (last 10,000 years) movements and all but the San Gregorio and Rodgers Creek Faults have documented historic movements. **Table 4.5-1** lists the regional active faults, their distance and directions from the Project Area, and their maximum credible earthquake (MCE) magnitude.

Table 4.5-1: Active Faulting in the San Francisco Bay Area

Fault	Closest Distance and Direction	Recency of Movement[1]	Future Earthquake Probability[2]	Historical Seismicity	Maximum Moment Magnitude Earthquake
Hayward	2.5 miles northeast	Historic	31% (combined with Rodgers Creek Fault)	M 6.8 in 1868 Many <M 4.5	7.1
Calaveras (Northern Section)	14.5 miles east	Historic	7%	M 5.6–M 6.4 in 1861 M 6.2, 1911 in 1984	6.8
San Andreas (Peninsula Section)	14 miles southwest	Historic	21%	M 7.1 in 1989 M 8.25 in 1906	7.9
San Gregorio	21 miles southwest	Holocene	6%	n/a	7.3
Concord–Green Valley	16 miles northeast	Historic	3%	Historic active creep	6.7
Marsh Creek–Greenville	26 miles East	Historic	3%	M 5.6 in 1980	6.9
Rodgers Creek	26 miles north	Holocene	31% (combined with Hayward Fault)	M 6.7 in 1898 M 5.6 and 5.7 in 1969	7.0

Notes:

1. *Recency of faulting from Jennings and Bryant (2010). Historic: displacement during historic time (within last 200 years), including areas of known fault creep; Holocene: evidence of displacement during the last 11,000 years; Quaternary: evidence of displacement during the last 1.6 million years; Pre-Quaternary: no recognized displacement during the last 1.6 million years (but not necessarily inactive).*
2. *Probability of one or more earthquakes of magnitude 6.7 or greater in the next 30 years from the Working Group on California Earthquake Probabilities (2008). The Working Group estimates the probability of a "background" earthquake not from one of the seven major faults studied to be 9%.*
3. *Moment magnitude is based on the seismic moment of the earthquake, which is equal to the rigidity of the Earth multiplied by the average amount of slip on the fault and the size of the area that slipped. The Maximum Moment Magnitude Earthquake is derived from the joint CDMG/USGS Probabilistic Seismic Hazard Assessment for the State of California (Peterson et al., 1996)*

Sources: Bryant and Hart, 2007; Jennings and Bryant, 2010; Working Group on California Earthquake Probabilities (2008); Peterson et al., 1996.

Geology, Soils, and Geologic Hazards

The following discussion describes the general geology of the Project Area and identifies potential risks associated with such conditions. The majority of the conditions discussed in this section are general to the Oakland area and do not change from one portion of the Project Area to the other. In some cases, geologic conditions will be specific to a certain portion of the Project Area, but unless noted, it can be assumed that the conditions described herein are applicable to the entire Project Area. The primary sources of information for this section consist of publicly available maps and reports prepared by U.S. Geological Survey (USGS), the California Geological Survey (CGS; formerly the California Division of Mines and Geology), and the Natural Resource Conservation Service (NRCS).

Project Area Topography

Elevations of the site range from 15 feet above mean sea level (ft MSL) in the east to approximately 3 ft MSL along the edge of San Leandro Bay. The Project Area is generally flat with a gentle slope to the southwest. Slope gradients are primarily under five percent. Some bank areas bordering Lion Creek or the levees may have locally steep slopes.

Local Geology

Artificial fill placed over the San Francisco Bay Mud (a Holocene delta and estuarine deposit) is prevalent throughout the majority of the Project Area as well as in adjoining areas to the north and south along the Bay margins west of I-880 in Oakland and San Leandro. According to a 2006 USGS map of Quaternary deposits in the San Francisco Bay Area (Witter, et al, 2006), the Project Area rests on artificial fill overlying Bay Mud throughout its central and western portions. The easternmost section of Sub-Area A lies on Holocene alluvial fan deposits. These are mapped as “fine facies”, indicating the deposits are the finer fraction of material from the distal portion of the alluvial fan.

Soils

Shallow soil sampling has been completed at numerous properties within the Project Area for environmental or geotechnical investigations. Review of the results from a geotechnical investigation at the Zhone Technologies Development (located in Sub-Area B, adjacent to I-880) indicates the presence of fill to depths of 7-10 feet below grade (fbg)(Harza, 1999). The fill consists primarily of heterogeneous, medium dense to dense, clayey sands and sandy clays. Below the fill is native Bay Mud, characterized by soft to very soft, highly compressible silty clay and clayey silts to depths of between 26-29 fbg. Underlying the Bay Mud, the investigation encountered interbedded very stiff to hard sandy clays, dense to very dense clayey sands, and very dense sandy gravels which extended to the maximum depth explored (110 fbg). The Zhone site is centrally located within the Project Area and thus is likely to be fairly representative of the local soils.

Review of shallow boring logs from other investigations throughout the Project Area indicates that fill thicknesses are variable, ranging from 5 to 20 feet. **Table 4.5-2** presents fill thickness and fill material types from some representative locations throughout the site. In all cases, the fill is underlain by Bay Mud. A fill thickness map is included as **Figure 4.5-1**.

Table 4.5-2: Fill Thickness and Characteristics at Coliseum City Sites

Location	Sub-Area	Fill Thickness (FT)	Description	Underlain By
Aero Quality Plating	A	5-10	Silty sand and clay (as logged by CPT).	Alluvial fan deposits
CalTrans Maintenance Station	A	3-14	Heterogeneous gravel, sandy gravel and gravelly clay.	Alluvial fan deposits
UPRR 73rd Ave	A	5-10	Heterogeneous clay and clayey sand.	Alluvial fan deposits
Coliseum UST Site	A	20	Heterogeneous silty sand, sandy clay and clay with debris and burnt wood.	Bay Mud
Cruise America	A	10-14	Gravel, silty clay, clayey sand and organic matter.	Bay Mud
BART Connector Project	A	4-5	Gravel in a variable matrix of clay, silt, and fine to coarse sand.	Bay Mud
Coliseum Expansion Project	A	2-5	Silty sand and sandy clay with concrete and asphalt.	Bay Mud
Oakland International Trading Center	A	5	Heterogeneous silty and sandy clay with debris.	Bay Mud
Zhone Technologies	B	7-10	Heterogeneous, medium dense to dense, clayey sands and sandy clays.	Bay Mud
Oakland Municipal Service Center	B	10-14	Heterogeneous low-plasticity gravelly clay, gravel and gravelly sand with debris.	Bay Mud
TD Rowe	C	9-11	Clayey sand and silty sand.	Bay Mud
Chevron Gas Station	C	1-3	Gravel sand and silt mixture.	Alluvial fan deposits
UPS Oakland Hub	D	9-12	Heterogeneous with sand, silty sand and sandy silt; lenses of pea gravel and baserock with brick and other debris throughout.	Bay Mud

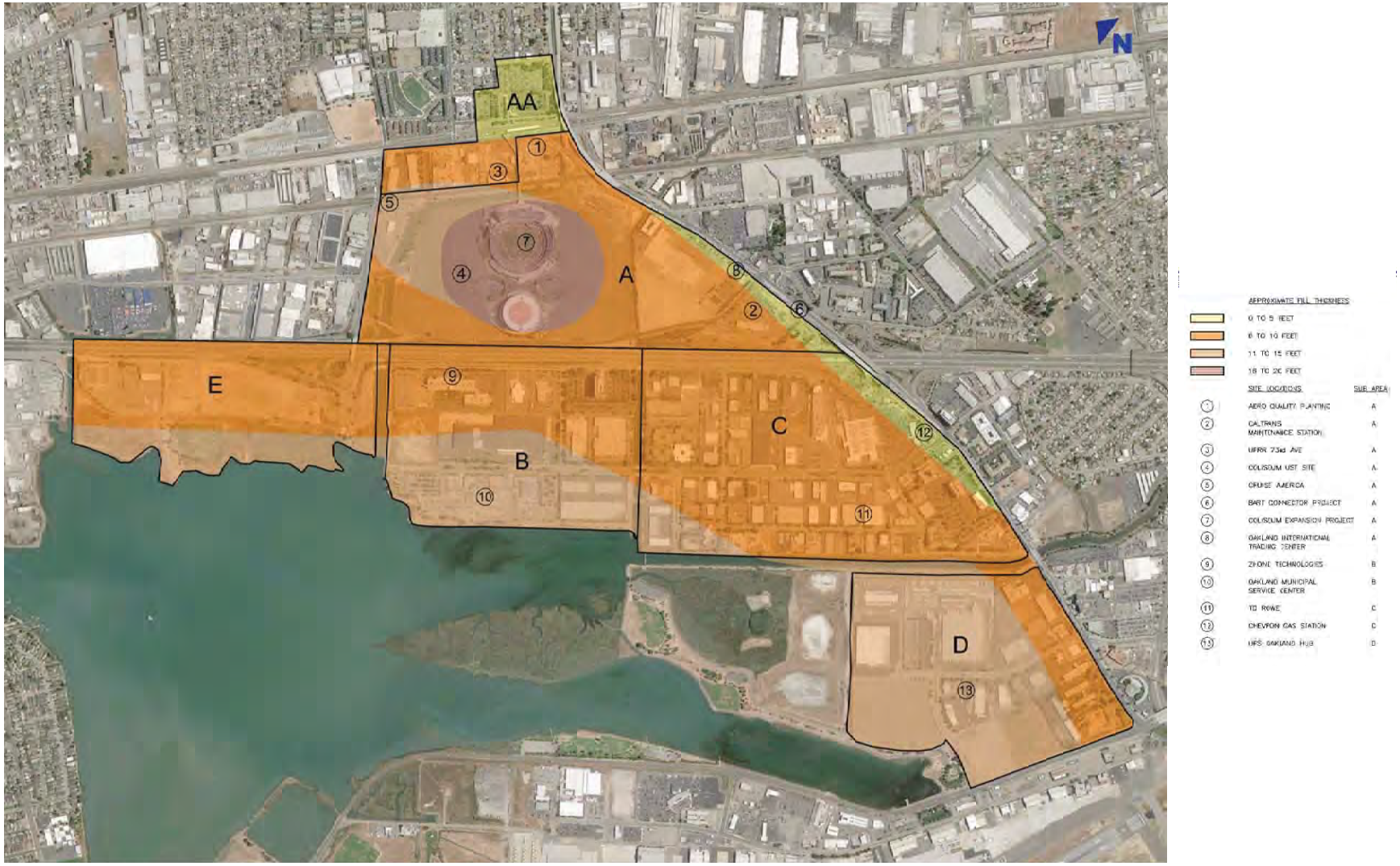


Figure 4.5-1
Approximate Fill Thickness

Source: SLR (December 2013)

Groundwater at the site is shallow and has been encountered between 3 and 7 feet below grade. Because of the proximity to the San Francisco Bay, groundwater in some areas is tidally influenced and fluctuates slightly on a lag with the tidal cycles. Hydraulic gradient is generally shallow and flows from east to the west. Local gradients have been observed to flow in a southeast to easterly direction during certain monitoring events. A thorough analysis of the hydrogeology of the site can be found in the Hydrology and Water Quality Section of this EIR (Chapter 4.8).

Geologic Hazards

The widespread fill and underlying native soils at the site present potential hazards related to soil erosion, settlement, and expansive soil materials. These hazards are discussed below and provide the initial context for further evaluation in the impact analysis.

Seismic Hazards

Seismic hazards are generally classified into two categories: primary seismic hazards (surface fault rupture and ground shaking) and secondary or co-seismic hazards (liquefaction and other types of seismically induced ground failure, along with seismically induced landslides and tsunamis). In general, the Project Area is classified as a seismic hazard zone due to the secondary seismic hazard of liquefaction susceptibility. This designation triggers certain Standard Conditions of Approval (SCA) with the City of Oakland as discussed in the Regulatory Setting portion of this section. The following discussion identifies the seismic hazards for the Project Area and provides the initial context for further evaluation in the impact analysis.

Surface Fault Rupture

Earthquake surface rupture is the physical displacement of surface deposits, either laterally or vertically, along the fault trace. Surface rupture is the surface expression of the subsurface fault movement and generally only occurs along or within a few hundred feet of the fault trace that moves during an earthquake. Not all large earthquakes will have a surface expression or co-seismic surface rupture (e.g. blind thrust faulting associated with the 1994 Northridge, M_W6.7 earthquake).

The highest potential for surface faulting is along existing fault traces that have had Holocene fault displacement. The closest active fault to the Project Area is the northern section of the Hayward Fault, approximately 1.8 miles to the northeast. The risk of fault rupture is considered low because no active or potentially active faults are known to pass through the Project Area (CGS, 1982).

Ground Shaking

Earthquakes on active or potentially active faults, depending on magnitude and distance from the Project Area, could produce a range of ground-shaking intensities. Historically, earthquakes have caused strong ground- shaking and damage in the San Francisco Bay Area, the most recent being the M6.9 Loma Prieta earthquake in October 1989. The epicenter was approximately 44 miles south of the Project Area, but this earthquake is estimated to have caused moderate (VI) to very strong (VIII) shaking intensities in the Oakland area[3] (ABAG, 2003). The largest earthquake in Bay Area history was the San Francisco Earthquake of 1906, with an estimated moment magnitude of 7.9. This produced strong (VII) to violent (IX) shaking intensities in the Project Area (ABAG, 2003).

[3] Shaking intensities referenced here are based on the Modified Mercalli Intensity Scale (ABAG, 2003a), which ranges from I (not felt) to XII (damage near total).

Seismologists and engineers in the State of California use a probabilistic seismic hazard assessment (PSHA) to estimate future strong ground motions at proposed building sites. The PSHA takes into consideration the range of possible earthquake and estimates their characteristic magnitudes to generate a probability map for ground shaking. The result is a map depicting values of peak ground acceleration[4] (PGA) for different probabilities of exceedance in a time period. Typical sets of probability and time period are the event with 10% probably in 50 years and the 1% in 50 years event. These probabilities correspond to return periods of 475 and 2,475 year respectively. Use of the 10% in 50 years probability level provides engineers designing buildings with ground motions that have a 90 percent chance of not occurring in the next 50 years. The PSHA indicates that the 10 percent probability of exceedance in 50 years PGA ranges from 0.580 g to 0.617 g in the Project Area, depending on the portion of the Site (USGS and CGS, 2002 and CGS, 2008).

Generally PGA values increase towards the east, with the highest value (0.617 g) indicated for Sub-Area A and the lowest value of 0.580 g indicated for Sub-Area D.[5] The PGA values for the Project Area are relatively high for the San Francisco Bay Area, but not outside the range of predicted values for similar sites. Some special construction techniques will need to be employed to mitigate against strong ground motion. These may include pile foundations and seismic pads. The construction techniques that will be required are fairly common in the San Francisco Bay Area, particularly around the Bay margin.

Liquefaction

Soil liquefaction is a condition in which saturated, granular soils undergo a substantial loss of strength and deformation due to pore pressure increase resulting from cyclic stress application induced by earthquakes. In the process, the soil acquires mobility sufficient to permit both horizontal and vertical movements if the soil mass is not confined. Soils most susceptible to liquefaction are saturated, loose, clean, uniformly-graded, and fine-grained sand deposits. If liquefaction occurs, foundations resting on or within the liquefiable layer may undergo settlements. This will result in reduction of foundation stiffness and capacity. When this occurs, the structure can settle, tip, or even become buoyant and shift upwards. Liquefaction and associated failures could damage foundations, roads, underground cables and pipelines, and disrupt utility service.

With respect to the Project Area, liquefaction susceptibility is particularly high in areas of loose, uniformly graded sandy deposits similar to much of the fill. The depth to groundwater influences the potential for liquefaction, as sediments need to be saturated to have a potential for liquefaction. As described above and in other sections, groundwater at the Project Area is relatively shallow. According to the Seismic Hazard Zone Reports for the San Leandro and Oakland East Quadrangles (CGS, 2003), for artificial fill over Bay Mud with depths to groundwater of less than 10 to 30 fbg the liquefaction susceptibility rating is “high to very high”. A 2006 liquefaction susceptibility map prepared for USGS and

[4] Peak Ground Acceleration is the maximum horizontal acceleration expressed as a fraction of the earth’s gravitational acceleration (g).

[5] PGA can be estimated for different locations in the Project Area using the online CGS Ground Motion Interpolator found at http://www.quake.ca.gov/gmaps/PSHA/psha_interpolator.html. Ground Motion values were interpolated from a grid (0.05 degree spacing) of values calculated using the 2008 PSHA model. Interpolated ground motion may not equal values calculated for a specific site, therefore these values are not intended for design purposes.

CGS (Witter et. al, 2006) indicates that over 90% of the Project Area is within the "very high" category, with a small portion of eastern Sub-Area A mapped as "high".[6]

Lateral Spreading

Seismically induced lateral spreading involves lateral movement of earth materials laying over potentially liquefiable layers. Lateral spreading is characterized by near-vertical cracks with predominantly horizontal movement of the soil mass. Because the potential for liquefaction at the Project Area is high in some areas, the potential for lateral spreading could also be high.

Liquefaction-Induced Settlement

Settlement of the ground surface can be accelerated and accentuated by earthquakes. During an earthquake, settlement can occur as a result of the relatively rapid compaction and settling of subsurface materials (particularly loose, uncompacted, and variable sandy sediments above the water table) due to the rearrangement of soil particles during prolonged ground-shaking. Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different amounts). Areas underlain by artificial fill would be susceptible to this type of settlement. Given the geologic setting of the Project Area, this area could be subjected to earthquake-induced settlement.

Tsunamis

Tsunamis are generated in large bodies of water by fault displacement or major ground movement. The California Emergency Management Agency (CalEMA) and CGS have developed a series of 1:24,000 maps showing inundation limits in the event of a tsunami. The inundation limits are created by combining inundation results from an ensemble of source events affecting a given region. The source events are major earthquakes on local faults or great (M8.6-M9.4) earthquakes on distant faults. The maps indicate that almost the entire Project Area is within the tsunami inundation zone and could potentially be affected under extreme circumstances.

Regulatory Setting

State

Alquist-Priolo Earthquake Fault Zoning Act

The California Legislature passed the Alquist-Priolo Earthquake Fault Zoning Act in 1972 to mitigate the hazard of surface faulting to structures[7] for human occupancy. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. Local agencies must regulate most development in fault zones established by the State Geologist. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, the city or county with jurisdiction must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active or potentially active faults.

[6] The 2006 Liquefaction Susceptibility map can be viewed or downloaded from http://pubs.usgs.gov/of/2006/1037/.

[7] California Division of Mines and Geology, 1997 revision, Fault-Rupture Hazard Zones in California, DMG Special Publication 42.

California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1990 (California Public Resources Code Sections 2690-2699.6) addresses seismic hazards other than surface rupture, such as liquefaction and seismically induced landslides. The Seismic Hazards Mapping Act specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

California Building Code

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, sets minimum requirements for building design and construction. In the context of earthquake hazards, the California Building Standards Code's design standards have a primary objective of assuring public safety and a secondary goal of minimizing property damage and maintaining function during and following seismic events.[8]

Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 to be enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2010 edition of the CBC is based on the 2009 International Building Code (IBC) published by the International Code Conference. The 2010 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (such as wind loads) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

City of Oakland

City of Oakland General Plan

The Safety Element of the City of Oakland General Plan enumerates the following policies and actions designed to reduce risks associated with earthquakes that may affect the City of Oakland:

[8] Bonneville, David New Building Code Provisions and Their Implications for Design and Construction in California (abstract), 2007, obtained from http://www.consrv.ca.gov/cgs/smip/docs/seminar/SMIP07/Pages/Paper12_Bonneville.aspx

- **Geologic Hazards, Policy GE-1:** Develop and continue to enforce and carry out regulations and programs to reduce seismic hazards and hazards from seismically triggered phenomena.
  - ***Action GE-1.2*:** Enact regulations requiring the preparation of site-specific geologic or geotechnical reports for development proposals in areas subject to earthquake-induced liquefaction, settlement or severe ground shaking, and conditioning project approval on the incorporation of necessary mitigation measures.
- **Geologic Hazards, Policy GE-2:** Continue to enforce ordinances and implement programs that seek specifically to reduce the landslide and erosion hazards.
  - ***Action GE-2.1:*** Continue to enforce provisions under the subdivision ordinance requiring that, under certain conditions, geotechnical reports be filed and soil hazards investigations be made to prevent grading from creating unstable slopes, and that any necessary corrective actions be taken.
  - ***Action GE-2.2:*** Continue to enforce the grading, erosion and sedimentation ordinance by requiring, under certain conditions, grading permits and plans to control erosion and sedimentation.
  - ***Action GE-2.6:*** Design fire-preventive vegetation-management techniques and practices for creek sides and high-slope areas that do not contribute to the landslide and erosion hazard.
- **Geologic Hazards, Policy GE-3:** Continue, enhance or develop regulations and programs designed to minimize seismically related structural hazards from new and existing buildings.
  - ***Action GE-3.1***: Adopt and amend as needed updated versions of the California building code so that optimal earthquake-protection standards are used in construction and renovation projects***.***
  - ***Action GE-3.2:*** Continue to enforce the unreinforced masonry ordinance to require that potentially hazardous unreinforced masonry buildings be retrofitted or be otherwise made to reduce the risk of death and injury from their collapse during an earthquake.
  - ***Action GE-3.3***: Continue to enforce the earthquake-damaged structures ordinance to ensure that buildings damaged by earthquakes are repaired to the extent practicable.
- **Geologic Hazards, Policy GE-4:** Work to reduce potential damage from earthquakes to "lifeline" utility and transportation systems.
  - ***Action GE-4.2:*** As knowledge about the mitigation of geologic hazards increases, encourage public and private utility providers to develop additional measures to further strengthen utility systems against damage from earthquakes, and review and comment on proposed mitigation measures.

City of Oakland Municipal Code

The Safety Element of the City of Oakland's General Plan identifies policies and actions that apply to geologic hazards. The City implements these pertinent sections of the General Plan by enforcing the ordinances described. Among these are ordinances to minimize soil hazards, reduce soil erosion and protect stream quality, prevent grading from creating unstable slopes, abate unreinforced masonry building hazards, and mitigate fault rupture hazards.

Subdivision Ordinance (incorporated in Chapter 16.20.060 of the Oakland Municipal Code)

Requires that the sub divider file a preliminary soil report with the City Engineer prior to the submission of a final subdivision map. The preliminary soil report must describe (1) how slopes will be kept stable against sliding and excessive erosion, and (2) if critically expansive soils are present or if other hazardous or problematic soil characteristics are present and what measures can be taken to avoid these hazards or problems. This preliminary soil report may be waived if the Building Inspector and City Engineer both agree that no preliminary analysis is necessary (Ordinance 11924, Section 4).

Subdivision Ordinance (Chapter 16.20.080)

If the preliminary report indicates the presence of critically expansive soils, instability of slopes, or other soil problems which would lead to structural damage, a soil investigation of each lot in the subdivision shall be made by a civil engineer who is registered by the state of California. The soil investigation shall be made after grading, and a report shall be submitted recommending corrective action which is likely to prevent structural damage to each structure proposed to be constructed in the subdivision. Copies of the report shall be filed with the Building Inspector and the Street Engineering Department. The information contained in the report of the soils investigation may be included in the certificate respecting the grading work.

Grading Ordinance (Chapter 15.04.660)

The Grading Ordinance requires a permit for grading activities on private or public property for projects that exceed certain criteria, such as amount of proposed excavation and degree of site slope. During project construction, the volume of the excavated fill material could exceed 50 cubic yards and could result in a 20 percent slope onsite, or the depth of excavation could exceed five feet at any location. Therefore, the project sponsor would be required to apply for the grading permit and prepare a grading plan, erosion and sedimentation control plan, and drainage plan.

Unreinforced Masonry Ordinance (Chapter 15.28)

Some of the unreinforced masonry buildings surveyed by the Oakland Cultural Heritage Survey in 1994 are located in the Project Area. To abate the hazards posed by unreinforced masonry buildings, a Building Official assigns a priority level to buildings based many factors including the soil type on which the building is located. This priority level determines the amount of time the building owner has to file a building permit application and complete the retrofit work. If a building has been upgraded but no longer meets the structural standards under which it was retrofitted, or if the occupancy classification of the building has or will change, the building may require a new filing of an Engineer's Report and Building Permit Application. Provisions of the California State Historical Building Code (Part 8 of Title 24 in the California Code of Regulations) may apply to any buildings defined as historic by the Oakland cultural heritage survey. Geologic reports ordinance (Chapter 15.20): The geologic report ordinance in Chapter 15.20 of the Oakland Municipal Code does not apply to the Project Area because the Project Area is not within the boundaries of an Alquist-Priolo Fault Rupture Hazard Zone (CGS, 2002).

Building Services Division

In addition to compliance with building standards set forth by the 2009 IBC and 2010 CBC, a project applicant would be required to submit to the Oakland Building Services Division an engineering analysis accompanied by detailed engineering drawings for review and approval prior to excavation, grading, or construction activities on a project site. Specifically, an engineering analysis report and drawings of relevant grading or construction activities on a project site would be required to address constraints and

incorporate recommendations identified in geotechnical investigations. These required submittals and City reviews ensure that the buildings are designed and constructed in conformance with the seismic and other requirements of all applicable building code regulations, pursuant to standard City of Oakland procedures.

City of Oakland Standard Conditions of Approval

The City of Oakland's Standard Conditions of Approval (SCAs) relevant to reducing geologic and seismic impacts due to the adoption and development under the proposed Project are listed below. If the proposed Project is approved by the City, all applicable SCAs would be adopted as conditions of approval and required of the adoption and development under the proposed Project, as applicable, to help ensure less-than-significant impacts from geologic and seismic conditions. The SCAs are incorporated and required as part of the proposed Project, so they are not listed as mitigation measures.

These Development Standards apply to ALL projects that require a Tentative Tract Map or Tentative Parcel Map (not part of this approval) except condominium conversions.

SCA Geo-1: Soils Report. Required as part of the submittal of a Tentative Tract or Tentative Parcel Map. A preliminary soils report for each construction site within the project area shall be required as part of this project and submitted for review and approval by the Building Services Division. The soils reports shall be based, at least in part, on information obtained from on-site testing. Specifically the minimum contents of the report should include:

a. Logs of borings and/or profiles of test pits and trenches:

   i. The minimum number of borings acceptable, when not used in combination with test pits or trenches, shall be two (2), when in the opinion of the Soils Engineer such borings shall be sufficient to establish a soils profile suitable for the design of all the footings, foundations, and retaining structures.

   ii. The depth of each boring shall be sufficient to provide adequate design criteria for all proposed structures.

   iii. All boring logs shall be included in the soils report.

b. Test pits and trenches:

   i. Test pits and trenches shall be of sufficient length and depth to establish a suitable soils profile for the design of all proposed structures.

   ii. Soils profiles of all test pits and trenches shall be included in the soils report.

c. A plat shall be included which shows the relationship of all the borings, test pits, and trenches to the exterior boundary of the site. The plat shall also show the location of all proposed site improvements. All proposed improvements shall be labeled.

d. Copies of all data generated by the field and/or laboratory testing to determine allowable soil bearing pressures, sheer strength, active and passive pressures, maximum allowable slopes where applicable and any other information which may be required for the proper design of foundations, retaining walls, and other structures to be erected subsequent to or concurrent with work done under the gradient permit.

e. A written Soils Report shall be submitted which shall include but is not limited to the following:

   i. Site description

   ii. Local and site geology

   iii. Review of previous field and laboratory investigations for the site

iv. Review of information on or in the vicinity of the site on file at the Information Counter, City of Oakland, Office of Planning and Building.

v. Site stability shall be addressed with particular attention to existing conditions and proposed corrective attention to existing conditions and proposed corrective actions at locations where land stability problems exist.

vi. Conclusions and recommendations for foundations and retaining structures, resistance to lateral loading, slopes, and specifications, for fills, and pavement design as required.

vii. Conclusions and recommendations for temporary and permanent erosion control and drainage. If not provided in a separate report they shall be appended to the required soils report.

viii. All other items which a Soils Engineer deems necessary.

ix. The signature and registration number of the Civil Engineer preparing the report.

f. The Director of Planning and Building may reject a report that she/he believes is not sufficient. The Director of Planning and Building may refuse to accept a soils report if the certification date of the responsible soils engineer on said document is more than three years old. In this instance, the Director may be require that the old soils report be recertified, that an addendum to the soils report be submitted, or that a new soils report be provided.

These Development Standards apply to ALL projects that require an application for a Tentative Tract Map or Tentative Parcel Map (not part of this approval) AND are located partially or wholly within the Seismic Hazards Zone. Exceptions include condominium conversions and single family wood or steel frame dwellings not exceeding two stories, when not part of a development of 4 or more dwellings.

SCA Geo-2: Geotechnical Report. Required as part of the submittal of a tentative Tract Map or tentative Parcel Map. A site-specific, design level, Landslide or Liquefaction geotechnical investigation for each construction site within the project area shall be required as part of this project and submitted for review and approval by the Building Services Division. Specifically:

a. Each investigation shall include an analysis of expected ground motions at the site from identified faults. The analyses shall be accordance with applicable City ordinances and polices, and consistent with the most recent version of the California Building Code, which requires structural design that can accommodate ground accelerations expected from identified faults.

b. The investigations shall determine final design parameters for the walls, foundations, foundation slabs, surrounding related improvements, and infrastructure (utilities, roadways, parking lots, and sidewalks).

c. The investigations shall be reviewed and approved by a registered geotechnical engineer. All recommendations by the project engineer, geotechnical engineer, shall be included in the final design, as approved by the City of Oakland.

d. The geotechnical report shall include a map prepared by a land surveyor or civil engineer that shows all field work and location of the "No Build" zone. The map shall include a statement that the locations and limitations of the geologic features are accurate representations of said features as they exist on the ground, were placed on this map by the surveyor, the civil engineer or under their supervision, and are accurate to the best of their knowledge.

e. Recommendations that are applicable to foundation design, earthwork, and site preparation that were prepared prior to or during the project's design phase, shall be incorporated in the project.

f. Final seismic considerations for the site shall be submitted to and approved by the City of Oakland Building Services Division prior to commencement of the project.

g. A peer review is required for the Geotechnical Report. Personnel reviewing the geologic report shall approve the report, reject it, or withhold approval pending the submission by the applicant or sub divider of further geologic and engineering studies to more adequately define active fault traces.

h. Tentative Tract or Parcel Map approvals shall require, but not be limited to, approval of the Geotechnical Report.

These Development Standards apply to ALL projects that involve any new construction (residential, commercial, or industrial); AND includes a geologic hazard, as defined in California Public Resource Section 26507, as an actual or threatened landslide, land subsidence, soil erosion, earthquake, fault movement, or any other natural or unnatural movement of land or earth; AND technical, environmental peer review, or other applicable report pertaining to the actual or threatened geologic hazard specify the need to require a GHAD OR a greater than normal degree of construction attention, monitoring of the site, or maintenance of project improvements.

SCA Geo-3: Oakland Area Geologic Hazards Abatement District (GHAD). Prior to approval of the final map, the project shall complete annexation into the Oakland Area GHAD and provide evidence that all assessments, reserves and other requirements necessary to fund the GHAD with respect to the annexed properties have been established and authorized. The applicant shall prepare a Plan of Control, as defined in Public Resource Code Section 26509 which shall specify all anticipated operations and maintenance responsibilities of the GHAD for the annexed properties.

a. The applicant shall provide an initial funding on the annexed properties in the amount to be determined by the City Engineer in accordance with the Plan of Control and the Engineer's Report for the annexed properties which shall be no later than the recordation of the final map for the project.

b. The Engineer's Report shall identify the projected costs and a budget for GHAD operations and reserve accumulation for the annexed properties.

c. The Engineer's Report shall include costs for the services of the project manager, attorney and treasurer/clerk for the GHAD.

The applicant shall request the GHAD to defend, hold harmless, and indemnify the Indemnified Parties (as that is defined in Condition #7 and their insurers against any and all liability, damages, claims, demands, judgments, losses, ("Indemnified GHAD claims") or other forms of legal or equitable relief related to the operation (including, without limitation, maintenance of GHAD owned property) of a the annexed properties and in the case of the City Council members, actions taken by said members while acting as the GHAD Board of Directors. This indemnity shall include, without limitation, payment of litigation expenses associated with any action herein. The Indemnified Parties shall have the right to select counsel to represent the Indemnified Parties, at the GHAD's expense, in defense of any action specified in this condition of approval (92). The Indemnified Parties shall take all reasonable steps to promptly notify the GHAD of any claim, demand, or legal actions that may create a claim for indemnification under these conditions of approval. Within 90 days of the annexation to the GHAD, the applicant shall request the GHAD to enter into an Indemnification Agreement in a form acceptable to the City Attorney to establish in more specific detail the terms and conditions of the GHAD's indemnification obligations set forth herein. Any failure of any party to timely execute such Indemnification Agreement shall not be construed to limit any right or obligation otherwise specified in these Conditions of Approval.

Impacts, Standard Conditions of Approval and Mitigation Measures

Thresholds of Significance

The proposed Project would have a significant impact on the environment if it would expose people or structures to geologic hazards, soils, and/or seismic conditions so unfavorable that they could not be overcome by special design using reasonable construction and maintenance practices. Specifically, the proposed Project would have a significant impact on the environment if it would:

1. Expose people or structures to substantial risk of loss, injury, or death involving:
   - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map or Seismic Hazards Map issued by the State Geologist for the area or based on other substantial evidence of a known fault [NOTE: Refer to California Geological Survey 42 and 117 and Public Resources Code section 2690 et. seq.];
   - Strong seismic ground shaking;
   - Seismic-related ground failure, including liquefaction, lateral spreading, subsidence, collapse; or
   - Landslides;
2. Result in substantial soil erosion or loss of topsoil, creating substantial risks to life, property, or creeks/waterways;
3. Be located on expansive soil, as defined in section 1802.3.2 of the California Building Code (2007, as it may be revised), creating substantial risks to life or property;
4. Be located above a well, pit, swamp, mound, tank vault, or unmarked sewer line, creating substantial risks to life or property;
5. Be located above landfills for which there is no approved closure and post-closure plan, or unknown fill soils, creating substantial risks to life or property; or
6. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Approach to Analysis

The potential geologic, geotechnical, and seismic effects of the proposed Project can be considered from two points of view: (1) construction impacts; and, (2) geologic hazards to people or structures.

The basic criterion applied to the analysis of construction impacts is whether construction of the proposed Project will create unstable geologic conditions that would last beyond the short-term construction period. The analysis of geologic hazards is based on the degree to which the site geology could produce hazards to people or structures from earthquakes, ground shaking, ground movement, fault rupture, or other geologic hazards, features or events. Development under the prosed Project could eventually result in various types of construction activities within the Project Area that would require ground disturbance and use of hazardous materials. These types of construction activities could result in impacts to or from geology, soils, and geohazards. Potential impacts to geology, soils, and geohazards are analyzed within the context of existing plans and policies, permitting requirements, local ordinances, and the City of Oakland's Standard Conditions of Approval.

Summary of Impacts

The proposed Project is in a seismically-sensitive area given its regional proximity to earthquake faults and the underlying soils in the Project Area. The Project Area also is underlain with soils – notably artificial fill – that could exhibit and result in further settlement, differential settlement or expansion that may affect future development under the proposed Project.

These impacts will be mitigated to a less than significant level by the City's SCAs. The presence of underground utilities, wells or other subsurface features present less than significant impacts. The proposed Project would experience no significant impact under the other thresholds of significance.

Exposure to Seismic Hazards

Coliseum District and Plan Buildout

Impact Geo-1: The proposed Project would not expose people or structures to substantial risk of loss, injury, or death involving strong seismic ground shaking and seismic-related ground failure including liquefaction, lateral spreading, subsidence, or collapse. **(LTS with SCAs)**

Earthquake Fault Rupture

There are no active faults that cross the Project Area, and the nearest active fault is more than two miles away. Therefore, the potential for fault rupture to affect the development under the proposed Project is very low.

Strong Seismic Ground Shaking and Seismic-Related Ground Failure

If development under the proposed Project is not properly designed or constructed, it has the potential to increase the exposure of people to injury or harm during a large regional earthquake. As discussed in the Environmental Setting, the Project Area could be subject to very strong ground shaking, capable of causing damage to structures, and underground utilities. The majority of the Project Area is located over soils susceptible to liquefaction, which could increase the damages incurred by structures and utility lines in the event of an earthquake. These hazards must be properly evaluated and mitigated for as specific projects are implemented within the Project Area.

As described in the Regulatory Setting, development under the proposed Project would be required to comply with the Seismic Hazards Mapping Act (in liquefaction hazard zones) and with the California Building Code. These laws require development projects to demonstrate that (1) soil conditions are known and that foundations have been designed according to the proper seismic design category, and (2) that the risk of liquefaction and other ground failures has been evaluated and that appropriate mitigation measures, if necessary; have been incorporated into project design. Since the entire Project Area is located within a Seismic Hazard Zone for liquefaction, development under the proposed Project would be required to comply with CGS guidelines for evaluating and mitigating seismic hazards (Special Publication 117A) (CGS, 2008).

Landslides

The Project Area does not contain slopes that are susceptible to landslides or slope failure. The gentle sloping topography of the area puts the potential for landslides or slope failure to affect any of the proposed development or adaptive reuse in the Project Area as very low and is therefore not discussed further.

Standard Conditions of Approval

To ensure compliance with the Seismic Hazards Mapping Act and the California Building Code, as well as the seismic requirements of the City of Oakland Building Code, the City requires owners/developers to prepare a soils report and geotechnical report for proposed developments that include generally accepted and appropriate engineering techniques for determining the susceptibility of a project site to various geologic and seismic hazards. These requirements are implemented through SCAs.

The geotechnical report (SCA Geo-2) would include an analysis of ground shaking effects, liquefaction potential, and provide recommendations to address these hazards through design. Owners/developers of development under the proposed Project would be required to submit an engineering analysis accompanied by detailed engineering drawings to the City of Oakland Building Services Division prior to excavation, grading, or construction activities on a project site. Geotechnical and seismic design criteria would conform to engineering recommendations consistent with the seismic requirements set forth in the California Code of Regulations, Title 24, California Building Standards Code in effect at the time of permit application. The application of current geotechnical design criteria required under the CBC and the SCAs would reduce the potential impacts associated with seismic hazards such as liquefaction and ground shaking to a **less than significant** level.

Soil Erosion

Coliseum District and Plan Buildout

Impact Geo-2: The proposed Project would not result in substantial soil erosion or loss of topsoil, creating substantial risks to life, property, or creeks/waterways. **(LTS with SCAs)**

Chapter 4.8, Hydrology and Water Quality, discusses soil erosion and its effect on water quality. This criterion focuses more on the potential for excessive or accelerated erosion to undermine building foundations.

Standard Conditions of Approval

The City of Oakland imposes SCAs to reduce soil erosion during construction for water quality purposes, which would also effectively prevent excessive rilling or rutting of soil on construction sites. These SCAs include SCA Hydro-1: Erosion and Sedimentation Control (when no grading permit is required), SCA Hydro-2: Erosion and Sedimentation Control Plan, SCA Hydro-3: Stormwater Pollution Prevention Plan (SWPPP) and SCA Hydro-4: Site Design Measures for Post-Construction Stormwater Management. The Project Area is in a developed urban area that is paved or landscaped, and served by a storm drain system. Therefore there would be a **less than significant** impact from excessive erosion on foundations or utilities.

Expansive Soil

Coliseum District and Plan Buildout

Impact Geo-3: The proposed Project may be located on expansive soil, as defined in section 1802.3.2 of the California Building Code (2007, as it may be revised), creating substantial risks to life or property. **(LTS with SCAs)**

As discussed in the Environmental Setting section above, soils containing a high percentage of clays are generally most susceptible to expansion. Expansive soils can damage foundations of above-ground structures, paved roads and streets, and concrete slabs. The Bay Mud that underlies much of the Project Area, as well as areas underlain by artificial fill, could potentially be subject to shrink-swell behavior. Further settlement and differential settlement could affect portions of the Project Area. Larger buildings may put loads on underlying geologic layers of mud and silt that could compress. Locations mapped as artificial fills may be underlain by historic bay sloughs, old foundations, and former marsh areas. These areas may experience some degree of differential settlement, and site-specific geotechnical investigations should be conducted prior to construction at a given location.

Standard Conditions of Approval

As discussed under **Impact Geo-1**, the City of Oakland imposes SCAs requiring proposed developments to conduct a soil reports (SCA Geo-1) and geotechnical studies (SCA Geo-2). These SCAs would provide for construction methods and building designs to address problematic soils (such methods typically involve soil removal and replacement, soil improvement, or special foundation design). SCAs would also provide for design methods to protect structures from expansive soil and settlement concerns. The application of current geotechnical design criteria required under the CBC and the SCAs would reduce the potential impacts associated with expansive soils, subsidence, seismically-induced settlement and differential settlement to **less than significant**.

Located above Unstable Soil

Coliseum District and Plan Buildout

Impact Geo-4: The proposed Project is located in a developed area above one or more of the following: well, pit, swamp, mound, tank vault, or unmarked sewer line; these features do not create substantial risks to life or property. **(LTS)**

The Project Area is in a previously developed area. Accordingly, underground structures and utilities are widely present. A number of monitoring wells have been installed for environmental purposes and underground storage tanks and utility vaults are present at various locations. Sewer lines are present in the Project Area, but it is not likely that unmarked sewer lines are present. The Project Area is not located within a "swamp," although portions of the Project Area border wetlands and the majority of the area is located on fill placed over tidal wetlands and estuary. No pits or mounds have been identified in the Project Area.

The features identified do not create substantial risk to life or property. The utilities, wells or other subsurface features that are present can be moved or incorporated during the design or construction phases of the proposed Project, and thus this impact is **less than significant**.

Located above Landfill

Coliseum District and Plan Buildout

Impact Geo-5: The proposed Project is not located above landfills for which there is no approved closure and post-closure plan. The proposed Project is located above fill. **(LTS with SCAs)**

There are no active or closed landfills within the Project Area. However, as described in detail above, the majority of the Project Area lies on imported fill of various and sometimes uncertain provenance (Table 4.5-2; Figure 4.5-1). By itself, the presence of fill does not pose a substantial risk to life or property. The impacts of fill in this location are primarily related to seismic hazards and the possibility of expansive soils.

Standard Conditions of Approval address these potential hazards are described above under Impacts Geo-1 and Geo-3, and are **less than significant** with the application of the cited SCAs.

Wastewater Disposal

Coliseum District and Plan Buildout

Impact Geo-6: The Project Area has sewers available for the disposal of wastewater and therefore it is not applicable whether its soils are incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. **(LTS)**

The Project Area is located within an urban area where all development would be able to tie into existing wastewater infrastructure. Wastewater is conveyed to, treated and disposed of at the East Bay Municipal Utilities District wastewater treatment plant; see Chapter 4.14 Utilities for details on wastewater conveyance and treatment capacity. No septic tanks or alternative wastewater disposal systems are necessary or proposed. Therefore, the proposed Project would have a **less than significant** impact related to the capacity of local soils to adequately supporting the use of septic tanks or alternative wastewater disposal systems.

Cumulative Geology and Soils Impacts

Impact Geo-7: Adoption and development under the proposed Project, when combined with other past, present, existing, approved, pending and reasonably foreseeable development in the vicinity, would not result in significant cumulative impacts with respect to geology, soils or seismicity. **(Less than Significant with SCAs)**

Although the entire Bay Area is situated within a seismically-active region with a wide range of geologic and soil conditions, these conditions can vary widely within a short distance, making the cumulative context for potential impacts resulting from exposing people and structures to related risks one that is more localized or even site-specific. Potential cumulative geology and seismic impacts do not extend far beyond a project's boundaries, since such geological impacts are typically confined to discrete spatial locations and do not combine to create an extensive cumulative impact. The exception to this generalization would occur where a large geologic feature (e.g., fault zone, massive landslide) might affect an extensive area, or where the development effects from the adoption and development under the proposed Project could affect the geology of an off-site location. These circumstances are not likely to occur in the Project Area as there are no large landslide features or fault zones. Development under the proposed Project could combine with structural damage from other past, present, and reasonably foreseeable future projects. These include but are not limited to projects listed in the Major Projects List in Chapter 4.0 of this EIR.

The cumulative analysis considers the adoption and development of the proposed Project combined with other past, present, existing, pending and reasonably foreseeable projects. Many existing buildings

(i.e., past projects) in the surrounding area have been built in accordance with building code requirements for geotechnical and seismic safety in effect at the time of building construction. Present, pending and future projects within the Project Area are subject to these enhanced requirements and result in reduced geologic and seismic hazards. As present and future projects replace aging infrastructure and older structures with new, more rigorously regulated projects, the potential for cumulative seismic risks is incrementally reduced over time.

The SCAs discussed above, including soil reports and geotechnical studies, and compliance with the CBC would reduce the potential for cumulative geologic and seismic effects from development within Project Area and surrounding area. Therefore, adoption and development of the proposed Project together with the impact of past, present, existing, pending and reasonably foreseeable future development would not result in any significant cumulative geologic and seismic impacts. Moreover, given that the adoption and development under the proposed Project would likely remove older structures and replace them with new structures, or rehabilitate older structures that must comply with current and future building code requirements for geologic and seismic safety, the development under the proposed Project would not make any considerable contribution to any potential cumulative impact, because it would improve geologic and seismic safety in the Project Area. The impact would be **less than significant**. No further mitigation is required.

4.6

Greenhouse Gas Emissions and Climate Change

Over the past several years there has been a significant advancement in scientific understanding of the relationship between certain air emissions and trend-line changes in climatic conditions that have national and even global ramifications. New information about greenhouse gas (GHG) emissions and their potential effects on global climate change, as well as new public environmental policy has emerged and become more formalized. Guidance has been issued by the state regarding requirements for environmental review under CEQA for proposed projects related to GHG emissions and global climate change, and the Bay Area Air Quality Management District (BAAQMD) has recently adopted CEQA *Thresholds of Significance* and issued new *CEQA Guidelines* which include thresholds of significance for levels of GHG emissions attributable to projects and plans.[1] This chapter provides a thorough analysis of the greenhouse gas (GHG) implications of the Coliseum Area Specific Plan in Alameda County. In light of the recent legislative action on this topic, the City has developed its own thresholds of significance for GHG emissions. The analysis contained in this EIR relies upon the City's thresholds, which are based upon recommendations and suggested methodologies for lead agencies as contained in the BAAQMD 2011 CEQA Guidelines and the adopted BAAQMD Thresholds of Significance. This GHG analysis quantifies the GHG emissions of the Coliseum District and Plan Buildout and compares them to GHG standards and thresholds established by air quality agencies.

Existing Conditions

There is a general scientific consensus that global climate change is occurring, caused in whole or in part by increased emissions of GHGs that keep the Earth's surface warm by trapping heat in the Earth's atmosphere, in much the same way as glass traps heat in a greenhouse. The Earth's climate is changing because human activities, primarily the combustion of fossil fuels, are altering the chemical composition of the atmosphere through the buildup of GHGs. GHGs allow the sun's radiation to penetrate the atmosphere and warm the Earth's surface, but do not let the infrared radiation emitted from the Earth escape back into outer space. As a result, global temperatures are predicted to increase over the century. In particular, if climate change remains unabated, surface temperatures in California are expected to increase anywhere from 4.1 to 8.6 degrees Fahrenheit by the end of the century.[2] Not only would higher temperatures directly affect the health of individuals through greater risk of dehydration, heat stroke, and respiratory distress, the higher temperatures may increase ozone formation, thereby

[1] BAAQMD, California Environmental Quality Act Air Quality Guidelines, May 2012.

[2] California Climate Change Center, 2012. Our Changing Climate 2012, Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. Available at: http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf. Accessed August 19, 2013.

worsening air quality. Rising temperatures could also reduce the snowpack, which would increase the risk of water shortages. Higher temperatures, along with reduced water supplies, could reduce the quantity and quality of agricultural products. In addition, there could be an increase in wildfires and a shift in distribution of natural vegetation throughout the State. Global warming could also increase sea levels and coastal storms resulting in greater risk of flooding.[3]

Emissions of carbon dioxide (CO_2) are the leading cause of global warming, with other pollutants such as methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride also contributing. The magnitude of the impact on global warming differs among the GHGs. For example, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride have a greater "global warming potential" than CO_2. In other words, these other GHGs have a greater contribution to global warming than CO_2 on a per mass basis. The effect each GHG has on climate change is measured as a combination of the volume of its emissions, and its global warming potential (GWP), and is expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalents (CO_2e). CO_2 has the greatest impact on global warming because of the relatively large quantities of CO_2 emitted into the atmosphere. For example, BAAQMD estimates that CO_2 made up about 92 percent of the total emission of the six gases listed above in 2007 in the Bay Area.[4]

Globally, CO_2 concentrations, which ranged from 265 parts per million (ppm) to 280ppm over the last 10,000 years, only began rising in the last 200 years to current levels of 395 ppm, a 41percent increase.[5]

In 2011, the United States emitted about 6.7 billion tons of CO_2e, or about 21 tons/year/person. Of five major sectors nationwide – residential and commercial, industrial, transportation and agriculture – electricity accounts for the largest fraction of GHG emissions (33%) and transportation accounts for the second highest fraction of GHG emissions (28%). Over 70% of our electricity comes from burning fossil fuels, and over 90% of the fuel used for transportation is petroleum based.[6,7]According to the Fifth U.S. Climate Action Report,[8] total U.S. emissions increased 17 percent from 1990 through 2007, with fossil fuel combustion the largest source of CO_2e emissions. However, the recent 2014 U.S. Climate Action

[3] California Energy Commission (CEC), 2006, Our Changing Climate Assessing the Risks to California: The 2006 Summary Report from the California Climate Change Center.

[4] Bay Area Air Quality Management District. 2010. Source Inventory of Bay Area Greenhouse Gas Emissions. Updated. Available at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007_2_10.ashx. Accessed: August 19, 2013.

[5] Atmospheric CO2. 2013. Atmospheric CO2 for November 2013, Preliminary monthly average as of December 10, 2013. Mauna Loa Observatory: NOAA: ERSL. Available at: http://co2now.org/ Accessed: January 7, 2014.

[6] http://www.epa.gov/climatechange/ghgemissions/gases.html, accessed January 2014

[7] http://www.epa.gov/climatechange/ghgemissions/sources.html, accessed January 2014

[8] Office of Global Change, US Department of State. Fifth U.S Action Climate Report to the UN Framework Convention on Climate Change, 2010. Available at: http://www.state.gov/documents/organization/140636.pdf. Accessed: August 19, 2013.

Report,[9] states that during 2009-2011, average U.S. GHG emissions fell to the lowest level for any three-year period.

Since 1994-1996, due in part to stringent, long-term standards for vehicle GHG emissions and efficiency, increased building and appliance efficiency, and doubling electricity generation from wind and solar. The fifth U.S. Climate Action Report forecast total CO_2 emissions to increase by 4 percent from 2010 to 2020, while the 2014 Climate Action Report predicts a 14-20% decline from 2005 levels.

California's gross emissions of greenhouse gases decreased by 6 percent from 478.4 million tonnes of CO2e in 2001 to 448.1 million in 2011, with a maximum of 489.2 million tonnes in 2004.[10] California's GHG emissions represent about 6.7 percent of the U.S. emissions. This large number is due primarily to the sheer size of California compared to other states. By contrast, California has the fourth lowest per capita GHG emission rates in the country, due to the success of its energy-efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.[11] Another factor that has reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states.

The 2000 – 2011 California GHG Inventory found that transportation is the source of approximately 37.6 percent of the State's GHG emissions, followed by industrial sources at 23 percent and electricity generation (both in-state and out-of-state) at 19 percent. Agriculture and forestry is the source of approximately 7 percent and Commercial and Residential emissions comprise 5 percent and 7percent of the inventory, respectively.[12,13]

In the Bay Area, GHG emissions are generated primarily from combustion of gasoline, diesel fuel, and natural gas used in mobile sources and by energy-generation activities. In particular, BAAQMD has estimated that transportation, industrial/commercial, and power plants made up 36 percent, 36 percent, and 16 percent, respectively, of the total GHG emissions in the Bay Area. Sixteen percent of these emissions originate in Alameda County.[14]

The City of Oakland, in partnership with the Local Governments for Sustainability (ICLEI), has developed a GHG emissions inventory estimating citywide GHG emissions for the year 2005 at approximately 3

[9] Office of Global Change, US Department of State. 2014 U.S Climate Action Report to the UN Framework Convention on Climate Change, 2014. Available at: http://www.state.gov/documents/organization/219038.pdf. Accessed: January 21, 2014.

[10] ARB. California Greenhouse Gas Emissions for 2000 to 2011 – Trends of Emissions and Other Indicators. http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_trends_00-11_2013-10-02.pdf. Accessed January 2014.

[11] California Energy Commission (CEC), Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004 - Final Staff Report, publication # CEC-600-2006-013-SF, Sacramento, CA, December 22, 2006; and January 23, 2007 update to that report.

[12] ARB. Greenhouse Gas Inventory Data – 2000 to 2011. http://www.arb.ca.gov/cc/inventory/data/data.htm

[13] ARB. California Greenhouse Gas Inventory for 2000-2011 — by Sector and Activity. http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_sector_00-11_sum_2013-08-01.pdf Accessed January 2014.

[14] BAAQMD. Source Inventory of Bay Area Greenhouse Gas Emissions. February 2010. http://www.mtc.ca.gov/planning/climate/Bay_Area_Greenhouse_Gas_Emissions_2-10.pdf Accessed January 2014.

million metric tons of CO_2e.[15] This citywide GHG emissions inventory reflects all the energy used and waste produced within the Oakland city limits. When emissions from highway transportation are considered in this total, approximately 58 percent of Oakland's GHG emissions are associated with the transportation sector. Natural gas consumption represents approximately 22 percent of Oakland's GHG emissions, while electricity use and decomposition represent 16 percent and 4 percent of Oakland's GHG emissions, respectively.

The construction and operation of developments, such as the Coliseum District and Plan buildout, cause GHG emissions. Operational phase GHG emissions result from energy use associated with heating, lighting and powering buildings (typically through natural gas and electricity consumption in Oakland), pumping and processing water, as well as fuel used for transportation and decomposition of waste associated with building occupants. New development can also create GHG emissions in its construction and demolition phases including the use of fuels in construction equipment, creation and decomposition of building materials, vegetation clearing, natural gas usage, electrical usage (since electricity generation by conventional means is a major contributor GHG emissions, discussed below), and transportation.

However, it is important to acknowledge that new development does not necessarily create entirely new GHG emissions, since most of the persons who will visit or occupy new development will come from other locations where they were already causing such GHG emissions. Further, as discussed above, it has not been demonstrated that new GHG emissions caused by a local development project can affect global climate change, or that a project's net increase in GHG emissions, if any, when coupled with other activities in the region, would be cumulatively considerable. Consequently, while the study area for climate change and the analysis of greenhouse gas emissions is potentially broad, the study area is limited by the CEQA Guidelines Section 15064(d), which directs lead agencies to consider an "indirect physical change" only if that change is a reasonably foreseeable impact which may be caused by the project.

Potential Effects of Human Activity on Global Climate Change

Globally, climate change has the potential to impact numerous environmental resources through anticipated, though uncertain, impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming is taking place, including substantial loss of ice in the Arctic.[16]

However, the understanding of GHG emissions, particulate matter, and aerosols on global climate trends remains uncertain. In addition to uncertainties about the extent to which human activity rather than solar or volcanic activity is responsible for increasing warming, there is also evidence that some human activity has cooling, rather than warming, effects, as discussed in detail in numerous publications

[15] City of Oakland Resolution Approving Preliminary Planning Targets for Development of the Draft Oakland Energy and Climate Action Plan. June 23, 2009

[16] International Panel on Climate Change (IPCC). Climate Change 2007: Working Group I: The Physical Science Basis, http://www.ipcc.ch/publications_and_data/ar4/wg1/en/spmsspm-projections-of.html, accessed December 2, 2013.

by the International Panel on Climate Change (IPCC), namely "Climate Change 2001, The Scientific Basis."[17,18]

Acknowledging uncertainties regarding the rate at which anthropogenic GHG emissions would continue to increase (based upon various factors under human control, such as future population growth and the locations of that growth; the amount, type, and locations of economic development; the amount, type, and locations of technological advancement; adoption of alternative energy sources; legislative and public initiatives to curb emissions; and public awareness and acceptance of methods for reducing emissions), and the impact of such emissions on climate change, the IPCC devised a set of six emission scenarios which utilize various assumptions about the rates of economic development, population growth, and technological advancement over the course of the next century.[19] These emission scenarios are paired with various climate sensitivity models to attempt to account for the range of uncertainties which affect climate change projections. The wide range of temperature, precipitation, and similar projections yielded by these scenarios and models reveal the magnitude of uncertainty presently limiting climate scientists' ability to project long-range climate change (as previously discussed).

The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects, according to the IPCC.[20]

- Snow cover is projected to contract, with permafrost areas sustaining thawing;
- Sea ice is projected to shrink in both the Arctic and Antarctic;
- Hot extremes, heat waves, and heavy precipitation events are likely to increase in frequency;
- Future tropical cyclones (typhoons and hurricanes) will likely become more intense;
- Non-tropical storm tracks are projected to move poleward, with consequent changes in wind, precipitation, and temperature patterns. Increases in the amount of precipitation are very likely in high-latitudes, while decreases are likely in most subtropical regions; and
- Warming is expected to be greatest over land and at most high northern latitudes, and least over the Southern Ocean and parts of the North Atlantic Ocean.

Potential secondary effects from global warming include global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

Potential Effects of Climate Change on State of California

According to the California Air Resources Board (CARB), some of the potential impacts in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more

[17] The IPCC was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to assess scientific, technical and socio-economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation

[18] IPCC Third Assessment Report. Climate Change 2001, The Scientific Basis. 2001.

[19] IPCC, 2000, op. cit.

[20] Ibid.

high ozone days, more large forest fires, and more drought years.[21] Several recent studies have attempted to explore the possible negative consequences that climate change, left unchecked, could have in California. These reports acknowledge that climate scientists' understanding of the complex global climate system, and the interplay of the various internal and external factors that affect climate change, remains too limited to yield scientifically valid conclusions on such a localized scale. Substantial work has been done at the international and national level to evaluate climatic impacts, but far less information is available on regional and local impacts. In addition, projecting regional impacts of climate change and variability relies on large-scale scenarios of changing climate parameters, using information that is typically at too general a scale to make accurate regional assessments.[22]

Below is a summary of some of the potential effects reported in an array of studies that could be experienced in California as a result of global warming and climate change.

Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. For other pollutants, the effects of climate change and/or weather are less well studied, and even less well understood.[23] If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State.[24]

Water Supply

Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. For example, models that predict drier conditions (i.e., parallel climate model (PCM)) suggest decreased reservoir inflows and storage and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions (i.e., HadCM2) project increased reservoir inflows and storage, and increased river flows.[25]

A July 2006 technical report prepared by the California Department of Water Resources (DWR) addresses the State Water Project (SWP), the Central Valley Project, and the Sacramento-San Joaquin

[21] California Air Resources Board (CARB), 2006c. Public Workshop to Discuss Establishing the 1990 Emissions Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions, Sacramento, CA. December 1.

[22] Kiparsky, M. and P.H. Gleick, 2003. *Climate Change and California Water Resources: A Survey and Summary of the Literature*. Oakland, CA: Pacific Institute for Studies in Development. July 2003

[23] US EPA, 2007, op. cit.

[24] California Climate Change Center (CCCC), 2006. Our Changing Climate: Assessing the Risks to California, CEC500-2006-077, Sacramento, CA. July.

[25] Brekke, L.D., et al, 2004. —Climate Change Impacts Uncertainty for Water Resources in the San Joaquin River Basin, California. Journal of the American Water Resources Association. 40(2): 149–164. Malden, MA, Blackwell Synergy for AWRA.

Delta. Although the report projects that, "climate change will likely have a significant effect on California's future water resources … and future water demand," it also reports that, "there is much uncertainty about future water demand, especially those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain. This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood".[26] DWR adds that "it is unlikely that this level of uncertainty will diminish significantly in the foreseeable future."[27] Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows.[28]

Water purveyors, such as the East Bay Municipal Utilities District (EBMUD), are required by state law to prepare Urban Water Management Plans (UWMPs) (discussed below, under Regulatory Context for Greenhouse Gas Emissions and Climate Change) that consider climatic variations and corresponding impacts on long-term water supplies.[29] DWR has published a 2005 SWP Delivery Reliability Report, which presents information from computer simulations of the SWP operations based on historical data over a 73-year period (1922–1994). The DWR notes that the results of those model studies "represent the best available assessment of the delivery capability of the SWP." In addition, the DWR is continuing to update its studies and analysis of water supplies. EBMUD's most recent UWMP (required every five years per the California Water Code), was adopted June 28, 2011 and incorporates this information from DWR.[30] Information from the UWMP can be incorporated into Water Supply Assessments (WSAs) and Water Verifications prepared for certain development projects in accordance with Cal. Water Code Section 10910, et. seq. and Cal. Government Code Section 66473.7, et. seq.

Hydrology

As discussed above, climate change could potentially affect the following: the amount of snowfall, rainfall and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming through two main processes -- expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could also jeopardize California's water supply. In particular, saltwater intrusion would threaten the quality and reliability of the state's major fresh water supply that is pumped from the southern portion of the Sacramento/San Joaquin River Delta. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

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[26] California Department of Water Resources (DWR), 2006. Progress on Incorporating Climate Change into Management of California Water Resources, Sacramento, CA. July.

[27] Ibid.

[28] Kiparsky 2003, op. cit; DWR, 2005, op. cit.; Cayan, D., et al, 2006. Scenarios of Climate Change in California: An Overview (White Paper, CEC-500-2005-203-SF), Sacramento, CA. February.

[29] California Water Code, Section 10631(c).

[30] EBMUD. Urban Water Management Plan 2010. http://www.ebmud.com/sites/default/files/pdfs/UWMP-2010-2011-07-21-web-small.pdf. Accessed January 2014.

Ecosystems and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. In 2004, the Pew Center on Global Climate Change released a report examining the possible impacts of climate change on ecosystems and wildlife.[31] The report outlines four major ways in which it is thought that climate change could affect plants and animals: (1) timing of ecological events, (2) geographic range, (3) species composition within communities, and (4) ecosystem processes such as carbon cycling and storage.

Regulatory Setting

Global climate change is addressed through the efforts of various federal, state, regional and local government agencies as well as national and international scientific and governmental conventions and programs. These agencies work jointly, as well as individually to understand and regulate the effects of GHG emissions and resulting climate change through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies, conventions and programs focused on global climate change are discussed below.

Federal

Kyoto Protocol

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC) (signed on March 21, 1994). The Kyoto Protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated 5 percent from 1990 levels during the first commitment period of 2008–2012. It should be noted that although the United States is a signatory to the Kyoto Protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments.

Copenhagen Summit

The 2009 United Nations Climate Change Conference (Copenhagen Summit) was held in Denmark in December 2009. The conference included the 15 Conference of the Parties to the United Nations Framework Convention on Climate Change, and the fifth meeting of the Parties to the Kyoto Protocol. A framework for climate change mitigation beyond 2012 was to be agreed there. The Copenhagen Accord was drafted by the US, China, India, Brazil, and South Africa on December 18, and judged to be a "meaningful agreement" by the United Stated government. It was "taken note of" but not "adopted" in a debate of all the participating countries the next day, and it was not passed unanimously. The document recognized that climate change is one of the greatest challenges of the present day and that actions should be taken to keep any temperature increases to below 2 degrees Celsius. The document is not legally binding and does not contain any legally binding commitments for reducing CO_2 emissions.

[31] Parmesan, C. and H. Galbraith, *Observed Impacts of Global Climate Change in the U.S.*, Arlington, VA: Pew Center on Global Climate Change, November 2004.

Climate Change Technology Program

The United States has opted for a voluntary and incentive-based approach toward emissions reductions in lieu of the Kyoto Protocol's mandatory framework. The Climate Change Technology Program (CCTP) is a multi-agency research and development coordination effort (which is led by the Secretaries of Energy and Commerce) that is charged with carrying out the President's National Climate Change Technology Initiative.[32]

Federal Clean Air Act

The federal Clean Air Act (CAA), enacted in 1970 and amended in 1977 and 1990, establishes the framework for federal air pollution control. The CAA does not identify greenhouse gases as air pollutants subject to regulation. However, in April 2007, in *Massachusetts* v. *U.S. Environmental Protection Agency,*[33] the U.S. Supreme Court held that carbon dioxide is an "air pollutant" as defined under the federal Clean Air Act, and that the U.S. Environmental Protection Agency (USEPA) must follow the pertinent Clean Air Act criteria in determining whether to regulate emissions of CO_2 and other GHGs. In response to that decision, and as directed by the Court, USEPA announced initiation of an effort to determine whether to propose an "endangerment finding" with regard to the impacts of GHG emissions from new motor vehicles. In December 2009, USEPA issued an endangerment finding that GHGs from new motor vehicles contribute to air pollution and may endanger public health or welfare. The endangerment finding classified six GHGs as pollutants that threaten health: carbon dioxide, methane, nitrous oxide, hydro-fluorocarbons, perfluorocarbons and sulfur hexafluoride. USEPA found that the combined emissions of GHGs from new motor vehicles contribute to GHG pollution, which threatens public health and welfare.

During the George W. Bush Administration, USEPA rejected California's application for a Clean Air Act preemption waiver needed by California to implement the state's GHG standards for new motor vehicles. In January 2009, President Obama directed EPA to re-assess whether it should grant California's waiver application. On February 12, 2009, EPA published a Federal Register notice proposing to approve the California waiver. In March 2009, EPA held public hearings on the matter. On June 30, 2009, EPA granted California's waiver request.

On June 25, 2013, President Obama announced his Climate Action Plan (CAP) consisting of a set of executive actions. This plan will cut carbon pollution, prepare for the impacts of climate change, and lead international efforts to address climate change.[34,35] Also on June 25, 2013, President Obama issued a Presidential Memorandum directing EPA to issue a new draft regulation for standards of performance

[32] Climate Change Technology Program (CCTP), About the U.S. Climate Change Technology Program (web page), Washington, D.C., last updated July 2008, http://www.climatetechnology.gov/about/index.htm, December 2, 2013.

[33] U.S. Supreme Court, Massachusetts et.al. v. EPA et.al (No. 05-1120, 415F 3d 50), April 2, 2007

[34] Fact Sheet: President Obama's Climate Action Plan. http://www.whitehouse.gov/the-press-office/2013/06/25/fact-sheet-president-obama-s-climate-action-plan Accessed December 2, 2013.

[35] Climate Change and President Obama's Action Plan. 2013. Available at: http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf. Accessed December 2, 2013.

for new power plants and a second draft regulation for existing power plants.[36] On September 18th, the House Energy and Commerce Committee held a hearing to discuss the CAP. On September 20th, EPA issued a new draft rule for new power plants.[37]

State

Assembly Bill (AB) 1493

Assembly Bill (AB) 1493, enacted in 2002, directs the California Air Resources Board (CARB) to develop and implement regulations that achieve the "maximum feasible reduction" of GHG emissions from passenger vehicles, light-duty trucks, and other noncommercial vehicles. Pursuant to AB 1493, in 2004 CARB approved regulations limiting the amount of GHGs released from motor vehicles. On March 6, 2008, EPA published a Federal Register notice of its decision denying California's request for Clean Air Act preemption waiver needed to allow California to implement its state motor vehicle GHG emission standards. California sued USEPA seeking reversal of that decision. As noted above, on February 12, 2009, EPA published a Federal Register notice proposing to approve the California waiver, and in March 2009, it held public hearings on the matter. On June 30, 2009, EPA granted California's waiver request.

Executive Order S-3-05

On June 1, 2005, Governor Schwarzenegger signed Executive Order S-3-05 which established the following GHG emission reduction targets:

- By 2010, reduce GHG emissions to 2000 emission levels,
- By 2020, reduce GHG emissions to 1990 emission levels, and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

A Climate Action Team (CAT) was formed to implement GHG emission reduction programs and to report on progress made to meet the emission reduction targets. CAT is led by the Secretary of California Environmental Protection Agency and consists of representatives from several state agencies. A progress report on meeting the targets is issued every two years starting with the report issued in March 2006. The most recent report was issued in 2010.[38]

California Assembly Bill 32 (AB 32)

In 2006, the California Global Warming Solutions Act of 2006 (AB 32), was signed into law by Governor Schwarzenegger. The law codified the State's goal to reduce statewide GHG emissions to 1990 levels by the year 2020. This reduction is being accomplished using several approaches, including a statewide cap

[36] Presidential Memorandum -- Power Sector Carbon Pollution Standards. http://www.whitehouse.gov/the-press-office/2013/06/25/presidential-memorandum-power-sector-carbon-pollution-standards. Accessed December 2, 2013.

[37] 2012 Proposed Carbon Pollution Standard for New Power Plants. http://www2.epa.gov/carbon-pollution-standards/2013-proposed-carbon-pollution-standard-new-power-plants. Accessed December 2, 2013.

[38] Climate Action Team Reports. 2013. Available at: http://www.climatechange.ca.gov/climate_action_team/reports/index.html#2010. Accessed August 26, 2013.

on GHG emissions. AB 32 directs CARB to develop GHG regulations and establish a mandatory reporting system to track and monitor global warming emissions.

Under AB32, GHGs are defined as carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The regulatory steps established in AB 32 require CARB to adopt early action measures to reduce GHGs; adopt mandatory reporting rules for significant sources of GHGs; and adopt a scoping plan indicating how emission reductions will be achieved via regulations, market mechanisms, and other actions.

AB32 requires that CARB complete a GHG emissions inventory showing California's 1990 GHG emissions. On December 6, 2007, CARB approved this inventory, which showed 1990 emissions of 427 million metric tons of carbon dioxide equivalent (CO_2e). CARB estimated that without any reduction measures (business as usual scenario), 2020 emission levels would be 596 million metric tons of carbon dioxide. Based on these estimates, CARB concluded that California's GHG emissions needed to be reduced by 173 million metric tons of CO_2e (28% reduction) to meet the 427 million metric ton cap.[39]

To help achieve these reductions, CARB evaluated over 100 possible measures. On April 20, 2007, CARB published *Proposed Early Actions to Mitigate Climate Change in California,*[40] including 36 measures for CARB to pursue during the years 2007-2009. These measures are expected to reduce GHGs by 42 million metric tons of carbon dioxide equivalent by 2020, which is about 25 percent of the needed reduction.

AB32 also required that CARB adopt a Scoping Plan by January 1, 2009. That plan shows how emissions reductions will be achieved using regulations, voluntary actions, monetary and nonmonetary incentives, market mechanisms, and other actions. CARB adopted the final Scoping Plan in December 2008. The Scoping Plan contains the main strategies California will implement to reduce CO_2e emissions by 174 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. The Scoping Plan also breaks down the amount of GHG emissions reductions CARB recommends for each emissions sector of the state's GHG inventory. While CARB has identified a GHG reduction target of 15 percent for local governments themselves, it has not yet determined what amount of GHG emissions reductions it recommends from local government land use decisions. However, the Scoping Plan does state that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. CARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors.

In August 2011, the Scoping Plan was re-approved by the ARB Board, and included a Final Supplement to the Scoping Plan Functional Equivalent Document (FED). The FED included an updated business as usual estimate of 507 million metric tons of CO_2e by 2020. Consequently, a 16 percent reduction below the estimated BAU levels would be necessary to return to 1990 levels by 2020.

In early 2013, ARB initiated activities to update the AB32 Scoping Plan. In Spring 2014, ARB expects to bring an updated Scoping Plan document to its Board for consideration.

[39] CARB website, http://www.arb.ca.gov/cc/inventory/1990level/1990level.htm, accessed June 18, 2008.

[40] CalEPA, Air Resources Board (CARB), Proposed Early Actions to Mitigate Climate Change in California. Sacramento, CA, April 20, 2007

Table 4.6-1 shows ARB's recommended actions as detailed in the Scoping Plan. In addition to the measures shown in Table 4.6-1, ARB and other state agencies have developed and implemented a Cap-and-Trade program, mandatory commercial recycling, a renewable energy standard, and SB 375 regional emission targets for passenger vehicles.

Table 4.6-1: Recommended Actions from Scoping Plan

ID #	Sector	Strategy Name
T-1	Transportation	Pavley I and II – Light-Duty Vehicle GHG Standards
T-2	Transportation	LCFS (Discrete Early Action)
T-3	Transportation	Regional Transportation-Related GHG Targets
T-4	Transportation	Vehicle Efficiency Measures
T-5	Transportation	Ship Electrification at Ports (Discrete Early Action)
T-6	Transportation	Goods-movement Efficiency Measures
T-7	Transportation	Heavy Duty Vehicle GHG Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)
T-8	Transportation	Medium and Heavy-Duty Vehicle Hybridization
T-9	Transportation	High Speed Rail
E-1	Electricity and Natural Gas	Increased Utility Energy efficiency programs More stringent Building and Appliance Standards
E-2	Electricity and Natural Gas	Increase Combined Heat and Power Use by 30,000GWh
E-3	Electricity and Natural Gas	Renewables Portfolio Standard
E-4	Electricity and Natural Gas	Million Solar Roofs
CR-1	Electricity and Natural Gas	Energy Efficiency
CR-2	Electricity and Natural Gas	Solar Water Heating
GB-1	Green Buildings	Green Buildings
W-1	Water	Water Use Efficiency
W-2	Water	Water Recycling
W-3	Water	Water System Energy Efficiency
W-4	Water	Reuse Urban Runoff
W-5	Water	Increase Renewable Energy Production
W-6	Water	Public Goods Charge (Water)
I-1	Industry	Energy Efficiency and Co-benefits Audits for Large Industrial Sources
I-2	Industry	Oil and Gas Extraction GHG Emission Reduction
I-3	Industry	GHG Leak Reduction from Oil and Gas Transmission

Table 4.6-1: Recommended Actions from Scoping Plan

ID #	Sector	Strategy Name
I-4	Industry	Refinery Flare Recovery Process Improvements
I-5	Industry	Removal of CH_4 Exemption from Existing Refinery Regulations
RW-1	Recycling and Waste Management	Landfill CH_4 Control (Discrete Early Action)
RW-2	Recycling and Waste Management	Additional Reductions in Landfill CH_4 – Capture Improvements
RW-3	Recycling and Waste Management	High Recycling/Zero Waste
F-1	Forestry	Sustainable Forest Target
H-1	High GWP Gases	Motor Vehicle Air Conditioning Systems (Discrete Early Action)
H-2	High GWP Gases	SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)
H-3	High GWP Gases	Reduction in Perfluorocarbons in Semiconductor Manufacturing (Discrete Early Action)
H-4	High GWP Gases	Limit High GWP Use in Consumer Products (Discrete Early Action, Adopted June 2008)
H-5	High GWP Gases	High GWP Reductions from Mobile Sources
H-6	High GWP Gases	High GWP Reductions from Stationary Sources
H-7	High GWP Gases	Mitigation Fee on High GWP Gases
A-1	Agriculture	CH_4 Capture at Large Dairies

Source: California Air Resources Board, 2008. Climate Change Proposed Scoping Plan, a Framework for Change. December. Available: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf

Senate Bill (SB) 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. This bill required the Governor's Office of Planning and Research (OPR) to prepare and develop guidelines for the feasible mitigation of GHG emissions. The California Natural Resources Agency adopted these amendments on December 30, 2009. They took effect on March 18, 2010, after review by the Office of Administrative Law and filing with the Secretary of State for inclusion in the California Code or Regulations.

2008 OPR Technical Advisory

On June 19, 2008, OPR published a technical advisory on CEQA and climate change. The advisory provided OPR's perspective on the emerging role of CEQA in addressing climate change and GHG emissions, while recognizing that approaches and methodologies for calculating GHG emissions and addressing environmental impacts through CEQA review are rapidly evolving. The advisory recognized that OPR will develop, and the Resources Agency will adopt, amendments to the CEQA Guidelines pursuant to SB 97. In the interim, the technical advisory "offers informal guidance regarding the steps lead agencies should take to address climate change in their CEQA documents."‖

The technical advisory pointed out that neither CEQA nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for performing an impact analysis. The advisory stated, "This is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable." OPR recommended that, "the global nature of climate change warrants investigation of a statewide threshold of significance for GHG emissions." Until such a standard is established, OPR advises that each lead agency should develop its own approach to performing an analysis for projects that generate GHG emissions. OPR set out the following process for evaluating GHG emissions.

- First, agencies should determine whether GHG emissions may be generated by a proposed project, and if so, quantify or estimate the emissions by type or source. Calculation, modeling, or estimation of GHG emissions should include the emissions associated with vehicular traffic, energy consumption, water usage, and construction activities.

- Lead agencies should then assess whether the emissions are —cumulatively considerable‖ even though a project's GHG emissions may be individually limited. OPR states, —Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment.‖ Individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice.

- Finally, if the lead agency determines emissions are a cumulatively considerable contribution to a significant cumulative impact, the lead agency must investigate and implement ways to mitigate the emissions. OPR states, —Mitigation measures will vary with the type of project being contemplated, but may include alternative project designs or locations that conserve energy and water, measures that reduce vehicle miles traveled (VMT) by fossil-fueled vehicles, measures that contribute to established regional or programmatic mitigation strategies, and measures that sequester carbon to offset the emissions from the project.‖ OPR concludes that, —A lead agency is not responsible for wholly eliminating all GHG emissions from a project; the CEQA standard is to mitigate to a level that is —less than significant.‖ The technical advisory includes a list of mitigation measures that can be applied on a project-by-project basis.

2008 California Air Pollution Control Officers Association (CAPCOA) White Paper

In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a white paper‖ on evaluating and addressing GHGs under CEQA. This resource guide was prepared to support local governments as they develop their programs and policies around climate change issues. The paper was not a guidance document. It was not intended to dictate or direct how any agency chooses to address GHG emissions. Rather, it was intended to provide a common platform of information about key elements of CEQA as they pertain to GHG, including an analysis of different approaches to setting significance thresholds.

The paper noted that for a variety of reasons local agencies may decide not to have a CEQA threshold. Local agencies may also decide to assess projects on a case-by-case basis when the projects come forward. The paper also discussed a range of GHG emission thresholds that could be used. The range of thresholds discussed includes a GHG threshold of zero and several non-zero thresholds. Non-zero thresholds include percentage reductions for new projects that would allow the state to meet its goals for GHG emissions reductions by 2020 and perhaps 2050. These would be determined by a comparison of new emissions versus business as usual emissions and the reductions required would be approximately 30 percent to achieve 2020 goals and 90 percent (effectively immediately) to achieve the more aggressive 2050 goals. These goals could be varied to apply differently to new projects, by economic sector, or by region in the state.

2009/2010 Amendments to the CEQA Guidelines

In January 2009, OPR released preliminary proposed amendments to the CEQA Guidelines regarding GHG emissions. No significance threshold was included in the draft and the guidelines afforded the customary deference provided to lead agencies in their analysis and methodologies. The introductory preface to the amendments recommended that CARB set state-wide thresholds of significance. OPR emphasized the necessity of having a consistent threshold available to analyze projects, and the analyses should be performed based on the best available information. The proposed revisions included a new section specifically addressing the significance of GHG emissions, building upon OPR's 2008 technical advisory. Like the advisory, the proposed Guidelines section calls for quantification of GHG emissions. The proposed section states that the significance of GHG impacts should include consideration of the extent to which the project would result in the following:

- help or hinder compliance with AB 32 goals;
- increase energy use, especially energy use generated by fossil fuel combustion;
- improve energy efficiency; and
- result in emissions that would exceed any applicable significance threshold.

In April 2009, OPR forwarded the draft revisions to the California Natural Resources Agency for review and proposed adoption. On July 3, 2009, the California Natural Resources Agency began the formal rulemaking process for adopting the CEQA Guidelines. As directed by SB 97, the Natural Resources Agency adopted Amendments to the CEQA Guidelines for GHG emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010. Among the changes included in these recent CEQA Guidelines amendments are guidance for determining the significance of impacts from GHG emissions (CEQA Guidelines Section 15064.4). These guidelines indicate that "The determination of the significance of GHG emissions calls for a careful judgment by the lead agency … A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project."‖ A lead agency shall have discretion to determine, in the context of a particular project, whether to use a model or other methodology to quantify GHG emissions resulting from a project, and which model or methodology to use, or whether to rely on a qualitative analysis or performance based standard.

These Guidelines also indicate that a lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:

- "The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional or local plan for the reduction or mitigation of GHG emissions."‖

In determining thresholds of significance for GHG emissions, Section 15064.7 indicates that,

> *"Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant. Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence. When adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."*‖

Finally, in considering mitigation measures related to GHG emissions, Section 15126.4 indicates that, "lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of GHG emissions. Measures to mitigate the significant effects of GHG emissions may include, among others:

- Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;
- Reductions in emissions resulting from a project through implementation of project features, project design, or other measures;
- Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions; and
- Measures that sequester GHGs;
- In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of GHG emissions, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions."‖

California Senate Bill 375 (SB 375)

The transportation sector contributes approximately 40 percent of the GHG emissions in California, with automobiles and light trucks alone contributing almost 30 percent. While substantial reductions to GHG emissions from automobiles and light trucks can be achieved through new vehicle technology and by the increased use of low carbon fuel, the legislature determined that these reductions will not be enough to

achieve the state's AB 32 GHG emission reduction goals and that it will therefore be necessary, "to achieve additional significant GHG reductions from changed land use patterns and improved transportation." To implement this concept, on September 30, 2008, Governor Schwarzenegger signed into law SB 375. SB 375 melds regional transportation and local land use planning in an effort to achieve GHG emission reductions from automobiles and light trucks by using transportation and land use planning to implement "smart growth" principles, thereby reducing vehicle trips and the resulting GHG emissions.

SB 375 creates a new regional planning mechanism—referred to as the sustainable communities strategy (SCS)—which promotes high density, transit-oriented development, and creates incentives for specifically defined, high-density development projects. The bill requires multiple State and regional agencies to work cooperatively to establish regional GHG emission reduction targets for the years 2020 and 2035. CARB approved the final targets on February 15, 2011.[41] The primary means by which the GHG reduction targets are to be met is through adoption of an SCS as an element of the regional transportation plans adopted by California's 18 metropolitan planning organizations. Each SCS must analyze existing land use conditions; forecast expected population and employment growth; identify sufficient areas to accommodate the affected region's housing needs; and identify a transportation network to service the transportation needs of the region (California Government Code, Section 65080(b)(2)). Most importantly, the SCS must "set forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, will reduce GHG emissions from automobile and light trucks to achieve, if there is a feasible way to do so, the GHG emission reduction targets approved by" the ARB (California Government Code, Section 65080(b)(2)(B)(vii)).

On July 18, 2013, the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) adopted Plan Bay Area, an integrated transportation and land use-use strategy through 2040 that marks the nine-county Bay Area region's first long-range plan to meet the requirements of SB 375.

California Senate Bill 1078

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the State's Renewables Energy Standard to 33 percent renewable power by 2020. In April 2011, Governor Jerry Brown signed SB 2X, that created a legislative mandate codifying the 33 percent Renewables Portfolio Standard into law.

Electricity service is provided within the Bay Area by Pacific Gas and Electric (PG&E). Approximately 19 percent of PG&E's 2012 energy mix came from renewable energy sources that included wind, solar, biomass, small hydropower and geothermal sources.[42]

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[41] California Air Resources Board. 2011. Executive Order No. G-11-024, Relating to Adoption of Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375. Available at: http://www.arb.ca.gov/cc/sb375/executive_order_g11024.pdf. Accessed August 26, 2013.

[42] CPUC. 2013. Current Renewable Procurement Status, Pacific Gas and Electric. Available at: http://www.cpuc.ca.gov/PUC/energy/Renewables/index.htm. Accessed August 19, 2013.

Advanced Clean Cars Program

On January 27, 2012, the ARB adopted a package of new emissions rules for cars and light trucks through 2025. The Advanced Clean Cars (ACC) program combines the control of smog-causing pollutants and greenhouse gas emissions into a single coordinated package of requirements for model years 2017 through 2025. The new rules are intended to reduce emissions from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles and hydrogen fuel cell cars. The package is also designed to ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California. The package includes four separate, related components: Greenhouse gas standard for cars and light trucks for model years 2017-2025, Reducing Smog-Forming Emissions (referred to together as the Low Emission Vehicle (LEV) III Regulations), Zero Emissions Vehicle (ZEV) Regulation, and the Clean Fuels Outlet program. While regulatory activity on the Clean Fuels Outlet program was suspended in December 2012, the remaining regulations comprising the ACC program were adopted by the Board in 2012.[43, 44, 45]

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the public agency entrusted with regulating stationary sources of air pollution in the nine counties that surround San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma counties. BAAQMD attains and maintains air quality conditions in the San Francisco Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The BAAQMD developed guidelines to assist local jurisdictions and lead agencies in complying with CEQA.. The guidelines were updated in June 2010 from the prior 1999 version to include the thresholds of significance adopted by the District in June 2010. On March 5, 2012 the Alameda County Superior Court issued a judgment finding that the Air District had failed to comply with CEQA when it adopted the Thresholds, as the adoption of the thresholds was a project under CEQA.[46,47] Consequently, while the District acknowledges that agencies may rely on the Guidelines for assistance in calculating emissions, and determining and assessing mitigation measures, the District no longer recommends that the thresholds be used as a measure of a project's significant air quality impacts. The Court of Appeal reversed the Superior Court's decision in August 2013, determining the adoption of the CEQA Thresholds was not a "Project" under CEQA. However, the District has not yet

[43] Clean Fuels Outlet Regulation Activity page. http://www.arb.ca.gov/fuels/altfuels/cf-outlets/cf-outlets.htm. Accessed January, 2014.

[44] Low-Emissions Vehicles and GHG 2012 Regulatory Activity page. http://www.arb.ca.gov/regact/2012/leviiighg2012/leviiighg2012.htm. Accessed January 2014.

[45] Zero Emission Vehicles 2012 Regulatory Activity page. http://www.arb.ca.gov/regact/2012/zev2012/zev2012.htm. Accessed January 2014.

[46] BAAQMD CEQA Guidelines website. http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx. Accessed October 2013.

[47] The California Building Industry Association (CBIA) filed a lawsuit challenging BAAQMD's 2010 CEQA thresholds. In a judgment issued by the Alameda Superior Court on March 5, 2012, the Court found that BAAQMD failed to comply with CEQA when it adopted the Thresholds. On August 13, 2013, California's First District Court of Appeal issued a decision laying the groundwork for reinstatement of the BAAQMD's air quality thresholds, including their GHG thresholds.

revised its policy in response to the Court of Appeal decision. The most recent version of the District's CEQA guidelines is dated May 2012.[48]

Bay Area Air Quality Management District Climate Protection Program

The BAAQMD established a climate protection program in 2005 to reduce pollutants that contribute to global climate change and affect air quality in the SFBAAB. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy all of which assist in reducing emissions of GHG and in reducing air pollutants that affect the health of residents.[49] BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

The most recently adopted air quality plan for the Bay Area is the 2010 Clean Air Plan (CAP), which is an update to the BAAQMD's 2005 Ozone Strategy to comply with State air quality planning requirements. In addition, the 2010 CAP serves as a multi-pollutant air quality plan to protect public health and the climate. The 2010 CAP control strategy includes revised, updated, and new measures in the three traditional control measure categories: stationary sources measures, mobile source measures, and transportation control measures. In addition, the 2010 CAP identifies two new categories of control measures, including land use and local impact measures and energy and climate measures.[50] The Energy and Climate Measures (ECMs) include:

- ECM 1: Energy Efficiency
- ECM 2: Renewable Energy
- ECM 3: Urban Heat Island Mitigation and
- ECM 4: Shade Tree Planting

San Francisco Bay Conservation and Development Commission

Adapting to Rising Tides

The San Francisco Bay Conservation and Development Commission (BCDC) completed an analysis of potential sea level rise in the San Francisco Bay based on projections of a 16 inch sea level rise by mid-century (2050) and approximately 55 inch sea level rise by the end of the century (2100).[51]
BCDC, the National Oceanic and Atmospheric Administration Coastal Services Center, along with local, regional, state and federal agencies and organizations, nonprofit and private associations engaged in a

[48] Bay Area Air Quality Management District, 2012. California Environmental Quality Act Air Quality Guidelines. May. Available at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en. Accessed October 28, 2013

[49] BAAQMD Climate Protection Program. http://www.baaqmd.gov/?sc_itemid=83004271-3753-4519-8B09-D85F3FC7AE70. Accessed December 2, 2013.

[50] BAAQMD. Bay Area 2010 Clean Air Plan. Adopted September 2010.

[51] Bay Conservation Development Commission. *2011 Living with a Rising Bay: Vulnerability and Adaption in the San Francisco Bay and on its Shoreline*. Available at: http://bcdc.ca.gov/BPA/LivingWithRisingBay.pdf

collaborative planning process called the Adapting to Rising Tides (ART Project).[52] The ART Project involved a subregion of the San Francisco Bay, specifically, a portion of the Alameda County shoreline, from Emeryville to Union City. The purpose of the ART Project is to provide a potential methodology on how to assess impacts as well as guidance on developing adaption strategies associated with sea level rise. The Coliseum Specific Plan is located within the ART Project area. Sea level rise is discussed in more detail in the Hydrology and Water Quality chapter of this EIR.

City of Oakland

Oakland Energy and Climate Action Plan

In July 2009 the Oakland City Council approved a preliminary planning GHG reduction target equivalent to 36% below 2005 GHG emissions by 2020 and directed staff to develop a draft Oakland Energy and Climate Action Plan. Based on Oakland's baseline 2005 GHG inventory, totaling approximately 3 million metric tons of CO_2e emissions, and current forecasts of business-as-usual emissions growth, reducing GHG emissions by the equivalent of 36% below 2005 levels by 2020 will require taking actions that cumulatively result in approximately 1.1 million metric tons of CO_2e reductions. A draft Oakland Energy and Climate Action Plan (ECAP) was released in early 2010. The final Energy and Climate Action Plan was adopted by the City Council on December 4, 2012.[53] The adopted ECAP outlines a ten-year plan including more than 150 actions that will enable Oakland to achieve the desired 36% reduction in GHG emissions. Oakland's 36% GHG reduction goal is applied to each of several categories of GHG emission sources. The target level of GHG reduction can be accomplished by 2020 by achieving the category specific reductions shown in **Table 4.6-2**. The ECAP includes a Three Year Priority Implementation Plan, with a prioritized subset of 61 actions recommended for immediate implementation. These priority actions will capitalize on near term opportunities and lay the groundwork for long-term progress. In November of 2012, the City released an ECAP Implementation Report which identified 15 completed actions.

[52] *See ART website: http://www.adaptingtorisingtides.org*

[53] City of Oakland. Energy and Climate Action Plan. December 4, 2012. http://www2.oaklandnet.com/oakca1/groups/pwa/documents/report/oak039056.pdf. Accessed October 28. 2013.

TABLE 4.6-2: ECAP CATEGORY-SPECIFIC 2020 REDUCTION TARGETS

Annual Target	Details
20% reduction in vehicle miles traveled	Residents, workers and visitors meet daily needs through transit, walking, and bicycling
24 million gallons of gasoline and diesel saved	Less driving and more fuel efficient vehicles
32% reduction in electricity consumption	Conservation and energy efficiency in homes and businesses
14% reduction in natural gas consumption	Retrofits to Oakland's homes and commercial buildings and aggressive conservation
62 million kWh and 2.7 million therms of renewable energy production	Local solar panels and other renewable energy technologies
375,000 tons of waste diverted away from local landfills	Waste reduction, reuse, recycling, and composting

Source: City of Oakland Energy and Climate Action Plan. December 4, 2012. p. 16 http://www2.oaklandnet.com/oakca1/groups/pwa/documents/report/oak039056.pdf. Accessed January 2014

City of Oakland General Plan

The City of Oakland General Plan contains numerous policies that address issues related to GHG emissions and climate change.[54] Specifically, policies within the Land Use and Transportation Element (LUTE) support transit-oriented development, pedestrian and bicycle oriented planning, and use of public transit. Open Space, Conservation, and Recreation Element (OSCAR) includes policies which encourage the provision of open space, which increases vegetation area (trees, grass, landscaping, etc.) to effect cooler climate, reduce excessive solar gain, and absorb CO_2; policies that encourage stormwater management, which relates to the maintenance of floodplains and infrastructure to accommodate potential increased storms and flooding; and policies that encourage energy efficiency and use of alternative energy sources, which directly address reducing GHG emissions. The Historic Preservation Element (HPE) encourages the reuse of existing buildings and material, which may reduce landfill, incineration, and transportation and use of new materials and retain embodied building energy, all of which lead to reductions in GHGs.

Other City of Oakland Programs and Policies

The City of Oakland has supported and adopted a number of programs and policies designed to reduce GHG emissions and continue Oakland's progress toward becoming a model sustainable city. Programs and policies of relevance to new residential development include:

[54] City of Oakland General Plan. 1998. http://www2.oaklandnet.com/Government/o/PBN/OurServices/GeneralPlan/DOWD008821. Accessed October 28, 2013.

- Sustainable Oakland Program – Oakland's sustainability efforts are coordinated through the Sustainable Oakland program, a product of the Oakland Sustainability Community Development Initiative created in 1998 (ordinance 74678 C.M.S.)

- Green Building – The City of Oakland has implemented Green Building principles in City buildings through the following programs: Civic Green Building Ordinance (Ordinance No. 12658 C.M.S., 2005), requiring, for certain large civic projects, techniques that minimize the environmental and health impacts of the built environment through energy, water and material efficiencies and improved indoor air quality, while also reducing the waste associated with construction, maintenance and remodeling over the life of the building; Civic Bay Friendly Landscaping Ordinance (Ordinance No. 12959 C.M.S.,2009), requiring all City and public-private funded projects to comply with the Bay Friendly Landscaping Guidelines to increase water conservation and soil health; Green Building Guidelines (Resolution No. 79871, 2006) which provides guidelines to Alameda County residents and developers regarding construction and remodeling; and a Green Building Ordinance for Private Development (Ordinance 13040 C.M.S., 2010) requiring green building measures be included for new construction, additions or alterations and large landscape projects, as well as the demolition of historic resources.

- Downtown Housing – Over the last ten years, hundreds of units of new housing have been built in downtown Oakland, enabling thousands of new residents to access the regional transportation networks of BART and AC Transit. This effort is consistent with Smart Growth principles.

- Waste Reduction and Recycling – The City of Oakland has implemented a residential recycling program increasing the collection of yard trimmings and food waste. This program has increased total yard trimming collections by 46 percent compared to 2004, and recycling tonnage by 37 percent. The City also adopted a *Construction and Demolition Recycling* program, for which the City passed a resolution in July 2000 (Ordinance 12253. OMC Chapter 15.34), requiring certain nonresidential or apartment house projects to recycle 100 percent of all asphalt & concrete (A/C) materials and 65 percent of all other materials.

- Polystyrene Foam Ban Ordinance - In June 2006 the Oakland City Council passed the Green Food Service Ware Ordinance (Ordinance 14727, effective as of January 1, 2007), which prohibits the use of polystyrene foam disposable food service ware and requires, when cost neutral, the use of biodegradable or compostable disposable food service ware by food vendors and City facilities.

- Zero Waste Resolution – In March 2006 the Oakland City Council adopted a Zero Waste Goal by 2020 Resolution (Resolution 79774 C.M.S.), and commissioned the creation of a Zero Waste Strategic Plan to achieve the goal.

- Stormwater Management – On October 14, 2009, the Regional Water Quality Control Board, San Francisco Bay Region, issued a municipal stormwater permit under the National Pollutant Discharge Elimination System (NPDES) permit program to the Alameda Countywide Clean Water Program (ACCWP). The purpose of the permit is to reduce the discharge of pollutants in stormwater to the maximum extent practicable and to effectively prohibit non-stormwater discharges into municipal storm drain systems and watercourses. The City of Oakland, as a member of the ACCWP, is a co-permittee under the ACCWP's permit and is, therefore, subject to the permit requirements. Provision C.3 of the NPDES permit is the section of the permit containing stormwater pollution management requirements for new development and redevelopment projects. Among other things, Provision C.3 requires that certain new development and redevelopment projects incorporate post-

construction stormwater pollution management measures, including stormwater treatment measures, stormwater site design measures, and source control measures, to reduce stormwater pollution after the construction of the project. These requirements are in addition to standard stormwater-related best management practices (BMPs) required during construction.

- Community Gardens and Farmer's Markets – Community Garden locations include Arroyo Viejo, Bella Vista, Bushrod, Golden Gate, Lakeside Horticultural Center, Marston Campbell, Temescal, Tassaforanga and Verdese Carter. Weekly Farmer's Market locations include the Jack London Square, Old Oakland, Grand Lake, Mandela, and Temescal districts. Both efforts promote and facilitate the principal of growing and purchasing food locally, which effects reductions in truck and vehicle use and GHG emissions.

Standard Conditions of Approval

The City's regulations are used in conjunction with the City's Standard Conditions of Approval (SCA). The Standard Conditions of Approval were initially and formally adopted by the City Council on November 3, 2008 (Ordinance No. 12899 C.M.S.), pursuant to Public Resources Code section 21083.3 and CEQA Guidelines section 15183 (and now section 15183.3). In July 2011, the City issued Supplemental Standard Conditions of Approval including a new SCA for Greenhouse Gas Reduction.[55]

The City's Standard Conditions of Approval (SCAs) that directly pertain to greenhouse gases and that apply to the adoption and development under the Specific Plan are listed below. The SCAs are incorporated and required of all development under the Specific Plan.

The SCA below applies under any of the following scenarios:

- Scenario A: Projects which (a) involve a land use development (i.e., a project that does not require a permit from the Bay Area Air Quality Management District (BAAQMD) to operate), (b) exceed the greenhouse gas (GHG) emissions screening criteria contained in the BAAQMD CEQA Guidelines,[56] AND (c) after a GHG analysis is prepared would produce total GHG emissions of more than 1,100 metric tons of CO_2e annually AND more than 4.6 metric tons of CO_2e per service population annually (with "service population" defined as the total number of employees and residents of the project).

- Scenario B: Projects which (a) involve a land use development, (b) exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines,[57] (c) after a GHG analysis is prepared

[55] City of Oakland. Supplemental Standard Conditions of Approval. July 28, 2011.

[56] For residential development projects, refer to the City's 2007-2014 Housing Element EIR screening criteria. The Housing Element EIR's analysis showed that residential development projects of less than 172 units would not result in a significant climate change impact and, therefore, no project-specific GHG analysis is required for such projects. Under an alternative approach in the Housing Element EIR, the analysis found that ANY residential development project (including those containing 172 or more units) would not result in a significant climate change impact and that no project-specific GHG analysis would be required. For residential projects containing 172 or more units, please consult with City Planning staff and the City Attorney's office on the appropriate GHG review. For nonresidential development projects and mixed-use development projects, the nonresidential component of the project must be compared to the BAAQMD screening criteria and the applicable threshold if the screening criteria are exceeded, independently from any residential component the project.

[57] See preceding footnote.

would exceed at least one of the BAAQMD Thresholds of Significance (more than 1,100 metric tons of CO_2e annually OR more than 4.6 metric tons of CO_2e per service population annually), AND (d) are considered to be "Very Large Projects."[58]

- Scenario C: Projects which (a) involve a stationary source of GHG (i.e., a project that requires a permit from BAAQMD to operate) AND (b) after a GHG analysis is prepared would produce total GHG emissions of more than 10,000 metric tons of CO_2e annually.

SCA GHG-1: Greenhouse Gas (GHG) Reduction Plan. *Prior to issuance of a construction-related permit and ongoing as specified.* The project applicant shall retain a qualified air quality consultant to develop a Greenhouse Gas (GHG) Reduction Plan for City review and approval. The applicant shall implement the approved GHG Reduction Plan.

The goal of the GHG Reduction Plan shall be to increase energy efficiency and reduce GHG emissions to below *[INCLUDE IF SCENARIO A OR B] at least one of the Bay Area Quality Management District's (BAAQMD's) CEQA Thresholds of Significance (1,100 metric tons of CO_2e per year or 4.6 metric tons of CO_2e per year per service population) [INCLUDE IF SCENARIO C] the Bay Area Quality Management District's (BAAQMD's) CEQA Thresholds of Significance (10,000 metric tons of CO_2e per year) [INCLUDE IF SCENARIO B] AND to reduce GHG emissions by 36 percent below the project's "adjusted" baseline GHG emissions (as explained below)* to help achieve the City's goal of reducing GHG emissions. The GHG Reduction Plan shall include, at a minimum, (a) a detailed GHG emissions inventory for the project under a "business-as-usual" scenario with no consideration of project design features, or other energy efficiencies, (b) an "adjusted" baseline GHG emissions inventory for the project, taking into consideration energy efficiencies included as part of the project (including the City's Standard Conditions of Approval, proposed mitigation measures, project design features, and other City requirements), (c) a comprehensive set of quantified additional GHG reduction measures available to further reduce GHG emissions beyond the adjusted GHG emissions, and (d) requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. If the project is to be constructed in phases, the GHG Reduction Plan shall provide GHG emission scenarios by phase.

Specifically**,** the applicant/sponsor shall adhere to the following:

a. ***GHG Reduction Measures Program.*** Prepare and submit to the City Planning Director or his/her designee for review and approval a GHG Reduction Plan that specifies and quantifies GHG reduction measures that the project will implement by phase.

   i. Potential GHG reduction measures to be considered include, but are not be limited to, measures recommended in BAAQMD's latest CEQA Air Quality Guidelines, the

[58] A "Very Large Project" is defined as any of the following:

(A) Residential development of more than 500 dwelling units;

(B) Shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space;

(C) Commercial office building employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space;

(D) Hotel/motel development of more than 500 rooms;

(E) Industrial, manufacturing, processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or encompassing more than 650,000 square feet of floor area; or

(F) Any combination of smaller versions of the above that when combined result in equivalent annual GHG emissions as the above.

California Air Resources Board Scoping Plan (December 2008, as may be revised), the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures Document (August 2010, as may be revised), the California Attorney General's website, and Reference Guides on Leadership in Energy and Environmental Design (LEED) published by the U.S. Green Building Council.

ii. The proposed GHG reduction measures must be reviewed and approved by the City Planning Director or his/her designee. The types of allowable GHG reduction measures include the following (listed in order of City preference): (1) physical design features; (2) operational features; and (3) the payment of fees to fund GHG-reducing programs (i.e., the purchase of "offset carbon credits," pursuant to item "b" below).

iii. The allowable locations of the GHG reduction measures include the following (listed in order of City preference): (1) the project site; (2) off-site within the City of Oakland; (3) off-site within the San Francisco Bay Area Air Basin; (4) off-site within the State of California; then (5) elsewhere in the United States.

b. ***Offset Carbon Credits Guidelines.*** For GHG reduction measures involving the purchase of offset carbon credits, evidence of the payment/purchase shall be submitted to the City Planning Director or his/her designee for review and approval prior to completion of the project (or prior to completion of the project phase, if the project includes more one phase).

i. As with preferred locations for the implementation of all GHG reductions measures, the preference for offset carbon credit purchases include those that can be achieved as follows (listed in order of City preference): (1) within the City of Oakland; (2) within the San Francisco Bay Area Air Basin; (3) within the State of California; then (4) elsewhere in the United States. The cost of offset carbon credit purchases shall be based on current market value at the time purchased and shall be based on the Project's operational emissions estimated in the GHG Reduction Plan or subsequent approved emissions inventory, which may result in emissions that are higher or lower than those estimated in the GHG Reduction Plan.

c. ***Plan Implementation and Documentation.*** For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be included on the drawings submitted for construction-related permits. For operational GHG reduction measures to be incorporated into the project, the measures shall be implemented on an indefinite and ongoing basis beginning at the time of project completion (or at the completion of the project phase for phased projects).

i. For physical GHG reduction measures to be incorporated into off-site projects, the measures shall be included on drawings and submitted to the City Planning Director or his/her designee for review and approval and then installed prior to completion of the subject project (or prior to completion of the project phase for phased projects). For operational GHG reduction measures to be incorporated into off-site projects, the measures shall be implemented on an indefinite and ongoing basis beginning at the time of completion of the subject project (or at the completion of the project phase for phased projects).

d. ***Compliance, Monitoring and Reporting.*** Upon City review and approval of the GHG Reduction Plan program by phase, the applicant/sponsor shall satisfy the following requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. The GHG Reduction Plan requires regular periodic evaluation over the life of the Project (generally estimated to be at least 40 years) to determine how the Plan is achieving required GHG emissions reductions over time, as well as the efficacy of the specific additional GHG reduction measures identified in the Plan.

i. Implementation of the GHG reduction measures and related requirements shall be ensured through the project applicant/sponsor's compliance with Conditions of Approval adopted for the project. Generally, starting two years after the City issues the first Certificate of Occupancy for the project, the project applicant/sponsor shall prepare each year of the useful life of the project an Annual GHG Emissions Reduction Report (Annual Report), subject to the City Planning Director or his/her designee for review and approval. The Annual Report shall be submitted to an independent reviewer of the City Planning Director's or his/her designee's choosing, to be paid for by the project applicant/sponsor (see Funding, below), within two months of the anniversary of the Certificate of Occupancy.

ii. The Annual Report shall summarize the project's implementation of GHG reduction measures over the preceding year, intended upcoming changes, compliance with the conditions of the Plan, and include a brief summary of the previous year's Annual Report results (starting the second year). The Annual Report shall include a comparison of annual project emissions to the baseline emissions reported in the GHG Plan.

iii. The GHG Reduction Plan shall be considered fully attained when project emissions are less than either applicable numeric BAAQMD CEQA Thresholds as confirmed by the City Planning Director or his/her designee through an established monitoring program. Monitoring and reporting activities will continue at the City's discretion, as discussed below.

e. ***Funding.*** Within two months after the Certificate of Occupancy, the project applicant/sponsor shall fund an escrow-type account or endowment fund to be used exclusively for preparation of Annual Reports and review and evaluation by the City Planning Director or his/her designee, or its selected peer reviewers. The escrow-type account shall be initially funded by the project applicant/sponsor in an amount determined by the City Planning Director or his/her designee and shall be replenished by the project applicant/sponsor so that the amount does not fall below an amount determined by the City Planning Director or his/her designee. The mechanism of this account shall be mutually agreed upon by the project applicant/sponsor and the City Planning Director or his/her designee, including the ability of the City to access the funds if the project applicant/sponsor is not complying with the GHG Reduction Plan requirements, and/or to reimburse the City for its monitoring and enforcement costs.

f. ***Corrective Procedure.*** If the third Annual Report, or any report thereafter, indicates that, in spite of the implementation of the GHG Reduction Plan, the project is not achieving the GHG reduction goal, the project applicant/sponsor shall prepare a report for City review and approval, which proposes additional or revised GHG measures to better achieve the GHG emissions reduction goals, including without limitation, a discussion on the feasibility and effectiveness of the menu of other additional measures (Corrective GHG Action Plan). The project applicant/sponsor shall then implement the approved Corrective GHG Action Plan.

i. If, one year after the Corrective GHG Action Plan is implemented, the required GHG emissions reduction target is still not being achieved, or if the project applicant/owner fails to submit a report at the times described above, or if the reports do not meet City requirements outlined above, the City Planning Director or his/her designee may, in addition to its other remedies, (a) assess the project applicant/sponsor a financial penalty based upon actual percentage reduction in GHG emissions as compared to the percent reduction in GHG emissions established in the GHG Reduction Plan; or (b) refer the matter to the City Planning Commission for scheduling of a compliance hearing to determine whether the project's approvals should be revoked, altered or additional conditions of approval imposed.

ii. The penalty as described in (a) above shall be determined by the City Planning Director or his/her designee and be commensurate with the percentage GHG

emissions reduction not achieved (compared to the applicable numeric significance thresholds) or required percentage reduction from the "adjusted" baseline.

iii. In determining whether a financial penalty or other remedy is appropriate, the City shall not impose a penalty if the project applicant/sponsor has made a good faith effort to comply with the GHG Reduction Plan.

iv. The City would only have the ability to impose a monetary penalty after a reasonable cure period and in accordance with the enforcement process outlined in Planning Code Chapter 17.152. If a financial penalty is imposed, such penalty sums shall be used by the City solely toward the implementation of the GHG Reduction Plan.

g. ***Timeline Discretion and Summary.*** The City Planning Director or his/her designee shall have the discretion to reasonably modify the timing of reporting, with reasonable notice and opportunity to comment by the applicant, to coincide with other related monitoring and reporting required for the project.

i. *Fund Escrow-type Account for City Review*: Certificate of Occupancy plus 2 months

ii. *Submit Baseline Inventory of "Actual Adjusted Emissions"*: Certificate of Occupancy plus 1 year

iii. *Submit Annual Report #1*: Certificate of Occupancy plus 2 years

iv. *Submit Corrective GHG Action Plan* (if needed): Certificate of Occupancy plus 4 years (based on findings of Annual Report #3)

v. *Post Attainment Annual Reports*: Minimum every 3 years and at the City Planning Director's or his/her designee's reasonable discretion

Impacts, Standard Conditions of Approval and Mitigation Measures

Significance Criteria

The City's thresholds of significance pertaining to greenhouse gas / global climate change are generally based on the thresholds adopted by the Bay Area Air Quality Management District (BAAQMD) in May 2011. In March 2012 the Alameda County Superior Court issued a judgment finding that BAAQMD had failed to comply with CEQA when the thresholds were adopted. The court did not determine whether the thresholds were valid on the merits, but found that the adoption of the thresholds was a project under CEQA. In August 2013 the California Court of Appeal reversed the Superior Court's decision. In view of the court's order, pursuant to CEQA, lead agencies must apply appropriate thresholds based on substantial evidence in the record. The City's thresholds rely upon the technical and scientific basis for BAAQMD's 2011 thresholds which was not rejected by the court. Use of the City's thresholds is consistent with and authorized by CEQA Guidelines section 15064. The City's thresholds have not been challenged and remain in effect. The methodology for assessing greenhouse gas / global climate change impacts (e.g., calculating emissions) should be based on the latest version of BAAQMD's CEQA Guidelines and guidelines published by other regional, state, and federal regulatory agencies.

The proposed Specific Plan would have a significant impact on the environment if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, specifically:

For the Coliseum District (Project-level impacts):[59]

a) For a project involving a stationary source,[60] produce total emissions of more than 10,000 metric tons of CO_2e annually.

b) For a project involving a land use development,[61] produce total emissions of more than 1,100 metric tons of CO2e annually **AND** more than 4.6 metric tons of CO_2e per service population[62] annually.[63, 64, 65]

For the Plan Buildout (Plan-level impacts):

a) Produce emissions of more than 6.6 metric tons of CO_2e per service population annually. [66]

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[59] Greenhouse gas impacts are, by their nature, cumulative impacts because one project by itself cannot cause global climate change. Criteria 1a and 1b pertain to a project's contribution to cumulative impacts but are labeled "Project-Level Impacts" to be consistent with the terminology used by BAAQMD. For projects that involve both a stationary source and a land use development, calculate each component separately and compare to the applicable threshold.

[60] Stationary sources are projects that require a BAAQMD permit to operate.

[61] Land use developments are projects that do not require a BAAQMD permit to operate.

[62] The service population includes both the residents and the employees of the project.

[63] The project's impact would be considered significant if the emissions exceed BOTH the 1,100 metric tons threshold and the 4.6 metric tons threshold. Accordingly, the impact would be considered less than significant if the project's emissions are below EITHER of these thresholds.

[64] Refer to the City's Standard Conditions of Approval for conditions related GHG emissions and requirements to reduce project GHG emissions even for projects with emissions below either of these thresholds. Also refer to the screening criteria contained in the BAAQMD CEQA Guidelines. For residential development projects, refer to the City's 2007-2014 Housing Element EIR screening criteria. The Housing Element EIR's analysis showed that residential development projects of less than 172 units would not result in a significant climate change impact and, therefore, no project-specific GHG analysis is required for such projects. Under an alternative approach in the Housing Element EIR, the analysis found that ANY residential development project (including those containing 172 or more units) would not result in a significant climate change impact and that no project-specific GHG analysis would be required. For nonresidential development projects and mixed-use development projects, the nonresidential component of the project must be compared to the BAAQMD screening criteria, and the applicable threshold if the screening criteria are exceeded, independently from any residential component of the project.

[65] The Project's expected greenhouse gas emissions during construction were annualized over a period of 40 years and then added to the expected emissions during operation for comparison to the threshold, consistent with the City's CEQA Thresholds. A 40-year period is used because 40 years is considered the average life expectancy of a building before it is remodeled with considerations for increased energy efficiency. The thresholds are based on the BAAQMD thresholds. The BAAQMD thresholds were originally developed for project operation impacts only. Therefore, combining both the construction emissions and operation emissions for comparison to the threshold represents a conservative analysis of potential greenhouse gas impacts.

[66] The BAAQMD CEQA Guidelines state that the plan-level threshold should only be applied to general plans. For other types of plans, such as redevelopment plans and Specific Plans, the Guidelines state that the project-level thresholds should be used. The Guidelines do not state whether the plan-level threshold or the project-level thresholds should be used for individual general plan elements (as compared to revisions to the entire general plan). Therefore, the environmental analysis for individual general plan elements should use both the

2. Fundamentally conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing greenhouse gas emissions.

Approach to Analysis

Construction and operation of the Coliseum District would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during operation. Overall, the following activities associated with development of the Coliseum District and Plan Buildout could contribute to the generation of GHG emissions:

- Traffic - Transportation associated with adoption and development under the Specific Plan would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips.
- Building Energy Consumption - Natural gas use results in the emissions of two GHGs, methane and carbon dioxide. Methane is released prior to initiation of combustion of the natural gas (as before a flame on a stove is sparked), and from the small amount of methane that is uncombusted in a natural gas flame. Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel.
- Water Use and Wastewater Treatment – Energy is expended in the conveyance of water throughout the state. California's water conveyance system is energy intensive.[67] In addition, energy is also used for treatment and transportation of used water.
- Solid Waste – GHG emissions are created by the disposal of solid waste, depending on waste disposal method. Landfills emit anthropogenic methane and carbon dioxide from the anaerobic breakdown of material. The amount of CH4 and CO2 emitted depends on characteristics of the landfill and the gas capture system, of one is used.
- Area Sources (Hearth and landscaping) – Natural gas is combusted in equipment such as heaters, cooking appliances, fireplaces or boilers, as well as landscape maintenance equipment, combust natural gas. Natural gas combustion creates GHGs such as carbon dioxide, methane and nitrous oxide.
- Removal of Vegetation - The net removal of vegetation for construction results in a loss of the carbon sequestration in plants. However, planting of additional vegetation would result in additional carbon sequestration and lower the carbon footprint of a project. (See City's Standard Conditions of Approval regarding Landscape Requirements and Tree Replacement, below). In the case of an urban infill project, additional landscaping may result in a net decrease in vegetation related GHG emissions.
- Construction Activities - Construction equipment typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as carbon dioxide, methane and nitrous oxide. Furthermore, methane is emitted during the fueling of heavy equipment.

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plan-level threshold/methodology and the project-level thresholds/methodology unless directed otherwise by City staff.

[67] California Energy Commission. California's Water- Energy relationship, CA, 2005 http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF , accessed January 30, 2013

While development of the Coliseum District, as well as total development pursuant to Plan Buildout would generate GHG emissions from the activities described above, the City of Oakland's ongoing implementation of its Sustainability Community Development Initiative (which includes an array of programs and measures, discussed above, under Regulatory Setting) would collectively reduce the levels of GHG emissions and contributions to global climate change attributable to activities throughout Oakland. However, because the details of how such programs and measures will be applied are not currently known, no reductions in emissions from these programs and measures are included in this analysis.

GHG emissions from construction and operation at the Coliseum District as well as operation under Plan Buildout were calculated using the latest version of the California Emissions Estimator Model (CalEEMod™). CalEEMod™ is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The mobile source emission factors used in the model (EMFAC2011 and the 2011 Off-Road Inventory Model) include the Pavley standards and Low Carbon Fuel standards. Further, the model identifies mitigation measures to reduce GHG emissions along with calculating the benefits achieved from measures chosen by the user. The model was developed in collaboration with the air districts of California. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions.[68] The use of CalEEMod™ is consistent with guidance issued by BAAQMD on July 31, 2013, indicating that BAAQMD will no longer support the use of Urbemis.[69]

Net Change in Emissions

Development at the Coliseum District and under Plan Buildout involves removal of existing sources of GHG emissions. In such cases, the BAAQMD CEQA Guidelines recommend subtracting the existing emissions levels from the emissions levels estimated for the new proposed land use.[70] Consequently, GHG emissions for the Coliseum District were analyzed for three scenarios: Existing emissions ("2013 Baseline"), future emissions in the absence of the project ("2035 Baseline"), and future emissions with project development ("2035 Project"). The 2035 Baseline scenario is presented for informational purposes only and includes GHG emissions projected from current land uses in the Coliseum District area as they would occur in 2035 (without future development as envisioned under the Specific Plan). These projected 2035 GHG emissions are based on a continuation of existing land uses, vehicle trips, and VMTs. Over time, regulatory changes at the state level (Pavley Standards, Low Carbon Fuel Standard, Advanced Clean Car program, Renewables Portfolio Standard (RPS), and new building codes) are projected to go into effect, resulting in substantial improvements primarily to vehicle and energy emissions of GHGs. To quantify the effects of these regulatory changes, the 2035 Baseline emissions analysis re-calculates GHG emissions from these existing sources assuming regulatory-based GHG emission improvements, but does not assume any increase in land use or any new land use-based GHG emissions within the Planning Areas.

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68 California Emissions Estimator Model (CalEEMod), accessed on August 27, 2013. http://www.caleemod.com/.

69 BAAQMD, accessed on August 27, 2013. CEQA Guidelines. http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx

70 Op Cit. BAAQMD 2012 p. 4-1.

The 2035 Project scenario evaluates operational emissions for buildout of the land uses as envisioned under the Specific Plan, by year 2035. These emissions estimates rely on mobile source activity forecasts developed from the Transportation chapter of this EIR, and the area source direct and indirect emissions estimated by CalEEMod™ in year 2035. The modeling assumes implementation of existing state regulations regarding the chemical content of vehicle fuels (Pavley Standards, Low Carbon Fuel Standard, and Advanced Clean Car program).[71] These already adopted and enforceable regulations will result in measurably significant reduction of the GHG emissions potential of transportation sources. Future development at the Coliseum District will also adhere to the City's Green Building Ordinance, which, in conjunction with the California Green Building Standards Code (CALGreen Code) will have the effect of reducing emissions associated with energy use and water use beyond the energy consumption levels used in the model (2013 Title 24 compliance). Because these existing state regulations are currently in effect and enforceable at the state level, the CalEEMod™ emissions model incorporates the GHG emission reductions that on-going implementation of these regulations will achieve.

GHG emissions for the Plan Buildout area were analyzed for two scenarios: Existing emissions ("2013 Plan Baseline") and future emissions taking into account Plan Buildout ("2035 Plan Buildout"). Similar to the 2035 Project scenario, the 2035 Plan Buildout scenario evaluates operational emissions for buildout of the land uses as envisioned under the full Project Area build out, by year 2035. Mobile source activity forecasts from the Transportation chapter of this EIR and area source direct and indirect emissions estimated by CalEEMod™ in year 2035 were used. The analysis includes implementation of the Pavley Standards, Low Carbon Fuel Standards, Advanced Clean Car program, RPS, the City's Green Building Ordinance, and the requirements of the CALGreen Code.

GHG Effects on Flooding and Sea-level Rise

Since a portion of the Project Area is located in an area that may be subject to coastal or other flooding resulting from climate change, the potential effects of climate change (e.g., effects of flooding due to sea level rise) on the Specific Plan are discussed in Chapter 4.8, *Hydrology and Water Quality*, of this EIR.

Stationary Source Emissions

Coliseum District

Impact GHG-1: New development within the Coliseum District would not generate greenhouse gas emissions specifically from stationary sources, either directly or indirectly, that would produce total emissions of more than 10,000 metric tons of CO_2e annually. (**LTS**)

New development within the Coliseum District includes a variety of land use types including sports venues, residential, office, R&D, and retail uses. While there are no specific stationary sources of air pollution proposed, California building code requires back-up diesel generators for all buildings in excess

[71] The Advanced Clean Car program is not yet incorporated in CalEEModTM. Mobile source emission reductions of 2% for the ACC were applied during post-processing.

of 70 feet in height for elevator safety.[72] Buildings in excess of this height would be accommodated in portions of the Coliseum District. In addition, due to the back-up electricity requirement for sports venues and for R&D uses, new emergency generators are expected at the Coliseum District. Emissions associated with emergency generators were calculated based on standard fuel usage data for a conservatively representative engine and are shown in **Table 4.6-3**.

Table 4.6–3 GHG Emissions – Stationary Sources

Quantity	Pollutant	Emission Factors[2]	Units	Emissions (kg/yr)	Global Warming Potential	CO_2e Emissions[3] (MT CO_2e/yr)	GHG Emissions (MT CO_2e/year)
	CO_2	3,836	lbs/hr	86,999	1	87.0	
1	CH_4	3.00E-03	kg/MMBtu	3.4	21	0.1	87.3
	N_2O	6.00E-04	kg/MMBtu	0.7	310	0.2	
GHG Stationary Source Threshold:							10,000
Maximum number of generators to remain below the threshold:							114

Notes:

1. Calculated based on the fuel use at 100% load with fan (173.5 gallons per hour), using the low heat value of diesel (18,390 BTU per pound) and density of diesel (7.001 pounds per gallon), all from a 2 Megawatt (MW) Tier 2 Caterpillar diesel engine manufacturer data. Caterpillar engines were used as representative of typical emergency generator engines. The calculation assumes 50 hours per year of operation.
2. CO_2 emission factors are based on engine manufacturer data. Emission factors for methane and nitrous oxide are from 40 CFR Part 98.38 Table C-2.
3. CO_2, CH_4 and N_2O emissions calculated by multiplying the emission factors by the annual fuel usage. Global warming potential values from 40 CFR Part 98 Table A-1 were used to convert emissions to tonnes of carbon dioxide equivalents (CO2e) in accordance with 40 CFR Part 98.2.

GHG = greenhouse gases
BTU = British thermal units
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
hr = hour
kg = kilogram
lbs = pound
MMBtu = million British thermal units
MT = metric tonne (1,000 kilograms)
N_2O = nitrous oxide

Sources: *City of Oakland. 2013. CEQA Thresholds of Significance Guidelines. October. Engine Specification Sheet. Performance Data [SBK01356]. (SBK01356)-Engine (G7G00664)-Generator. March 7, 2013. USEPA. 40 CFR Part 98. Mandatory Greenhouse Gas Reporting.*

[72] California Fire Code. Title 24 Part 9. 604.2.14. http://publicecodes.cyberregs.com/st/ca/st/b300v10/st_ca_st_b300v10_6_par090.htm. Accessed January 2014.

As shown in Table 4.6-3, GHG emissions from one generator would be approximately 87 MT CO_2e per year. Consequently, 114 emergency generators could be installed before exceeding the threshold of 10,000 MT CO_2e per year. The Coliseum District includes approximately 42 buildings in addition to the three sports venues. Conservatively assuming that each of these buildings exceeds 70 feet and that up to 3 emergency generators could be installed at each sports venue, no more than 51 emergency generators would be installed at the Coliseum District. Consequently, the cumulative GHG emissions from emergency generators would not exceed the stationary source threshold of 10,000 MT CO_2e per year. The impact will be less than significant.

Mitigation Measures

None needed.

Operational and Construction Emissions

Coliseum District - Project-Level Analysis

Impact GHG-2A: New development at the Coliseum District would generate greenhouse gas emissions from both direct and indirect sources that would have a significant impact on the environment. Specifically, development at the Coliseum District would involve land use development that would produce total emissions of more than 1,100 metric tons of CO_2e annually and more than the Project-level threshold of 4.6 metric tons of CO_2e per service population annually. Pursuant to City SCAs, individual subsequent development projects within the Coliseum District would be required to prepare project-specific GHG Reduction Plans. Because Coliseum District emission levels are so close to the project-level service population threshold, it is reasonable to assume that reductions for individual projects within the Coliseum District can achieve the 4.6 metric tons per service population threshold. (**LTS with SCA**)

Operational Emissions

GHG emissions produced during operations at the Coliseum District will result from changes in on-road vehicle travel, building energy use, area sources, water use, and solid waste disposal. Incremental (future minus existing) emissions were calculated using CalEEMod™ 2013.2.2. Three scenarios were developed:

- Existing GHG emissions from the Coliseum District area ("Existing No Project, or 2013 Baseline")
- Future 2035 emissions from the Coliseum District area if the project were not developed ("Future No Project, or 2035 Baseline)"
- Future 2035 emissions from the Coliseum District area ("Future Project, or 2035 Project")

CalEEMod™ was used to evaluate the following types of emissions for each scenario:

Area Source Emissions

These are direct emissions from sources that include natural gas combustion for heating, cooking, fireplaces, or boilers, as well as emissions from landscape maintenance equipment. It was assumed that there would be no wood burning fireplaces in project residential units and that 69% of the residential

units would have natural gas fireplaces. Otherwise, CalEEMod™ default emission factors and assumptions were used.

Energy Emissions from Operational Electricity Consumption

These are indirect emissions emitted off-site via nonrenewable, non-nuclear electricity generators as a result of increased electrical demand. Electricity demand is based on both the planned area of different land uses and the energy efficiency measures implemented in the buildings. Project specific land use areas were used. For the 2013 baseline scenarios, CalEEMod™ estimates energy intensity (energy consumption per area of land use) assuming the buildings meet 2008 Title 24 standards. For the 2035 year scenarios, CalEEMod™ was run assuming buildings will achieve 25% energy savings over 2008 Title 24 standards for residential units and 30% energy savings over 2008 Title 24 standards for commercial buildings, consistent with meeting 2013 Title 24 standards.[73]

Mobile Emissions

These are direct emissions from mobile sources including automobiles, trucks, motorcycles, and buses. Vehicle trip rates generated by new development at the Coliseum District related to daily operations by land use were provided by the Project's traffic consultants.[74] These trip generation rates were applied to existing and future land use areas to determine total daily trips for each scenario. In addition, the total trip reduction rates due to internal capture and mode shift were applied to all land use types for the 2035 Project scenario and the 2035 Baseline scenarios. This assumption conservatively over-estimates the incremental change in emissions between the Project scenario and the Baseline scenarios because it overestimates the trip rate reduction for the baseline scenarios and results in lower baseline trip rates. Trip generation rates related to each sports venue for the existing and future year scenarios were provided by the project's traffic consultants. CalEEMod™ default trip lengths were assumed for all scenarios.[75]

Solid Waste Disposal Emissions

These are indirect emissions associated with waste generation. A large percentage of waste from the Coliseum District would be diverted from landfills by waste reduction, recycling, and composting. For this analysis is was assumed that 75% of waste would be diverted from landfills for both 2013 and 2035 scenarios, consistent with the City of Oakland's solid waste diversion resolution.[76] The remainder of the waste not diverted would be disposed of at a landfill. Landfills emit anthropogenic methane from the anaerobic breakdown of material, in addition to biogenic GHG emissions.[77] CalEEMod™ default waste generation rate was used.

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[73] The percentage reduction is available at http://www.energy.ca.gov/releases/2012_releases/2012-05-31_energy_commission_approves_more_efficient_buildings_nr.html

[74] Data provided electronically from Fehr and Peers on October 13, 2013.

[75] All trips were assumed to be primary trips per instruction from Fehr and Peers. In other words, no pass-by or diverted trips were assumed.

[76] Oakland City Council. Resolution 77500. October 29, 2002.

[77] The 2012 BAAQMD Guidelines state that biogenic emissions should not be included in project GHG inventories for comparison to the threshold. All solid waste emissions quantified in CalEEMod™ were conservatively included in the comparison to the threshold in this analysis.

Operational Water Emissions

These indirect emissions are associated with the electricity used to treat and convey water, due to increased water demand from adoption and development under the Specific Plan. Water demand estimates for the currently existing land uses and for the future scenarios were provided by the Project engineers.[78] CalEEMod™ default energy intensity factors were used.

Operational Wastewater (non-biogenic)

These are indirect emissions from wastewater treatment associated with the electricity use in wastewater collection and treatment (excluding the biogenic CO_2 process emissions). Operational wastewater quantities were based on CalEEMod™ default assumptions of the relationship between indoor water use and wastewater quantities. Emissions from waste water treatment are based on CalEEMod™ defaults for the regional distribution of wastewater treatment methods.

Emission sources that are not included in the BAAQMD Guidelines or relevant to new development at the Coliseum District are not included in the adjusted GHG emissions inventory. These sources include emissions generated from permitted stationary source equipment, vegetation sequestration change, fugitive refrigeration emissions, life cycle emissions, agricultural emissions; and off road equipment emissions.

Construction

GHG emissions produced during construction at the Coliseum District will result from fuel combustion by on- and off-road construction vehicles and equipment, including construction worker, vendor trips, and soil hauling trips. The expected construction-related GHG emissions from the Coliseum District were analyzed using CalEEMod™ consistent with the analyses of operational emissions described above. Model assumptions used in the analysis of GHG emissions related to construction activities were the same as those used in the analysis of criteria air pollutant emissions from construction activities, described in in Section 4.2 Air Quality.

Because Project specific construction schedule, equipment list, and vehicle trip data were not available, default data provided by CalEEMod™ were used. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions.

Two demolition scenarios were modeled using CalEEMod:

- demolition only, and
- demolition with on-site crushing of demolished materials.

The first scenario estimates emissions from demolition of the existing Coliseum, Arena, and other on-site structures and paving. The second scenario estimates emissions from the same demolition activities, as well as on-site crushing of concrete from the existing Coliseum and Arena, and of the asphalt paving. CalEEMod defaults were used to calculate the volume of demolished material from existing structures using existing building square footage. The mass of concrete from the existing Coliseum demolition was

[78] Data prepared by BKF Engineers. Sent electronically to ENVIRON on October 23, 2013.

estimated using publically available data for similar projects.[79] The mass of material from paved parking areas was calculated assuming 100 acres of paved area, 3 inches thick.[80] The demolished concrete was assumed to be 95% reusable. The demolished paving was assumed to be 99% reusable. The equipment list for crushing was provided by the project acoustical consultants based on prior experience in similar projects.[81] In both scenarios, demolition was conservatively assumed to begin on January 1, 2014 (it is recognized that demolition did not begin January 2014, but this early start date provides a conservative, "worst-case" assessment in that much of the GHG emissions performance data will improve over time, and the January 2014 analysis date will thus provide the most conservative estimate that will not account for the potential improved performance of engine emissions or resulting emissions over time). The duration of the demolition phase was based on CalEEMod™ defaults. The duration of on-site crushing was based on the estimated mass of material ground and the processing rate of the project specific equipment.[82]

Off-road equipment emissions were evaluated assuming that all off-road equipment use diesel.

For GHG emissions, default CalEEMod™ vehicle trip lengths of 12.4 miles for worker trips, 7.3 miles for vendor trips, and 20 miles for hauling trips were used.

Emissions from all remaining phases of construction include site preparation, grading, building construction, paving, and architectural coating. Project specific land use data was used. CalEEMod™ default off-road equipment list including type, quantity, and schedule were used. Similar to the demolition phase, default CalEEMod™ vehicle trip lengths of 12.4 miles for worker trips, 7.3 miles for vendor trips, and 20 miles for hauling trips were used for criteria air pollutant emissions calculations, while trip length of one mile was used for the risk assessment.

Emissions from the demolition scenarios were added to emissions from other construction phases to determine Project-specific emissions from Coliseum District construction. CalEEMod™ runs are included as **Appendix 4.2A**.

Service Population

The effective service population for the Coliseum District was estimated for each scenario. Existing service population under the 2013 Baseline condition includes employees at existing land uses, including permanent employees at the sports venues in addition to temporary sports venue employees (converted to an annual full time equivalent (FTE) employee count based on the total annual hours of temporary employee work).

- The service population for the Baseline No Project scenario was assumed to be the same in 2035 as in 2013.

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79 New Meadowlands Stadium case study. http://www.skanska-sustainability-case-studies.com/New-Meadowlands-Stadium-USA/Green%20Aspects. A factor of 0.625 tons of concrete per cubic meter of demolished material was derived from this study. Accessed November 2013.

80 Estimates of parking asphalt thickness provided by BKF Engineers. E-mail communication November 1, 2013.

81 E-mail communication. Alan Rosen of Rosen Goldberg Der and Lewitz, Inc. to Lamphier-Gregory. October 31, 2013.

82 The excavator (including excavator attachments) and skid steer were assumed to process 500 tons of material per day. The crusher was assumed to process 100 tons of material per hour.

- The change in service population between the 2035 Project scenario and the Baseline existing land use scenarios was calculated as the sum of the change in permanent employment between future and existing employment, plus the expected Coliseum District residents in 2035.[83]

Coliseum District Greenhouse Gas Emissions

Coliseum District GHG emissions were calculated for two baseline scenarios: the 2013 Baseline scenario and the 2035 Baseline scenario. The 2035 Baseline scenario is presented for informational purposes only, and includes GHG emissions projected from current land uses in the Coliseum District area as they would occur in 2035 (***without*** future development as envisioned under the Specific Plan). The GHG emission from these two baseline scenarios are shown in **Table 4.6-4.**

Table 4.6-4: Greenhouse Gas Emissions – Comparison of 2013 Baseline and 2035 No Project Scenarios for the Coliseum District

Type	Source	2013 Baseline	2035 Baseline	Units
Yearly Operational Emissions	Area	0.05	0.05	MT CO2e/yr
	Energy	8,381	7,493	
	Mobile	11,285	9,082	
	Waste Disposal	88	88	
	Water	69	63	
Total Operational Emissions		**19,823**	**16,727**	
Total Service Population		**1,660**	**1,660**	People
Total Operational Emissions per Service Population		**11.9**	**10.1**	MT CO_{2e}/SP/yr

1. Emissions estimated using CalEEMod version 2013.2.2

BAAQMD = Bay Area Air Quality Management District
CalEEMod = California Emissions Estimator Model
CEQA = California Environmental Quality Act
CO2e = carbon dioxide equivalents
GHG = greenhouse gases
MT = metric tonnes
SP = service population
USEPA = United States Environmental Protection Agency

Sources: BAAQMD. 2011. CEQA Air Quality Guidelines. May. CalEEMod version 2013.2.2. Available online at: www.CalEEModTM.com, City of Oakland. 2013. CEQA Air Quality Guidelines. October.

[83] Projected special event employment numbers were provided via electronic communication by the Hausrath Economics Group. December 17, 2013. Coliseum District employment and resident estimates were provided via electronic communication by Lamphier-Gregory. December 2, 2013

In order to compare the GHG emissions associated with development of the Coliseum District with the significance thresholds, the difference in GHG emissions between the 2035 Coliseum District project scenario and the 2013 Baseline land uses scenario was divided by the difference in service population between the two scenarios. This comparison is shown in **Table 4.6-5**, below.

Table 4.6-5: Greenhouse Gas Emissions –2035 Coliseum District, Net Increment of New Emissions

Type	Source	2013 Baseline	2035 Coliseum	Project Increment	Units
Yearly Operational Emissions [1]	Area	0.05	212	211	MT CO_2e/yr
	Energy	8,381	33,093	24,712	
	Mobile	11,285	43,951	32,666	
	Waste	88	341	253	
	Water	69	1,167	1,098	
Total Operational Emissions		19,823	78,746	58,941	
Construction Emissions[2]		-	4,819	4,819	
Total		**19,823**	**83,795**	**63,760**	
Incremental Service Population[3]				13,395	population and employment
Service Population Metric (Incremental Emissions/Incremental Service Population)				4.75	MT CO_2e/SP/yr
City of Oakland CEQA GHG threshold (Project-level)				4.6	
Exceeds Threshold?				**YES**	

1. Emissions estimated using CalEEMod version 2013.2.2.
2. Coliseum construction emissions were normalized by 40 years and added to the projects expected operation emissions as per the City of Oakland CEQA guidelines.
3. The change in service population is the sum of the increase in regular employees, the increase in FTE special event employees based on total employee hours, and the Coliseum District residents. City methodology does not include event spectators, retail shoppers, restaurant customers, and visitors to any other land uses at the Coliseum District to be included in the effective service population calculation. If these other temporary visitors (whose vehicles account for a large share of the GHG emissions) were to be included in the calculation of service population, the emissions per population would be substantially reduced

CalEEMod = California Emissions Estimator Model
CEQA = California Environmental Quality Act
CO_2e = carbon dioxide equivalents
FTE = full time equivalent
GHG = greenhouse gases
MT = metric tonnes
SP = service population

Sources:
CalEEMod version 2013.2.2. Available online at: www.CalEEModTM.com
City of Oakland. 2013. CEQA Thresholds of Significance Guidelines. October.

Future development at the Coliseum District will generate greenhouse gas emissions in excess of 1,100 metric tons of CO_2e annually, and would generate just over 4.6 metric tons of CO_2e per service

population annually. Consequently, new development at the Coliseum District would have a significant Project level impact related to GHG emissions.

Standard Condition of Approval

GHG Reduction Plan

New development projects at the Coliseum District will be subject to SCA GHG-1 - Scenario B, which includes "projects which involve a land use development; exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines; exceed at least one of the Thresholds of Significance (either more than 1,100 metric tons of CO2e annually, or more than 4.6 metric tons of CO2e per service population annually); and are considered to be Very Large Projects. New development at the Coliseum District exceeds 1,100 metric tons of CO2e annually (as shown in Table 4.6-5), and meets the requirements of a Very Large Project. Consequently, Scenario B applies to individual projects within the Coliseum District (e.g., the new Stadium, Ballpark and Arena and other subsequent projects, dependent upon their individual emissions).

Pursuant to SCA GHG-1, individual projects that exceed threshold criteria are required to undergo project-specific GHG emissions forecasts and, as appropriate, implement project-specific GHG Reduction Plans. The goals of the GHG Reduction Plan are to increase energy efficiency and to reduce GHG emissions to the greatest extent feasible below both of the applicable numeric City of Oakland CEQA Thresholds (i.e., total emissions and emissions per service population). As individual projects pursuant to the Specific Plan occur, their specific design features and GHG reduction measures (which may include, but are not limited to TDM programs, increased transit effectiveness, energy efficiency and sustainability measures, etc.) will be defined and factored into their individual GHG Reduction Plan.

These subsequent GHG Reduction Plans are intended to demonstrate increased energy efficiency and lowered GHG emissions by reducing GHG emissions from individual projects to at least 36% below the project's "adjusted" baseline GHG emissions. The GHG Reduction Plans are to include, at a minimum:

- a detailed GHG emissions inventory for the project under a "business-as-usual" scenario with no consideration of project design features, or other energy efficiencies,
- an "adjusted" baseline GHG emissions inventory for the project, taking into consideration energy efficiencies required by the City's Standard Conditions of Approval and other City requirements,
- a comprehensive set of quantified additional GHG reduction measures available to further reduce GHG emissions beyond the "adjusted" baseline GHG emissions. The types of allowable GHG reduction measures include physical design features, operational features, and the payment of fees to fund GHG-reducing programs (including the purchase of "offset carbon credits), and
- requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented.

Other SCAs

The City has also established several other SCAs and policies that would act to reduce project-specific GHG emissions. These other SCA's include:

- SCA F: Compliance with the Green Building Ordinance, OMC Chapter 18.02. (Prior to issuance of a demolition, grading, or building permit). The applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the Green Building Ordinance, OMC Chapter 18.02

- SCA Traf-1: Parking and Transportation Demand Management: This SCA requires that projects of a certain type and size submit for review and approval by the City of Oakland Planning and Zoning Division a Transportation Demand Management (TDM) Plan containing strategies to reduce on-site parking demand and single occupancy vehicle travel. Certain projects facilitated by the Coliseum Area Specific Plan would be required to prepare a TDM Plan, and incorporate the resulting reduced emissions (from reduced vehicle trips) into the project's GHG emissions calculations.
- SCA Util-1: Waste Reduction and Recycling: This SCA requires project applicants to submit a Construction & Demolition Waste Reduction and Recycling Plan (WRRP) and an Operational Diversion Plan (ODP) for review and approval by the Oakland Public Works Agency. Chapter 15.34 of the Oakland Municipal Code outlines requirements for reducing waste and optimizing construction and demolition (C&D) recycling. Affected projects include all new construction and all demolition. This SCA addresses reductions in construction–related emissions, which the City combines with a project's operational emissions to assess against the significance thresholds for operational emissions, even though construction emissions are not a component of BAAQMD's Guidelines. Therefore, this SCA will contribute to reducing total emissions of development facilitated by the Specific Plan.
- Several SCAs Regarding Landscape Requirements and Tree Replacement: These SCAs address landscape requirements for frontages of commercial buildings and replacement of trees removed as part of a project. Projects are required to install one tree for every 25 feet of street frontage in cases where sidewalks have adequate width. Additionally SCAs generally require the replacement of native trees removed as part of a project. Together, these SCAs that maintain and increase landscaping and trees create a cooler climate, reduce excessive solar gain, and absorb CO2e emissions for a contribution to emission reductions, but have no impact on the emissions inventory of development facilitated by the Specific Plan.
- Several SCAs Regarding Stormwater Management: Consistent with regional stormwater management programs and requirements that projects much comply with, the City has several SCAs that aim to reduce post-construction stormwater runoff that could affect the ability to accommodate potentially increased storms and flooding within existing floodplains and infrastructure systems. These SCAs are relevant as climate change can result in increased flooding due to warmer climate (e.g., earlier and greater melting of snowpack) and inadequate infrastructure.

Other Policies and Programs

Each of the following policies and programs were previously discussed in general in Regulatory Section for GHG Emissions and Climate Change:

- Oakland General Plan LUTE. The LUTE is aimed at promoting use of public transit, bicycles and pedestrian travel. Any reduction of transportation-related GHG emissions would be captured in the trip reduction associated with the TDM Plan.
- Oakland General Plan Open Space, Conservation and Recreation (OSCAR) Element. The OSCAR contains policies that (a) encourage the provision of open space, which increases vegetation area (trees, grass, landscaping, etc.) to effect cooler climate, reduce excessive solar gain, and absorb CO2; (b) encourage stormwater management, which relates to the maintenance of floodplains and infrastructure to accommodate potential increased storms and flooding; and (c) encourage energy efficiency and use of alternative energy sources. Policies that address vegetation area have no impact on the emissions inventory as vegetative sequestration is not a component of BAAQMD's

Guidelines Other policies regarding energy efficiency encourage and support energy efficiency but are not requirements under any implementation mechanism via the General Plan. They have resulted, however, in the implementation of the City of Oakland sustainability program discussed below.

- City of Oakland Sustainability Programs. The City has proactively adopted a number of sustainability programs in an effort to reduce the City's impact on climate change. Oakland's sustainability efforts are managed by the Oakland Sustainability Community Development Initiative and there are two main categories that relate to reducing GHG emissions from a development project: renewable energy and green building.
  - *Renewable Energy*. With regard to renewable energy, the City's Sustainability Program has set a priority of promoting renewable energy with a particular emphasis on solar generation. The Program's aggressive renewable energy goals include: a) 50 percent of city facilities' entire electricity use from renewable sources by 2017; and b) 100 percent of the city's entire electricity use from renewable sources by 2030. The City has some control over renewable energy percentages for buildings it operates by contracting its energy needs directly with the local utility. However, private building operators generally receive a standard energy mix from PG&E, and would not be required to contract for a higher percentage of renewables under this program as it only targets city facilities. PG&E has requested a 33 percent renewable energy mix goal for 2020 from the CPUC (compared to a 12 percent mix in 2007).
  - *Green Building*. With regard to green building strategies, the City of Oakland has implemented green building principles in City buildings through the following programs: a) Civic Green Building Ordinance (Ordinance No. 12658 C.M.S., 2005) requiring, for certain large civic projects, techniques that minimize the environmental and health impacts of the built environment through energy, water and material efficiencies and improved indoor air quality while also reducing the waste associated with construction, maintenance and remodeling over the life of the building; b) Green Building Guidelines (Resolution No. 79871, 2006) which provides guidelines to Alameda County residents and developers regarding construction and remodeling; and Green Building Education Incentives for private developers. The City of Oakland adopted mandatory green building standards for private development projects on October 19, 2010. The City Program adjusted emissions in Table 4.6-5 reflect GHG savings from implementation of green building requirements.

Design Features and Strategies Included in the Specific Plan for Reducing GHG

The Coliseum Area Specific Plan includes several site characteristics, design features and regulatory conformance requirements that would be effective in reducing GHG emissions from new development within the Coliseum District as individual development projects are incrementally proposed and developed. These design features and project characteristics help implement reduction strategies identified in AB32 and the City of Oakland's Energy and Climate Action Plan These design features are discussed below:

- Construction Waste: All new development pursuant to the Specific Plan (including development within the Coliseum District) will be required to comply with the City Construction and Waste Reduction Ordinance, and to submit a Construction and Demolition Waste Reduction Plan for review and approval. As a result, construction-related truck traffic with primarily diesel-fueled engines would be reduced, and the reuse of concrete, asphalt and other debris will reduce the amount of material introduced to area landfills.

- Transit Oriented Development: According to the City Pedestrian Master Plan, the City of Oakland has the highest walking rate of all cities in the nine-county San Francisco Bay Region. These high pedestrian trips are likely because neighborhoods are densely populated and well served by transit, including BART, AC Transit, Amtrak, and the SF Bay Ferry. Development facilitated by the Specific Plan, particularly within the Coliseum District, would reduce transportation-related GHG emissions compared to emissions from the same level of development elsewhere in the outer Bay Area due to the Coliseum District's immediate proximity to multiple forms of transit including the Coliseum BART station, the adjacent Amtrak station and existing AC Transit bus routes serving the District.
- Energy Efficiency: Development under the Specific Plan (including development within the Coliseum District) would be required to comply with applicable local, state, and federal regulations related to energy efficiency and conservation. In particular, future projects would be required to meet California Energy Efficiency Standards for Residential and Nonresidential Buildings, and the requirements of pertinent City policies as identified in the City of Oakland General Plan, helping to reduce future energy demand as well as reduce contribution to regional GHG emissions. These policies include, but are not limited to Cool Roof Coatings performance; CALGREEN; and the City's Green Building Ordinances. Furthermore, the Specific Plan expects that each of the new sports and entertainment venues to be designed and built and operated in such a manner as to achieve the comparable of a minimum LEED Certification rating of Silver as defined by the U.S. Green Building Council.
- Urban Infill near Multiple Transit Modes: New residential development under the proposed Specific Plan (particularly within the Coliseum District) would include higher-density housing near the Coliseum BART Station and would also be served by both Amtrak rail and AC Transit bus service. Infill housing near transit would promote walking and non-vehicular travel to a greater extent than would be the case for similar development in outlying areas without transit availability. In addition, the higher-density development would include a greater number of potential residents that could potentially use alternative modes of travel than in a lower density development. Development at the Coliseum Area would reduce transportation related GHG emissions compared to emissions from comparable development in less central locations. Because transit service is less available, development in those locations would likely result in increased peak-hour vehicle trips of relatively long distances, often in single-occupant vehicles, compared to development at the Coliseum Area.

Mitigation

None feasible other than those identified in SCA GHG-1

Resulting Level of Significance

Although the analysis presented above indicates that new development at the Coliseum District would generate greenhouse gas emissions that would exceed 1,100 metric tons of CO2e annually and more than the Project-level threshold of 4.6 metric tons of CO2e per service population annually, required implementation of City SCA GHG-1: Greenhouse Gas Reduction Plan would be capable of reducing these emissions to below the service population threshold. Coliseum District emission levels are so close to the project-level service population threshold prior to accounting for additional reductions that would be achieved through implementation of this SCA that it is reasonable to assume that reductions for individual projects within the Coliseum District can achieve the aggregate 4.6 metric tons per service population threshold. Measures that may be utilized to further reduce GHG emissions include physical design features and operational features that further reduce GHG emissions, and/or the payment of

fees to fund GHG-reducing programs, including the purchase of offset carbon credits. With effective implementation of SCA GHG-1, this impact would be reduced to a level of less than significant.

Plan Buildout – Plan Level Analysis

Impact GHG-2B: New development pursuant to Plan Buildout would not generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment. Specifically, new development pursuant to Plan Buildout (including all new development within the Coliseum District) would not produce emissions of more than the Plan-level threshold of 6.6 metric tons of CO_2e per service population annually, or more than the Project-level threshold of 4.6 metric tons of CO2e per service population annually. (**LTS**)

Similar to the methodology used to estimate GHG emissions from the Coliseum District only (see Impact GHG-2A, above) operational GHG emissions resulting from Plan Buildout were calculated using CalEEMod™. The same types of assumptions and data sources were used to calculate Plan Buildout emissions. Operational emissions were calculated for two scenarios, the 2035 Plan Buildout scenario and the 2013 Plan Baseline scenario based on existing land use, as shown below. The total change in emissions was divided by the total change in service population between the two scenarios to compare to the threshold.

The operational GHG emissions estimated to be generated under Plan Buildout (including all new development within the Coliseum District) are shown in **Table 4.6-6**. The effective per service population emissions are calculated to be 2.8 MT CO_2e per service population per year, less than the Plan-level threshold of 6.6 MT CO_2e /service population/year, and less than the project-level threshold of 4.6 MT CO2e /service population/year. The impact is less than significant.

Table 4.6-6: Greenhouse Gas Emissions –2035 Plan Buildout Emissions

Type	Source	2013 Baseline	2035 Plan Buildout	Net Change	Units
Yearly Operational Emissions [1]	Area	0.15	304	304	MT CO_2e/yr
	Energy	26,945	67,548	40,603	
	Mobile	45,788	93,053	47,265	
	Waste	796	853	57	
	Water	652	2,669	2,017	
Total Operational Emissions		**74,181**	**166,427**	90,246	
Incremental Service Population				30,270	people
Service Population Metric				3.0	MT CO_2e/SP/yr
Plan level / Project level GHG threshold				4.6 / 6.6	
Exceeds Threshold?				No / No	

Notes:
1. Emissions estimated using CalEEMod version 2013.2.2.

Abbreviations:
CalEEMod = California Emissions Estimator Model
CEQA = California Environmental Quality Act
CO_2e = carbon dioxide equivalents
GHG = greenhouse gases
MT = metric tonnes
SP = service population
yr = year

Sources:
CalEEMod version 2013.2.2. Available online at: www.CalEEModTM.com
City of Oakland. 2013. CEQA Thresholds of Significance Guidelines. October.

Conflicts with Plans, Policies or Regulations

Coliseum District and Plan Buildout

Impact GHG-3: New development pursuant to Plan Buildout (including the Coliseum District) would not fundamentally conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing greenhouse gas emissions. (**LTS**)

The City's numeric significance thresholds were formulated based on AB32 reduction strategies. The numeric GHG significance thresholds are intended to serve as interim levels during the implementation of AB32 and SB375. Until AB32 has been fully implemented in terms of adopted regulations, incentives, and programs, and until the Sustainable Communities Strategy or Alternative Planning Strategy required

by SB375 have been adopted or the California Air Resources Board (ARB) adopts a recommended threshold, the City's significance thresholds represent substantial compliance with applicable plans, policies and regulations adopted for the purpose of reducing GHG emissions. Therefore, since new development anticipated under Plan Buildout levels (including the Coliseum District) would not exceed the numeric service population thresholds at either the Plan or Project level (see analysis under Impact GHG-2B, above), the Coliseum Area Specific Plan would not conflict with applicable plans, policies and regulations adopted for the purpose of reducing GHG emissions.

Design Features and Strategies Included in the Specific Plan for Reducing GHG

In addition to meeting the numeric threshold, the Coliseum Area Specific Plan includes several site characteristics, design features and regulatory conformance requirements that would be effective in reducing GHG emissions on an area-wide basis, and as individual development projects are incrementally proposed and developed. These design features and project characteristics help implement reduction strategies identified in AB32 and the City of Oakland's Energy and Climate Action Plan These design features, as more fully discussed under Impact GHG-2A above, are summarized below:

- compliance with the City Construction and Waste Reduction Ordinance submittal of a Construction and Demolition Waste Reduction Plan;
- development facilitated by the Specific Plan would reduce transportation-related GHG emissions compared to emissions from the same level of development elsewhere in the outer Bay Area, due to the Planning Area's proximity and access to transit and its transit-oriented development pattern;
- development under the Specific Plan would be required to comply with applicable local, state, and federal regulations related to energy conservation, including California Energy Efficiency Standards for Residential and Nonresidential Buildings, Cool Roof Coatings performance, CALGREEN, and the City's Green Building Ordinances;
- new residential development under the proposed Specific Plan would include higher-density housing near the Coliseum BART Station and would also be served by both Amtrak rail and AC Transit bus service. Infill housing near transit would promote walking and non-vehicular travel to a greater extent than would be the case for similar development in outlying areas without transit availability;
- all new development pursuant to the Coliseum Area Specific Plan will be reviewed for consistency with numerous relevant General Plan policies that directly or indirectly result in reduced levels of GHG emissions, including the promotion of compact and transit-oriented development, alternatives to single-occupancy vehicle transportation, energy efficiency in building design and site planning, landscaping, and other measures that would individually and collectively reduce the energy usage of new developments; and
- all new development facilitated by the Coliseum Area Specific Plan is also expected to be required to comply with the applicable requirements of the City's Energy and Climate Action Plan (ECAP).

Standard Conditions of Approval

Relevant City of Oakland SCAs that will apply to individual subsequent development projects are more fully discussed under Impact GHG-2A above, and summarized below:

- SCA GHG-1, which requires each subsequent development project within the Coliseum District and pursuant to Plan Buildout to assess whether that project may result in individually significant levels

of GHG emissions. Projects exceeding pertinent screening criteria will be required to undergo project-specific GHG emissions forecasts and, as appropriate, implement project-specific GHG reduction plans intended to reduce project emissions levels below relevant thresholds. GHG offsets, whether implemented on or off-site, are potentially viable components of acceptable GHG reduction plans;

- SCA F: Compliance with the Green Building Ordinance, OMC Chapter 18.02;
- SCA Traf-1: Parking and Transportation Demand Management, which requires that projects of a certain type and size submit for review and approval by the City of Oakland Planning and Zoning Division a Transportation Demand Management (TDM) Plan containing strategies to reduce on-site parking demand and single occupancy vehicle travel;
- SCA Util-1: Waste Reduction and Recycling;
- several SCAs regarding landscape requirements and tree replacement which help to create a cooler climate, reduce excessive solar gain and absorb CO2e emissions; and
- several SCAs regarding stormwater management which could affect the ability of new development to address potentially increased storms and flooding associated with climate change.

Conclusions

The Coliseum Area Specific Plan would not be in conflict with current plans or policies adopted for the purpose of reducing GHG emissions. All new development pursuant to the Specific Plan (including development within the Coliseum District) would be required to comply with applicable plans, policies and regulations adopted for the purpose of reducing GHG emissions. The Specific Plan is consistent with each of the plans, policies and regulations described above, including the 2012 Oakland Energy and Climate Action Plan (ECAP), in reducing GHG emissions as compared to a baseline business-as-usual approach. The impact would be less than significant.

4.7

Hazards and Hazardous Materials

This chapter of the EIR discusses the hazardous materials issues associated with the Project Area, project construction, and project operations. The hazardous materials issues evaluated include past onsite and offsite storage and release of petroleum products, including the presence and former presence of underground storage tanks at the Project Area; potential hazardous waste issues during site construction; and the potential of the project to generate and discharge hazardous materials and/or hazardous wastes. The report also identifies potential project impacts and appropriate mitigation measures when necessary and describes the regulatory process for remediation of the Project Area.

The following section discusses the hazards and hazardous materials issues related to the existence of hazardous materials associated with the Project Area. The section describes the environmental and regulatory setting that is applicable to health and safety regarding hazards and hazardous materials. Potential impacts are discussed and evaluated, and appropriate mitigation measures or Standard Conditions of Approval (SCA) are identified, as necessary.

This hazards and hazardous materials evaluation utilized the following resources in the review of each individual parcel:

- Environmental Data Resources, Inc. (EDR) was contracted to provide an electronic search of databases maintained by various Federal and State regulatory agencies, containing records of environmental permits, records of properties generating, handling or storing hazardous materials, records of properties impacted by regulated compounds, and records of properties under investigation by the government for alleged violations of hazardous material regulations. The EDR Database Search Report is included in **Appendix 4.7A**.
- Historical topographic maps, Sanborn Maps, and historic aerial photographs were also reviewed during this study, in an attempt to identify past site and vicinity property uses that may indicate a possible recognized environmental condition. The following historical sources were reviewed:
  - Aerial photographs from the years 1939, 1946, 1958, 1965, 1968, 1974, 1975, 1982, 1993, 1998, 1999, and 2005 obtained from EDR, Inc.
  - USGS 7.5-minute topographic maps from the years 1899, 1915, 1948, 1949, 1959, 1968, 1973, 1980, and 1993 obtained from EDR, Inc.
  - Certified Sanborn fire insurance maps from the years 1925, 1950, 1952, 1959, 1960, 1961, 1965, 1966, 1968, and 1969 obtained from EDR, Inc.
  - The observations made from the maps and aerial photos for each parcel and vicinity properties are presented in tables in the specific parcel sections.
- Hazardous materials files and documents available from local agencies were reviewed by going to the DTSC's EnviroStor website and at the California Regional Water Quality Control Board – San Francisco Bay Area Region GeoTracker website.

This Hazards and Hazardous Materials section contains the following limitations:

- Interviews with previous and current property owners were not conducted
- Interviews with previous and current occupants were not conducted
- Site reconnaissance visits comprising of individual site visits to assess each site in detail were not conducted for the parcels comprising the proposed Project Area.
- A City directories Report or an Environmental Lien Search for each parcel was not obtained from Environmental Data Resources (EDR) for the purposes of this report. EDR provides environmental information on sites collected from federal, state, city, and tribal databases.

Environmental Setting

This section describes the environmental setting that is applicable to health and safety regarding hazards and hazardous materials associated with the Project Area.

Definition of Hazardous Materials

A hazardous material is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (State of California, Health and Safety Code, Chapter 6.95, Section 25501(o). The term "hazardous materials" refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic, ignitable, corrosive, or reactive.

Past industrial or commercial activities on a site may have resulted in spills or leaks of hazardous materials to the ground, resulting in soil and/or groundwater contamination. Hazardous materials may also be present in building materials which can be released during building demolition activities. If improperly handled, hazardous materials and wastes can cause public health hazards when released to the soil, groundwater, or air.

The four basic exposure pathways through which an individual can be exposed to a hazardous material include: inhalation, ingestion, bodily contact, and injection. Exposure can come as a result of an accidental release of hazardous materials during transportation, storage, or handling. Disturbance of contaminated soils during construction can also cause exposures to workers, the public or the environment through stockpiling, handling, or transportation of soils.

A hazardous waste, for the purpose of this EIR, is any hazardous material that is abandoned, discarded, or recycled, as defined in the State Health and Safety Code (Chapter 6.95, Section 25125).The transportation, use, and disposal of hazardous materials, as well as the potential releases of hazardous materials to the environment, are closely regulated through many state and federal laws.

Cortese List Properties, Defined

In California, regulatory databases listing hazardous materials sites provided by numerous federal, state, and local agencies are consolidated in the "Cortese List" pursuant to Government Code Section 65962.5. The Cortese List is located on the California Environmental Protection Agency's (Cal EPA) website and is a compilation of the following lists:

- List of Hazardous Waste and Substances sites from Department of Toxic Substances Control (DTSC) EnviroStor database. The DTSC EnviroStor database includes federal and state response sites, voluntary, school, and military cleanups and corrective actions, and permitted sites;
- List of Leaking Underground Storage Tank Sites by County and Fiscal Year from the State Water Resources Control Board (SWRCB) GeoTracker database. The SWRCB GeoTracker database includes LUST, UST, and SLIC sites;
- List of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit;
- List of "active" Cease and Desist Order (CDO) and Cleanup and Abatement Order (CAO) sites from the SWRCB; and
- List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by DTSC and listed on their EnviroStor database (Cal EPA, 2013).

The databases cited above identify sites with suspected and confirmed releases of hazardous materials to the subsurface soil and/or groundwater. The reporting and statuses of these sites change as identification, monitoring and clean-up of hazardous sites progress. Typically, sites are closed once it has been demonstrated that existing site uses combined with the levels of identified contamination present no significant risk to human health or the environment. These databases are updated periodically and would need to be revisited prior to construction for adoption and development under the Specific Plan.

Soil and Groundwater Contamination

Soil and groundwater contamination by hazardous waste can fall into one or more of the following classifications:

- LUSTs – leaking underground storage tanks,
- USTs – permitted underground storage tanks,
- SLIC sites – Spills, Leaks, Investigations, and Cleanup Program is designed to protect and restore water quality from spills, leaks, and similar discharges.
- Voluntary cleanup sites – Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have requested that DTSC oversee investigations and/or cleanup activities and have agreed to provide coverage for DTSC's costs.
- RESPONSE sites or State Response Sites. These sites have confirmed releases and are under DTSC oversight for remediation.
- Brownfield sites. Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

In addition, sites previously utilized for auto repair operations have the potential for petroleum hydrocarbon impacts due to improper storage of materials or poor housekeeping practices. Former dry cleaning sites are often impacted by chlorinated solvents – chemicals once commonly used by a majority of dry cleaning operations.

Fuel Contamination from Leaking Underground and Aboveground Storage Tanks

A UST system is a storage tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground. Until the mid-1980s, most USTs were made of single-walled bare steel, which were found to corrode over time resulting in leakage. Faulty installation or maintenance procedures also lead to UST leakage, in addition to potential releases associated with spills. Recently revised UST regulations have significantly reduced the incidents of UST leakage from new UST systems and the consequential soil and groundwater contamination. However, there are some older UST systems that remain in service and many sites contaminated by leaking USTs that are still under investigation and clean-up. USTs installed prior to the mid-1980's that have leaked as well as improperly installed USTs have resulted in fuel spills can present contamination issues in the Project Area. In addition, it is not uncommon for older USTs to have been abandoned in place with no documentation of location or abandonment technique.

There are **twenty-two** known LUST sites located within the Project Area that have contamination issues (SWRCB, 2013). These sites are in various stages of investigation by the regulatory agencies. In the event that future projects were to occur at these sites, the construction activities could encounter contamination depending on the progress in cleanup activities at the time of construction. The fourteen known LUST sites located outside of the Project Area have the potential to affect the proposed project but would be increasingly less likely to do so with increasing distance. Additional factors such as groundwater flow direction, groundwater gradient information, and monitoring well sampling data should be reviewed on a site by site basis to ascertain a better understanding of the likelihood of potential impacts to the proposed project.

Contamination from Spills and Leaks

Spills and leaks of chemicals can contaminate soil and groundwater when proper precautions are not in place. Various businesses and industries transport, use, and dispose of chemicals and may improperly or accidentally release them into the environment. Chemicals can include but are not limited to heavy metals, solvents, and flammable materials. Non-permitted discharges of these chemicals are documented by the San Francisco Bay RWQCB in the Spills SLIC list.

Within the Project Area, there are **two** known SLIC sites identified and undergoing clean up and monitoring with the oversight of the DTSC. In the event that future projects were to occur at this site, the construction activities may encounter contamination depending on the progress of cleanup activities at the time of construction. The one known SLIC site located outside of the Project Area has the potential to affect the Site.

Other Classifications for Contaminated Sites

Other sites with contaminated soil and/or groundwater within the Project Area include those in the state response sites (RESPONSE) database which lists sites under DTSC oversight; as well as sites listed for voluntary cleanup. The DTSC EnviroStor database listed **one** RESPONSE site and **two** Voluntary Cleanup Program sites within the Project Area and two located in the vicinity of the Project Area (DTSC, 2012). These sites are in various stages of investigation by the regulatory agencies. In the event that future projects were to occur at these sites, the construction activities may encounter contamination depending on the progress of cleanup activities at the time of construction.

Contamination Imported Fill Material

The Project Area is located on portions of Oakland which were historically wetlands and marshes associated with the Bay. Fill material was used to fill in these areas and provide stable land for

construction. However, several soil samples collected from the fill material during previously conducted environmental investigations within the Project Area have identified elevated contaminants of concern (COCs). These COCs may be related to previously conducted site operations exclusive to the land on which they were collected or may be indicative of a larger issue with the fill material used in the Project Area. As a result, the proposed project may encounter contaminated fill material during construction activities.

Hazardous Building Materials Associated with Demolition

Redevelopment within the Project Area could include demolition of some portions of the existing structures. The Project Area is currently highly developed and includes many older buildings that may have been constructed with hazardous building materials. These materials include lead-based paint, asbestos, and polychlorinated biphenyls (PCBs). If disturbed, they could present a potential hazard to workers or the public.

Prior to the U.S. Environmental Protection Agency (USEPA) ban in 1978, lead-based paint was commonly used on interior and exterior surfaces of buildings. Through such disturbances as sanding and scraping activities, renovation work, or gradual wear and tear, old peeling paint, or paint dust particulates have been found to contaminate surface soils or cause lead dust to migrate and affect indoor air quality. Exposure to residual lead can cause severe adverse health effects especially in children.

Asbestos is a naturally-occurring fibrous material that was extensively used as a fireproofing and insulating agent in building construction materials before such uses were banned by the USEPA in the 1970s. Asbestos was commonly used for insulation of heating ducts as well as ceiling and floor tiles to name a few typical types of materials. Similar to lead-based paint, contained within the building materials, asbestos fibers present no significant health risk, but once the fibers are disturbed they become airborne and create potential exposure pathways. The fibers are very small and cannot be seen with the naked eye. Once they are inhaled they can become lodged in the lungs potentially causing lung disease or other pulmonary complications.

PCBs are organic oils that were formerly used primarily as insulators in many types of electrical equipment including transformers and capacitors. After PCBs were determined to be a carcinogen in the mid to late 1970s, the USEPA banned PCB use in most new equipment and began a program to phase out certain existing PCB-containing equipment. Fluorescent lighting ballasts manufactured after January 1, 1978, do not contain PCBs and are required to have a label clearly stating that PCBs are not present in the unit.

Radon

Radon is a naturally-occurring odorless, tasteless, and invisible gas produced from the decay of uranium in soil and water (USEPA, 2013). Structures placed on native soils with elevated levels of radon can be impacted by the intrusion of radon gas into breathing spaces of the overlying structures, which can cause lung cancer. Alameda County is listed as a Zone 2 county with a predicted average indoor radon screening level between 2 and 4 picocuries per liter. This is considered a moderate level by the USEPA. The USEPA recommends remedial action for areas with levels above 4 picocuries per liter. Based on the USEPA information, the Project Area is not considered to have radon above the recommended health risk level.

Cortese List Properties within the Coliseum District

Within the Coliseum District (Sub-Area A, plus the Arena site within Sub-Area B) the following relevant sites are present - 6 LUST sites, 1 Voluntary Cleanup site, 1 RESPONSE site, 1 SLIC site, 1 permitted UST site, 3 historical auto station facilities, and 1 Brownfield site. These Cortese List properties are described more specifically, by arrangement of Project "districts", below. Locations of relevant sites in Sub-Area A are presented in **Figure 4.7-1** and in Sub-Area B in **Figure 4.7-2**.

Sites beyond the Coliseum District may have the potential to affect the proposed Project if the contaminants associated with those sites migrate to within the Project Area. However, such sites are not known to be currently affecting the Project Area. The permitted UST sites, historical auto station sites, and historical dry cleaner sites within the Project Area or in the vicinity are not known to have contamination issues.

Sports and Events Venue District

Prior to construction of the current Coliseum complex, the entire property was historically open land or used as farm land. Pesticides were likely to have been used in the areas utilized for agricultural purposes as part of normal farming practices. Historical structures were also identified in aerial photographs from 1939 to 1958. Many areas with historic structures are found to have residual pesticides or metals in soil around the perimeter of the structures from pest control spraying and the flaking of lead-based paint.

Proposed New Stadium Site

This site does not contain any Cortese List properties.

Review of historical maps and aerial photographs indicated this site was utilized prior to construction of the Coliseum complex in 1966 for the storage of unknown materials. Due to the unknown nature of these materials there is a potential for environmental concerns.

Proposed Stadium Parking Lot

Malibu Grand Prix Site – 8000- 8010 S. Coliseum Way

The site is listed in the HIST CORTESE, LUST, SLIC, Alameda County CS, CA FID UST, SWEEPS UST, HIST UST, and Notify 65 databases. The site is located within the boundaries of the proposed Stadium Parking Lot. Prior to 1989, the Malibu Grand Prix facility maintained two underground storage tanks (USTs) containing marine mix gasoline. The two USTs were removed on March 29, 1989 and February 1, 1990, respectively. Free-phase fuel was observed floating on water in the tank excavations during both tank removals. During the tank removal activities, soil samples collected from the tank excavations contained benzene at concentrations ranging from 0.07 to 33 milligrams per kilogram (mg/kg) and total petroleum hydrocarbons as gasoline (TPH-G) at concentrations ranging from 26 to 150 mg/kg. Subsequent site investigations detected fuel hydrocarbons and oxygenates in soil and groundwater over a wide area beneath the site. Groundwater monitoring and sampling was conducted at the site between 1992 and 1996. Benzene and TPH-G were detected in groundwater samples collected from monitoring wells at concentrations up to 2,700 and 20,000 micrograms per liter (µg/L), respectively. Additionally, imported fill material, likely placed on site between 1955 and 1975, is present throughout the site; and contains concentrations of polychlorinated biphenyls (PCBs), phenanthrene, napthalene, pyrene, and lead.

Based on review of available documents on the EnviroStor website, groundwater monitoring at the site occurred between 1992 and 1996.

SITE LOCATIONS

1. MALIBU GRAND PRIX SITE, 8000 S. COLISEUM WAY
2. OAKLAND INT. TRADE CENTER, 625 HEGENBERGER ROAD
3. 675 HEGENBERGER ROAD
4. MOOSE LODGE, 690 HEGENBERGER ROAD
5. ARCO #4494, 566 HEGENBERGER ROAD
6. HEGENBERGER SHELL, 540 HEGENBERGER ROAD
7. 640 HEGENBERGER ROAD
8. 680 HEGENBERGER ROAD
9. OAKLAND COLISEUM SITE, 7000 COLISEUM WAY
10. OMEGA TERMITE, 807 75TH AVENUE
11. LIONS CREEK CROSSINGS, 800 69TH AVENUE
12. SILVA ASSOCIATION ROOFING, 814 69TH AVENUE
13. A/C BODY SHOP, 902 72ND AVENUE
14. 711 71ST AVENUE
15. WESTERN COLLOID, 700 71ST AVENUE
16. S.A. RUSSO WINDOW FRAMING, 6925 SAN LEANDRO STREET
17. 6815 SAN LEANDRO STREET
18. 6825 SAN LEANDRO STREET
19. FIRESTONE STORE, 6601 SAN LEANDRO STREET
20. AERO QUALITY PLATING, 710 73RD AVENUE
21. UNION PACIFIC OAKLAND COLISEUM, 700 73RD AVENUE
22. 7001 SNELL STREET
23. 69TH AVENUE 801, COLISEUM GARDENS
24. UNION OIL #3135, 845 66TH AVENUE
25. FRUITVALE BUSINESS CENTER, 915 66TH AVENUE
26. CALTRANS OAKLAND MAINTENANCE, M8099 S. COLISEUM WAY
27. 555 HEGENBERGER ROAD
28. CRUISE AMERICA 796 66TH AVENUE
29. ALLIED CRANE MAINTENANCE, 727 66TH AVENUE
30. PECK AND HILLIS COMPANY, 701 66TH AVENUE
31. 555 66TH AVENUE

Figure 4.7-1
Cortese List, Sub-Area A

Figure 4.7-2
Cortese List, Sub-Areas B & E

Oakland International Trade Center (Home Base site) - 625 Hegenberger Road

The site is listed in the HIST CORTESE, LUST, Alameda County CS, CA FID UST, SWEEPS UST, HAZNET, US Brownfields, and FINDS databases and is located in the eastern portion of the proposed parking lot site. According to the Envirostor website, the property contained an active gasoline service station between the mid-1960s and the mid-1970s. In 1988 and 1990 a site investigation was conducted which indicated the presence of TPH-G, TPH-D, and TPH-Mo in Site soils. In 1993 the fuel system and tanks were removed and site investigation, groundwater monitoring, and remedial action began. In 1996 soil was excavated and treated onsite and from 2000 to 2002 in situ bio-remediation conducted. Benzene, TPH-G, and MTBE concentrations in site groundwater ranged from ND<0.3 to 16,000 µg/L; ND<50 to 72,000 µg/L; and ND<5.0 to 2,100 µg/L, respectively.

In 2009 the Site was granted closure; however a Land Use Limitation appears to be in place at the property.

675 Hegenberger Road

The site is listed in the ERNS, CHMIRS, FTTS, HIST FTTS, FINDS, NPDES databases. The ERNS listing is due to two reported spills into Elmhurst Creek with flows through this site:

- In 2011 it was reported that approximately 400 gallons of water mixed with shore pack polymer was spilled into San Leandro Creek.
- In 1999, an unknown quantity of paint thinner was dumped into a drainage area which feeds San Leandro Creek.

Off-Site Properties and Other Site Concerns

The following sites are located in the vicinity of the Coliseum parking lot and have been identified as having the potential to adversely affect environmental conditions on the site.

- Moose Lodge – 690 Hegenberger Road. The site is listed in the HIST CORTESE, LUST, Alameda County CS, and HAZNET databases and is located approximately 260 feet west. The Moose Lodge site was formerly utilized as a trucking company maintenance yard containing a 10,000 gallon underground fuel storage tank (UST) and a fuel dispenser area. In 1995 the UST and fuel disperser were removed from the site. Approximately 60 cubic yards of soil was excavated and stockpiled onsite during tank removal activities. In 1996 one shallow soil sample and one grab groundwater sample were collected from the vicinity of the former dispenser island. Groundwater was encountered at approximately 15 fbg during drilling activities. Concentrations of TPH-G and BTEX were not detected in either the soil sample or the grab groundwater sample. In 2011 the Alameda County Department of Health Services issued a letter requesting additional site Characterization be conducted.
- Arco #4494 – 566 Hegenberger Road. The site is listed in the HIST CORTESE, LUST, SWEEPS UST, Alameda County CS, HIST UST, HAZNET, UST, US HIST Auto Stat, CHMIRS databases and is located approximately 350 feet west. The Arco #4494 site is an active gasoline station. In 1988 one UST was removed from the site. Soil samples collected from the tank cavity contained concentrations of TPH-G (11 mg/kg), TPH-D (370 mg/kg), and TPH-MO (4,800 mg/kg). Subsequent site investigations detected elevated concentrations of TPH-G, TPH-D, TPH-MO, and BTEX over a wide area of the site. Groundwater monitoring was conducted at the site from 1989 to 1996 and then again from 2000 to 2007. Concentrations of TPH-G ranged from ND<50 to 78,000 µg/L. Concentrations of benzene ranged from ND<0.5 to 2,900 µg/L. Concentrations of MTBE ranged from 1.8 to 18,800 µg/L. In 2009, the Alameda County Department of Health Services granted closure to the site. According to EnviroStor, residual pollution remaining in soil beneath the site included concentrations of TPH-G,

TPH-D, and Benzene of up to 33 mg/kg, 36 mg/kg, and 1.3 mg/kg respectively. Maximum concentrations of up to 1.8 µg/L of MTBE remain in groundwater.

- Hegenberger Shell – 540 Hegenberger Road. The site is listed in the HIST CORTESE, LUST, CA FID UST, SWEEPS UST, HIST UST, Alameda County CS, RCRA SQG, FINDS, HAZNET databases and is located approximately 150 feet east. In 1996, one soil sample and three soil vapor samples were collected from the site. The soil sample contained 3,400 mg/kg TPH-G, 17 mg/kg benzene, and 720 mg/kg MTBE. The soil vapor samples contained elevated concentrations of TPH-G, benzene, and MTBE as well. Between 1998 and 2012 several subsurface investigations were conducted. Soil samples collected as part of those investigations contained maximum concentrations of TPH-D, TPH-G, benzene, and MTBE of 108, 3,400, 39, and 240 mg/kg, respectively. Maximum grab groundwater concentrations of 5,780 µg/L of TPH-D, 200,000 µg/L TPH-G, 11,000 µg/L of benzene, and 1,3000,000 µg/L of MTBE were detected. Between 1999 and 2003 groundwater extraction was conducted on site. In 2003 a groundwater extraction system was installed on site and was operated until 2005. Quarterly groundwater monitoring was conducted at the site between 1998 and 2009. The depth to groundwater beneath the site ranges from 4 to 10 fbg. The groundwater flow direction is generally toward the north or east.
- South Coliseum and Hegenberger Road (approximately 80 feet south) – A sheen was reportedly observed in the creek at this location.
- Additionally, EDR databases identified the following sites as previously containing either a dry cleaners or auto station: 640 Hegenberger Road (approximately 150 feet west) – US HIST Auto Stat.; and 680 Hegenberger Road (approximately 170 feet west) – US HIST Cleaners.

Based on the review of soils data obtained from the sites identified above, the proposed Stadium Parking Lot area appears to contain fill material impacted with polychlorinated biphenyls (PCBs), phenanthrene, napthalene, pyrene, and lead.

Buildings located within this area were constructed between 1965 and 1974; therefore the structures should be evaluated for potential asbestos containing materials and lead based paint.

Proposed Ballfield Site

Oakland Coliseum District – 7000 Coliseum Way

This site is listed in the LUST, FINDS, EMI, HAZNET, CHMIRS, RCRA SQG databases. The ERNS listing is due to a reported spill of diesel fuel from a truck. The HAZNET listing cited the disposal of PCBs and material containing PCBs, asbestos containing waste, and unspecified oil-containing wastes from the site. In 1999 a UST was removed from and contamination was observed in the overburden. Soil concentrations from sidewall samples contained maximum concentrations of TPH-G of 240 mg/kg, benzene of 0.79 mg/kg, and MTBE of 5.8 mg/kg. Water samples collected during the tank removal contained maximum concentrations of TPH-G of 58,000 µg/L, benzene of 1,000 µg/L, and MTBE of 65,000 µg/L. In 2000 a site investigation was conducted. Groundwater samples from the investigation contained maximum concentrations of TPH-G of 94 µg/L and MTBE of 210 µg/L. The site was granted closure in 2000.

Proposed New Arena Site

Grand Auto – 7200 Edgewater Drive

The site is listed in the ERNS, FINDS, EMI, CA HIST Auto Stat, HIST CORTESE, LUST, Alameda County CS, CUPA Listing, WDS, HAZNET, and HIST UST databases. The Grand Auto Site is located in the northwest

portion of the proposed new Arena site. In 1987 two USTs were reportedly removed from the site. In 1991 a release of approximately 80 gallons of hydraulic oil was reported. Contaminated soil was subsequently excavated and disposed of off-site. A grab groundwater sample collected from the hydraulic oil pit detected elevated concentrations of TPH-G and BTEX. Between 1992 and 1993 soil and groundwater investigations were conducted on site. Groundwater monitoring and sampling was conducted at the site between 1992 and 1994. Groundwater analyses indicated the presence of TPH-D. Additionally, soil samples suggested that fill material located throughout the site contains concentrations of PAHs, PCBs, TPH-D, TPH-MO, and SVOCs.

The site was granted closure in 1995.

Clark Construction Group Inc./Cranbrook Group Inc., 7677 Oakport Street

This parcel is listed on the US Hist Auto Stat database.

Other Site Concerns

Based on review of soil data from the above site, areas of this property appear to contain fill material impacted with PAHs, PCBs, TPH-D, TPH-MO, and SVOCs.

Coliseum BART Station and TOD District (east of San Leandro Street)

This portion of the Coliseum BART TOD District does not contain any Cortese List properties.

Off-Site Properties and Other Concerns

The following sites are located in the vicinity of the Coliseum BART Station TOD east of San Leandro Street and have been identified as having the potential to adversely affect environmental conditions on the site.

- Omega Termite – 807 75th Avenue. The site is listed in the HAZNET, FINDS, LUST, HIST CORTESE, Alameda County CS, RCRA SQG databases and is located approximately 550 feet to the east of the Coliseum District. In 1996, three gasoline USTs were removed from the subject property. Analysis of soil and groundwater samples collected during the tank removal activities revealed that a release had occurred from the tank system. TPH-G, benzene, and MTBE were reported in the soil samples at concentrations up to 4,300 mg/kg, 13 mg/kg, and 25 mg/kg, respectively. TPH-G, Benzene, and MTBE were reported in the tank cavity water sample at concentrations up to 48,000 µg/L, 4,100 µg/L, and ND<130 µg/L, respectively. In 2000 an additional excavation action was initiated. During the excavation activities, a 500-gallon waste oil UST was discovered at the eastern end of the excavation. A total of 7,400 gallons of hydrocarbon-impacted groundwater were pumped from the excavation, treated on-site, and discharged to the sanitary sewer system under an East Bay Municipal Utility District permit. Between 2007 and 2009 an ozone micro-sparge system was operated on site. In 2010 the Alameda County Environmental Health (ACEH) issued a no further action letter however a Land Use Limitation appears to be in place at the property. Historical depth to groundwater beneath the site ranges from 3.5 to 10 fbg. Groundwater flow direction is generally to the northwest.
- Lion Creek Crossings, Phase IV – 800 69th Avenue. The Lion Creek Crossings, Phase IV site is located approximately 120 feet northwest of Parcel AA5 and is a Cleanup Program site. The site is bounded by 69th Avenue, Snell Street, and 70th Avenue, and includes twelve street addresses and parcel numbers. The site was previously occupied by a number of single family homes as well as businesses that conducted a variety of operations which may have handled hazardous materials. An inspection

was performed by Alameda County Health Care Services (ACHCS) at the 830-844 69th Avenue Parcel in May 1988. During this inspection areas that stained and saturated with motor oil were noted at the facility. Two subsurface investigations were conducted in 2008 and 2009. Site cleanup activities involved the excavation and removal of approximately 4,960 CY of soil and approximately 398,600 gallons of groundwater from multiple areas at the site. Post removal soil concentrations of TPH-G ranged from ND to 39 mg/kg; TPH-D ranged from 1.7 mg/kg to 81 mg/kg; TPH-MO ranged from ND to 270 mg/kg; Benzene ranged from ND to 0.017 mg/kg; Lead ranged from <5.1 mg/kg to 76 mg/kg; and Arsenic ranged from 1.8 mg/kg to 9.9 mg/kg. Post remediation maximum concentrations in groundwater of TPH-D were 190 µg/L and benzene 0.97 µg/L. The site was granted closure in 2010.

- Silva Association Roofing – 814 69th Avenue. The Silva Association Roofing Site is located approximately 120 feet northwest of Parcel AA5 and is listed in the HIST UST, HIST CORTESE, LUST, Alameda County CS, CA FID UST, and SWEEPS UST databases. In 1990 one UST was removed from the site. Maximum concentrations TPH-G of 180 mg/kg and benzene of 0.9 mg/kg were detected in soils from the tank cavity. Additional excavation was performed later that year. In 1992 and 1997 two separate site investigations were conducted. One grab groundwater sample collected from the 1997 investigation contained concentrations of MTBE at 12 µg/L. The site closure was granted in 1998.
- A/C Body Shop (L&M Plating Inc.) – 902 72nd Avenue. The A/C Body Shop site is approximately 50 feet east of Parcel AA6 and is listed in the HAZNET, Envirostor, and CERC-NFRAP databases. Available information indicates the site formerly operated as a plating facility known as L&M Plating. DTSC investigated the facility in 1986. Chromium, copper, cyanide, zinc, and 1,1,1-trichloroethane were identified from waste streams during the waste sampling conducted for compliance/permit variance purposes. No further information is available.

Historic structures were identified on the site in aerial photographs beginning in 1939. Several of the current structures located on the site may date back to the 1960s. Due to the date of construction, the current structures should be evaluated for asbestos containing materials and lead based paint. Additionally, many areas with historic structures are found to have residual metals in soil around the perimeter of the structures from the flaking of lead-based paint.

Coliseum BART Station and TOD District (west of San Leandro Street)

The following sites, located within the boundaries of the Coliseum BART TOD District west of San Leandro Street, were identified as potential environmental concerns:

711 71st Avenue

The site is listed in the US Brownfields, FINDS, and HAZNET databases. In 2011, a Phase II Site Investigation was conducted at the site. The shallow samples collected contained TPH-d up to 130 mg/kg, TPH-mo up to 1,000 mg/kg, chromium up to 1,400 mg/kg, and lead up to 160 mg/kg. Grab groundwater samples collected at the site contained cis-1, 2-dichloroethene at a concentration of 11 µg/L.

Western Colloid – 700 71st Avenue

The site is listed in the CERC-NFRAP, NPDES, EMI, Envirostor, WDS, FINDS, and HAZNET databases. Western Colloid manufactures roofing and paving materials and has been at the site since 1980. Historic inspections, conducted by Oakland Office of Emergency Services and the Alameda County Department of Environmental Health, Hazardous Materials Division, have noted that the following chemicals have

been stored on site in 55-gallon steel drums: texanol ester alcohol, ethylene glycol, 1,1,1-trichloroethane, methyl ethyl ketone, xylene, waste oil, and troysanpolyphase AF1. A Preliminary Assessment was completed in January 2001 for the site. Environmental contaminants detected above EPA industrial soil Preliminary Remediation Goals (PRGs) at the Western Colloid site include carbazole up to 240 mg/kg, and benzo (a) anthracene as high as 15 mg/kg.

The assessment recommended No Further Action under CERCLA but that DTSC's Hazardous Waste Management Program continues oversight.

S.A. Russo Window Framing Inc. – 6925 San Leandro Street

The site is listed in the HAZNET, SLIC, HWT, PADS, and FINDS databases. S.A. Russo operated the subject site as a window frame assembly facility from 1949 to 2002. H2C2 purchased the property in 2002. A Phase I Environmental Site Assessment concluded in October 2000 that no further investigations at the site were warranted. Shortly after H2C2 purchased the site it conducted trenching activities that revealed the presence of various types of debris buried within the fill material covering the site. The debris included bricks and mortar, metal slag deposits, vehicle tires, and several water heater tanks. Soil and groundwater samples were subsequently collected at the site. Soil concentrations of TPH-D up to 5,100 mg/kg, TPH-MO up to 20,000 mg/kg, and kerosene up to 2,000 mg/kg, and lead up to 4,800 mg/kg were detected. Groundwater samples contained concentrations of TPH-D up to 22,000 µg/L, TPH-MO up to 100,000 µg/L, and kerosene up to 1,900 µg/L, and lead up to 15 µg/L. In 2003, site soils that contained greater than 5,000 mg/kg TPH-mo were excavated and removed. Areas that could not be excavated without compromising existing infrastructure at the site were not required to be excavated.

A Soil Management Plan was put into place which contains protocols for managing potential future contact with and/or exposure to subsurface soils in areas where residual or unknown contaminants may still exist at the site. The site was subsequently granted closure.

6815 San Leandro Street

The 6815 San Leandro Street Site is listed in the US Hist Auto Stat and HAZNET databases. Due to the site's listing as a historical auto station, the site should be evaluated for potential petroleum hydrocarbon impacts.

6825 San Leandro Street

The 6825 San Leandro Street Site is listed in the US Hist Auto Stat, HAZNET, and NPDES databases. Due to the site's listing as a historical auto station, the site should be evaluated for potential petroleum hydrocarbon impacts.

Firestone Store – 6601 San Leandro Street

The Firestone Store Site is listed in the HIST UST, CA FID UST, SWEEPS UST, and HAZNET databases. Due to the site's listing as having a historical UST, the site should be evaluated for potential petroleum hydrocarbon impacts.

Aero Quality Plating – 710 73rd Avenue

The site is listed in the RCRA SQG, HIST CORTESE, SLIC, LIENS, VCP, Envirostor, HWP, RCRA-TSDF, CERCLIS, CORRACTS, 2020 COR ACTION, FINDS, RCRA SQG, HAZNET, US Brownfields, CA BOND EXP. PLAN databases. From 1952 to 1963 the site was occupied by Currier Corporation which reportedly manufactured degreasing equipment and conducted metal stripping. Between 1958 and 1985, Aero Quality Plating Company operated an electroplating business on site. Operations included cleaning and

degreasing metal parts prior to plating with nickel, gold, silver, copper, cadmium, tin, zinc, or chromium. Aluminum anodizing also was reported. Between 1985 and 1988, DTSC and the U.S. EPA conducted inspections and removed all containerized waste left on site. Soil was excavated to a depth of one to two feet over two areas of the site, and backfilled with clean soil. Periodic groundwater monitoring has been conducted since 1994.

Shallow groundwater is impacted with tetrachloroethene (PCE), trichloroethene (TCE), and cis-1, 2-dichloroethene (cis-1, 2-DCE). Previous investigations have shown that groundwater deeper than approximately 35 feet bgs are likely not significantly impacted by contaminants of potential concern (COPCs). The maximum concentrations reported before 2008 are 3,400 µg/L PCE; 2,700 µg/L TCE; 1,900 µg/L DCE. Enhanced in-situ bioremediation and monitored natural attenuation have been employed at the site. Immediately down-gradient of the site is the UP Oakland Coliseum District (see below). Chlorinated VOCs contaminated groundwater from the UP Oakland Coliseum District has comingled with the contaminated groundwater plume from the Aero Quality Plating site.

Based on review of available documents on the EnviroStor website, groundwater monitoring at the site occurred between 1992 and 1996.

Union Pacific Oakland Coliseum – 700 73rd Avenue

The site is listed in the HIST CAL SITES, RESPONSE, CORTESE, Envirostor, FINDS, HAZNET, CERC-NFRAP databases. The land was acquired by Central Pacific Railroad in March 1895. Melrose Station occupied the southwest comer of the site. This depot building was retired in 1933 and removed. From September 1959 to March 1992, the site was operated as an auto salvage yard (Otto's Foreign Auto Salvage) under two successive tenants. A small building was located onsite (along the eastern boundary in the southern portion of the site) during operation as Otto's Foreign Auto Salvage. The site has been unoccupied since 1992. Site Investigation activities were conducted between 1998 and 2004, and concluded that the site soils and shallow groundwater beneath the site had been impacted with PCBs, VOCs, and petroleum hydrocarbons. Maximum groundwater concentrations of benzene, Aroclor 1254, TPH-D, and TPH-G have been detected at 49 µg/L, 140 µg/L, 390,000 µg/L, and 14,000 µg/L, respectively. In 2006 a soil removal action was initiated. Due to the presence of PCE in the soil beyond the excavation limits and concentrations in the excavated soil above the anticipated waste disposal criteria, the excavated soils were backfilled into the excavation. The remaining soil was graded over the site.

Currently, a Remedial Action Work Plan is being prepared for the site.

Off-Site Properties and Other Concerns

The following sites are located in the vicinity of the Coliseum BART Station TOD west of San Leandro Street and have been identified as having the potential to adversely affect environmental conditions on the site:

- 7001 Snell Street. The 7001 Snell Street Site is located approximately 110 feet east of Parcel AA2. The site is listed in the US Brownfields and FINDS databases. In 2009 a Phase II Environmental Site Assessment was conducted on the site. TPH-MO was detected in site soil samples ranging from 4.82 mg/kg to 5,680 mg/kg. Soluble lead concentrations of 16 milligrams per liter (mg/L) using Waste Extraction Test (WET) and 31 mg/L using Toxicity Leaching Characteristic Procedure (TCLP) methods were detected. Total Copper was also detected at 3,700 mg/kg. Grab groundwater samples detected concentrations of TPH-MO, cis-1,2-Dichloroethene, and MTBE of 302 µg/L, 0.99 µg/L, and 0.92 µg/L respectively.

- Coliseum Gardens a.k.a. Standard Iron and Metal – 801 69th Avenue. The Standard Iron and Metal site is located approximately 220 feet northeast of Parcel AA2. The site is listed in the CHMIRS, VCP, Envirostor, CERCLIS, FINDS, SPILLS 90, and HAZNET databases. The site is associated with the Coliseum Gardens Voluntary Cleanup Site. In January 2000, the DTSC inspected the site and collected soil samples from the eastern fence line including the northeast corner of the site as part of a Preliminary Assessment conducted for the EPA. Chromium, lead, and copper were detected above their respective residential PRGs. Additionally, VOCs were detected in the samples but the report did not specify which compounds or their concentrations. In 2001, the soils at the east fence line were removed to the underlying cement with no sampling to verify that all of the materials were removed. The excavation was then filled with concrete and sealed with asphalt to prevent future metals impact to the soil. Since 2001, several soil and groundwater investigations were conducted. Localized areas of soil and groundwater impacted with PCBs, benzo(a)pyrene, dieldrin, metals and TPH were identified. Soil vapor sampling conducted at the site detected elevated levels of methane. In October of 2004, approximately 6-inches of soil were removed from the site. Soil samples were collected following excavation activities, and analyzed for dieldrin. Following sampling, the site was graded lowering ground surface approximately 2 to 3 feet across the site. Another round of soil sampling was conducted subsequent to the site grading. Elevated dieldrin concentrations were again detected in site soils. In 2006, approximately 240 tons of soil were initially excavated from the site, followed by a second excavation removing approximately 1,150 cubic yards of soil. Approximately 375,000 gallons of ponded water were pumped from the excavations. During removal activities several underground structures were encountered and removed; including a previously undocumented UST. ORC was added to one area of the excavation prior to backfilling. Subsequent to the removal action, additional site investigations were conducted in 2006; including soil vapor sampling, off-site soil sampling (to confirm elevated concentrations of COCs left in place during excavation activities), and groundwater sampling. Groundwater samples did not detect COCs above site clean-up goals. Soil vapor samples detected benzene concentrations above the residential CHHLs. In 2007 an additional excavation was conducted to removal residual contamination along the property line. A total of approximately 38 tons of soil were excavated. Laboratory analyses of the confirmation soil samples from the excavation did not detect COCs above the site-specific clean-up goals, except one soil sample with an elevated PCB concentration. In 2007 the DTSC issued a Certification Letter stating that all appropriate response actions have been completed and no further action is required.
- Union Oil SS#3135 – 845 66th Avenue. The Union Oil SS#3135 site is located approximately 70 feet northwest of Parcel AA4. The site is listed in the CA FID UST, HIST CORTESE, LUST, Alameda County CS, SWEEPS UST, HAZNET, UST, Notify 65, US HIST Auto Stat, and HIST UST databases. Environmental investigation and assessment activities began at the site in 1988. Remedial activities conducted at the site include excavation of approximately 2,100 cubic yards of soil during tank removal and station upgrade activities, removal of approximately 25,000 gallons of groundwater during UST replacement and removal, an 8-hour dual-phase pilot test, and installing oxygen releasing compound on site. There are currently eleven monitoring wells installed at the site. Groundwater samples collected in December 2012 contained maximum concentrations of TPH-D of 480 µg/L, TPH-G of 970 µg/L, and MTBE of 8.9 µg/L. Groundwater flow direction is generally to the south/southeast. The site is currently under review for closure.
- Fruitvale Business Center – 915 66th Avenue. The Fruitvale Business Center site is located approximately 250 feet northeast of Parcel AA4. The site is listed in the CA FID UST, SWEEPS UST, HAZNET, NPDES, WMUDS/SWAT, HIST UST, and WDS databases. Due to the site's listing as having a UST, the site should be evaluated for potential petroleum hydrocarbon impacts.

Several of the current structures located on the site may date back to the 1950s. Due to the date of construction, the current structures should be evaluated for asbestos containing materials and lead based paint. Additionally, many areas with historic structures are found to have residual metals in soil around the perimeter of the structures from the flaking of lead-based paint.

Sports Neighborhood District

This site does not contain any Cortese List properties.

Several soil samples collected from the fill material during previously conducted environmental investigations in the vicinity have identified elevated contaminants of concern (COCs). These COCs may be related to previously conducted site operations exclusive to the land on which they were collected or may be indicative of a larger issue with the fill material used in the site area.

Science and Technology District

GMC Truck Center – 8099 S. Coliseum Way

The site is listed in the RCRA SQG, FINDS, HIST UST, LUST, Alameda County CS, HIST CORTESE, CA FID UST, SWEEPS UST, EMI databases. In 1993 four USTs were removed from the site. During UST removal activities impacted soils surrounding the USTs were excavated and disposed of off-site. Several site investigations were conducted between 1993 and 1997. Maximum soil concentrations of TPH-D, TPH-G, TPH-MO, and benzene were detected at 7,000, 8,400, 3,900, and 310,000 mg/kg, respectively. Maximum groundwater concentrations of TPH-G, TPH-D, TPH-MO, TPH as mineral spirits, and MTBE were detected at 780, 110,000, 170,000, 520,000, and 21 µg/L, respectively.

In 2011, Alameda County Environmental Health (ACEH) issued a letter stating that "your case is currently not in compliance with Alameda County Environmental Health's (ACEH) April 18, 2000 Final Notice of Violation" and that "the site appears uncharacterized, and reports documenting groundwater sampling have not been received."

Recent groundwater sampling data, conducted between 2010 and 2011, indicates the site is still impacted with TPH-D (maximum concentration 7,500 µg/L), TPH-MO (maximum concentration 3,600 µg/L), and MTBE (maximum concentration 18 µg/L).

CALTRANS Oakland Maintenance Station – 555 Hegenberger Road

The site is listed in the HIST CORTESE, LUST, Alameda County CS, RCRA SQG, FINDS databases. In 1994, the four USTs and associated product piping were excavated and removed from the site. Limited over-excavation was conducted of the tank pits due to obvious signs of contamination. Soil samples collected from the tank excavation were reported to have concentrations of TPH-G as high as 480 mg/kg, TPH-D at 380 mg/kg, O&G at 2,200 mg/kg, and benzene at 1.8 mg/kg. In 1995 five monitoring wells were installed on site. Groundwater monitoring was conducted between 1995 and 1996 and a single event in 1998. Annual groundwater monitoring resumed on site between March 2001 and May 2005. No groundwater sampling events were conducted between 2005 and September 2011. Groundwater sampling has resumed and is currently conducted on a semi-annual basis. Maximum concentrations of TPH-G, TPH-D, benzene, and MTBE from the most recent sampling event (3/21/13) were detected at 4,900, 1,000, 930, and ND<0.26 µg/L.

Open Space and Drainage

The following site is located within the immediate vicinity of Damon Slough and is identified as a potential environmental concern.

Cruise America – 796 66th Avenue

The site is listed in the US BROWNFIELDS, FINDS, HAZNET, CA FIDS UST, HIST CORTESE, LUST, and Alameda County CS, SWEEPS UST, and UST databases. Based on review of available documents on the EnviroStor website, depth to groundwater ranges from 3.5 to 8 feet below grade. Historical data indicates the groundwater flow direction trends to the southeast. From 1957 to 1988 the site was occupied by McGuire Hester, a construction company. Prior to 1956 the site was reportedly a slaughter and meat packing facility. In 1987, three USTs were removed from three separate tank pits. TPH-G and TPH-D was detected in soil samples collected from the tank cavities at concentrations up to 758 and 492 mg/kg, respectively. According to the EnviroStor website, groundwater observed in the excavations had a visible hydrocarbon sheen. A waste oil tank remains on site. Between 1987 and 2001, several site investigations and remedial actions were conducted on site; including the additional excavation of contaminated soils in the vicinity of one of the former USTs. During this time period, concentrations of TPH-D, TPH-G, and TPH-MO were detected at concentrations up to 1,750, 270, and 32,000 mg/kg, respectively. Groundwater samples collected contained TPH-MO, TPH-D, and MTBE at concentrations up to 60,000, 2,300, and 13,000 µg/L, respectively. Furthermore, during excavation activities buried timbers with creosote were uncovered.

In 2001 an additional UST was removed from the site. Soil samples collected from the tank cavity dispenser area contained TPH-G concentrations up to 280 mg/kg. Benzene and MTBE were detected at concentrations of up 53 and 13 mg/kg, respectively. TPH-G and MTBE were detected in groundwater collected from the tank pit excavation at 44,000 and 42,000 µg/L, respectively. In 2004 a twelve-point ozone sparging system was installed on site. The system was operated through 2006. In 2008 additional soil borings were advanced on site to determine the effectiveness of the system. Groundwater and soil sampling results indicated significant TPH-G, MTBE, and TBA was still present. Due to the presence of contaminants, additional excavation was performed. During excavation activities a debris layer consisting of black stained soil, trash, wood, and cardboard was observed at approximately 6.5 fbg. According to the EnviroStor website, the debris and stained soil appears to have been placed with the fill material that was used to fill in low lying wetlands at the site prior to 1956.

In 2009 the Alameda County Environmental Health (ACEH) issued a no further action letter, however a Land Use Limitation appears to be in place at the property.

Adjacent to the Project Area and Other Potential Concerns

The following sites are located in the vicinity of Damon Slough, outside of the Project Area, and have been identified as having the potential to adversely affect environmental conditions on the Coliseum District.

- Allied Crane Maintenance – 727 66th Avenue. The site is listed in the CERC-NFRAP, HAZNET, HIST US Auto Stat, HIST CORTESE, LUST, Alameda County CS, CA FID UST, SWEEPS UST databases and is located approximately 110 feet north/northwest of the Coliseum District. According to the EnviroStor website, a UST was removed from the site. However, a tank removal report or analytical data for site soils or groundwater is not yet available. Alameda County Environmental Health (ACEH) transferred oversight of the project to the San Francisco Regional Water Quality Control Board in 2012. Historical depth to groundwater and groundwater flow direction for the site is unknown at this time.

- Peck and Hillis Company – 701 66th Avenue. The site is listed in the HAZNET, LUST, and HIST CORTESE database and is located approximately 110 yards north of the Coliseum District. There is currently no information available on the Peck and Hillis Company Site; however, based on the database listings the site likely has petroleum hydrocarbon impacts to soils and/or groundwater.
- Additionally, EDR databases identified the site at 555 66th Avenue (approximately 110 feet north/northwest of the Coliseum District) as previously containing an auto station (US HIST Auto Stat.).

Historic structures were identified on the site in aerial photographs beginning in 1939. Several of the current structures located on the site may date back to the 1960s. Due to the date of construction, the current structures should be evaluated for asbestos containing materials and lead based paint. A number of these structures were industrial in nature, and therefore may have potentially impacted site soils and/or groundwater through their various industrial processes. Many areas with historic structures are also found to have residual pesticides or metals in soil around the perimeter of the structures from pest control spraying and the flaking of lead-based paint.

Other Cortese List Properties within the Project Area

Sub-Area B (not including the new Arena Site)

Locations of relevant sites in Sub-Area B are presented in **Figure 4.7-2**. According to the EDR and EnviroStor databases, Sub-Area B contains the following sites deemed to be a potential environmental concern (note that two sites within Sub-Area B are covered under the Coliseum District above):

Hooton Property/Port of Oakland/Lincoln Property, 7307 Edgewater Drive

This property is listed on the SLIC, Alameda County CS, HAZNET, RCRA SQG, FINDS, EMIHIST CORTESE and LUST databases. Site soil and groundwater are impacted with heavy range hydrocarbons, BTEX, chlorinated solvents, and PAHs. The case is listed as closed as of 1998.

City of Oakland Municipal Service Center, 7101 Edgewater Drive

This parcel is listed on the HAZNET, EMI, HIST CORTESE, LUST, SLIC, Alameda County CS, FINDS, UST, WDS databases. Site soil and groundwater are impacted with TPH-G, benzene, TBA, MTBE, and other fuel oxygenates. The site is currently open and undergoing remediation.

Other Site Concerns within Sub-Area B

Soil investigations conducted on several sites indicate the possible contamination of fill material underlying portions of Sub-Area B. Several buildings located within Sub-Area B were constructed in the 1960s; therefore structures designated for demolition as part of the project should be evaluated for potential asbestos containing materials and lead based paint.

Sub-Area C

Within Sub-Area C the following relevant sites are present; 9 LUST sites, 1 SLIC site and 5 historical auto station facilities, as described below. Locations of relevant sites in Sub-Area C are presented in **Figure 4.7-3**. According to the EDR and EnviroStor databases, Sub-Area C contains the following sites deemed to be a potential environmental concern:

Goodyear Tire and Rubber Company, 7727 Oakport Street

This parcel is listed on the HAZNET, FINDS, HIST CORTESE, LUST, Alameda County CS, CA FID UST, SWEEPS UST, HIST UST databases. Site soil and groundwater impacted with heavy range hydrocarbons. Additionally, TCE, bis (2-ethyhexyl)phthalate, and methylnaphthalene found in site soils prior to over excavation activities. Case granted closure in 1994.

7717 Oakport Street

This parcel is listed on the US Hist Auto Stat database.

Edgewater Park Plaza, 7700 Edgewater Drive

This parcel is listed on the US Hist Auto Stat database.

Edgewater Corp Center, 700 Edgewater Drive

This parcel is listed on the SLIC database. No other information available.

Peak Engineering Inc./S & S Trucking/S N Sands Corp DBA S & S Trucking, 477 Roland Way

This parcel is listed on the HAZNET, RCRA SQG, FINDS, HWT databases. The HAZNET listing is for contaminated soils from site cleanup. No additional information is available.

Ardenbrook, 7901 Oakport Street

This parcel is listed on the US Hist Auto Stat database.

Ryder Truck Rental, 8001 Oakport Street

This parcel is listed on the HAZNET, RCRA SQG, FINDS, HIST CORTESE, LUST, Alameda County CS, CA FIDS UST, HIST UST, SWEEPS UST databases. Site soils and groundwater impacted with TPH-G, TPH-D, TPH-MO, and BTEX. Site granted closure in 2000.

Superior Tiles, 7801 Oakport Street

This parcel is listed on the HIST CORTESE, LUST, Alameda County CS, CA HIST Auto Stat, HAZNET databases. Site soils and groundwater impacted with TPH-G and BTEX. Site granted closure in 1994.

TD Rowe, 8134 Capwell Drive

This parcel is listed on the CA FID UST, SWEEPS UST, LUST, Alameda County CS, HAZNET databases. Residual concentrations of TPH-G and MTBE remain in site groundwater and soil. The case is listed as closed as of 2006. A limited land use restriction appears to be in place.

Stanley Custom Care, 7920 Capwell Drive

This parcel is listed on the US Hist Auto Stat database.

BOC Group Inc./President Tuxedo, 8383 Capwell Drive

This parcel is listed on the HIST CORTESE, LUST, Alameda County CS, HAZNET databases. Site soil and groundwater impacted with petroleum hydrocarbons and BTEX. Case granted closure in 1993.

Delta Lines Inc./ California Motor Express, 333 Hegenberger Road

This parcel is listed on the US Hist Auto Stat database.

SITE LOCATIONS

1. GOODYEAR TIRE CO., 7727 OAKPORT STREET
2. 7717 OAKPORT STREET
3. EDGEWATER PARK PLAZA, 7700 EDGEWATER DRIVE
4. EDGEWATER CORP. CENTER, 700 EDGEWATER DRIVE
5. PEAK ENGINEERING INC., 477 ROLAND WAY
6. ARDENBROOK, 7901 OAKPORT STREET
7. RYDER TRUCK RENTAL, 8001 OAKPORT STREET
8. SUPERIOR TILES, 7801 OAKPORT STREET
9. TD ROWE, 8134 CAPWELL DRIVE
10. STANLEY CUSTOM CARE 7920 CAPWELL DRIVE
11. BOC GROUP INC., 8383 CAPWELL DRIVE
12. DELTA LINES INC., 333 HEGENBERGER ROAD
13. PACIFIC BELL, 295 HEGENBERGER ROAD
14. SHELL #13-561, 285 HEGENBERGER ROAD
15. CHEVRON #9-1851, 451 HEGENBERGER ROAD
16. UNION OIL SS#5043, 449 HEGENBERGER ROAD
17. 280 HEGENBERGER ROAD
18. AGE MUFFLER, 300/444 HEGENBERGER ROAD
19. 294 HEGENBERGER ROAD
20. UNION BANK, 460 HEGENBERGER ROAD

Figure 4.7-3
Cortese List, Sub-Area C

Pacific Bell (Q3-650)/Pacific Bell/Penske Truck Leasing/Nestle Waters of North America/Rollins Leasing Corp./Rollins Leasing Corp. #141-B/Rollins Truck Leasing, 295 Hegenberger Road

This parcel is listed on the RCRA-SQG, FINDS, HIST CORTESE, LUST, Alameda County CS, HAZNET, UST, CA FIDS UST, SWEEPS UST databases. Site soil and groundwater impacted with heavy range hydrocarbons. Case closed in 1996.

Shell #13-5691, 285 Hegenberger Road

This parcel is listed on the HAZNET, UST, RCRA-SQG, HIST CORTESE, LUST, EMI, US HIST Auto Stat, Alameda County CS, FINDS, CA FIDS UST, HIST UST databases. Site soils and groundwater impacted with TPH-D, TPH-G, TPH-MO, BTEX, and MTBE. Site granted closure in 2013. A limited land use restriction appears to be in place. Based on the most recent groundwater monitoring report (01/05/12), groundwater flow direction is to the northwest.

Chevron #9-1851, 451 Hegenberger Road

This parcel is listed on the HAZNET, US HIST Auto Stat, CA FID UST, UST, SWEEPS UST, LUST, HIST CORTESE, Alameda County CS, HIST UST databases. Site soils and groundwater impacted with TPH-D, TPH-G, TPH-MO, BTEX, and MTBE.

Site is under review for closure. Based on the most recent groundwater monitoring report (02/28/13), groundwater flow direction is to the southwest.

Union Oil SS#5043, 449 Hegenberger Road

This parcel is listed on the HIST UST, HAZNET, US HIST Auto Stat, HIST CORTESE, LUST, Alameda County CS, HIST UST, UST, CHMIRS databases. Site soils and groundwater impacted with TPH-D, TPH-G, TPH-MO, BTEX, and MTBE. Based on the most recent groundwater monitoring report (01/15/13), groundwater flow direction is to the southeast.

Off-Site Properties and Other Concerns

The following sites are located adjacent to Sub-Area C and may pose a potential environmental concern:

- 280 Hegenberger Road (approximately 200 feet southeast) – Listed on the US Hist Cleaners database.
- AGE Muffler Wheel Aligning & Brake Shop/A G E Service/Precision Trucking School, 300/444 Hegenberger Road (approximately 150 feet southeast) –Listed on the US Hist Auto Stat, HAZNET, LUST, HIST CORTESE, Alameda County CS databases. Site soils and groundwater impacted with TPH-D, TPH-G, and BTEX. Groundwater flow direction for the site is generally to the northwest.
- 294 Hegenberger Road (approximately 200 feet southeast) – Listed on the US Hist Auto Stat database.
- Union Bank, 460 Hegenberger Road (approximately 300 feet northeast) – Listed on the RCRA-SQG, FINDS, HIST CORTESE, LUST, CA FID UST, Alameda County CS, HIST UST, SWEEPS UST, ENF, HAZNET databases. Site soils and groundwater impacted with TPH-D, TPH-G, TPH-MO, and BTEX. Site was granted closure in 1994. Site specific groundwater gradient information was never calculated for the site.

Soil investigations conducted on several sites indicate the possible contamination of fill material underlying portions of Sub-Area C. Several buildings located within Sub-Area C were constructed in the

1960s; therefore structures designated for demolition as part of the project should be evaluated for potential asbestos containing materials and lead based paint.

Sub-Area D

Within Sub-Area D the following relevant sites are present; 3 LUST sites and 1 Voluntary Cleanup site, as described below. Locations of relevant sites in Sub-Area D are presented in **Figure 4.7-4**. According to the EDR and EnviroStor databases, Sub-Area D contains the following sites deemed to be a potential environmental concern:

United Parcel Services, 8400 Pardee Drive

This parcel is listed on the NPDES, LUST, Alameda County CS, CHMIRS, WDS, UST, RCRA – SQG, CA FID UST, SWEEPS UST, HIST UST databases. Site soils and groundwater impacted with TPH-G, TPH-D, and BTEX. The groundwater flow direction for the site is generally to the south southwest.

Marriot Courtyard, 265 Hegenberger Road

This parcel is listed on the CA FIDS UST, SWEEPS UST, HIST UST, LUST, HIST CORTESE, SLIC, Alameda County CS databases. Site soil and groundwater potentially impacted with TPH-G, BTEX, Chlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, and total metals. The site was granted closure in 1998.

Federal Express, 8455 Pardee Drive

This parcel is listed on the NPDES, LUST, Alameda County CS, WDS databases. Site soils and groundwater impacted with TPH-G, TPH-D, and BTEX. The site was granted closure in 1993.

Hegenberger Annex Site, 77 Hegenberger Road

This parcel is listed on the VCP database. Fill material at the site contains elevated concentrations of PAHs and total copper, lead, molybdenum, and zinc at concentrations greater than background levels. Additionally, elevated TPH-D and TPH-MO detected in several soil and groundwater samples from the site. The site is listed as No Further Action as of 2005.

Off-Site Properties and Other Concerns

The following sites are located adjacent to Sub-Area D and may pose a potential environmental concern:

- General Tire, 240 Hegenberger Road (approximately 150 feet east) – Listed on the CORTESE, LUST, CA FID UST, HIST UST, US HIST Auto Stat databases. No information available. Case closed in 1995.
- Diablo Cellular, 106 – 110 Hegenberger Road (approximately 150 feet southeast). Site soils and groundwater potentially impacted with TPH-G, BTEX, and lead. Site granted closure in 2001.
- MOIA, Sierra Academy, 9465 Earhart Road (approximately 280 feet southwest). Site soil and groundwater potentially impacted with TPH-G, BTEX, and MTBE. Site granted closure in 1999.
- AMERIFLIGHT, 9171 Earhart Road (approximately 280 feet southwest of Parcel D2). Site soil and groundwater potentially impacted with TPH-Jet Fuel, TPH-AV Gas, lead, BTEX, and MTBE. Site granted closure in 2004.

Soil investigations conducted on several sites indicate the possible contamination of fill material underlying portions of Sub-Area D. Several buildings located within Sub-Area D were constructed in the 1960s; therefore structures designated for demolition as part of the project should be evaluated for potential asbestos containing materials and lead based paint.

SITE LOCATIONS

1. UNITED PARCEL SERVICE, 8400 PARDEE DRIVE
2. MARRIOT COURTYARD, 265 HEGENBERGER ROAD
3. FEDERAL EXPRESS, 8455 PARDEE DRIVE
4. HEGENBERGER ANNEX SITE, 77 HEGENBERGER ROAD
5. GENERAL TIRE, 240 HEGENBERGER ROAD
6. DIABLO CELLULAR, 106–110 HEGENBERGER ROAD
7. MOIA, 9465 EARHART ROAD
8. AMERIFLIGHT, 9171 EARHART ROAD

Figure 4.7-4
Cortese List, Sub-Area D

Sub-Area E

Within the Sub-Area E there is 1 LUST site present, as described below. Locations of relevant sites in Sub-Area E are presented in **Figure 4.7-2**. According to the EDR and EnviroStor databases, Sub-Area E contains the following site deemed to be a potential environmental concern:

EBMUD, 5597 Oakport Street

This parcel is listed on the AST, HIST CORTESE, LUST, Alameda County CS, CHMIRS databases. Site soil and groundwater are potentially impacted with TPH-G, TPH-D, and BTEX.

The case is listed as closed as of 1996.

Off-Site Properties and Other Concerns

Several buildings located within Sub-Area E were constructed in the 1950s and 1960s; therefore structures designated for demolition as part of the project should be evaluated for potential asbestos containing materials and lead based paint.

Other Hazard and Hazardous Materials Issues

Schools and Daycare Facilities

CEQA establishes special requirements for certain projects near schools to ensure that potential health impacts resulting from exposure to hazardous materials, wastes, and substances will be carefully examined and disclosed in a negative declaration or EIR, and that the lead agency will consult with other agencies in this regard.

There are four schools located within the Project Area, all within Sub-Area C: ITT Technical Institute, Embry Riddle Aeronautical University, Oakland Aviation High School, and CPR For Life Training and Health Care. There are two grade schools and one daycare center located outside but within ¼-mile of the Project Area: Lighthouse Community Charter School, ACTS Christian Academy, and Supporting Future Growth. Lighthouse Community Charter School is located at 444 Hegenberger Road, approximately 0.10 miles east of Sub-Area C. The ACTS Christian Academy is located at 1034 66th Avenue, approximately 0.20 miles northeast of Sub-Area A. Supporting Future Growth is located at 6865 Leona Creek Drive, and approximately 0.10 miles north of Sub-Area A. Aviation Institute of Maintenance is located at 9636 Earhart Road, approximately 0.05 miles southwest of the Sub-Area D.

Airports

Aviation safety hazards can result if projects are located in the vicinity of airports. The nearest public airport to the Project Area is Oakland International Airport, located approximately one thousand feet southwest of Sub-Area D. There are no private airstrips in the vicinity.

Wildland Fires

The California Department of Forestry and Fire Protection (CAL FIRE) is required by law to map areas of significant fire hazard based on fuels, terrain, weather, and other relevant factors (PRC 4201-4204 and Govt. Code 51175-89). Factors that increase an area's susceptibility to fire hazards include slope, vegetation type and condition, and atmospheric conditions. The CAL FIRE Alameda County Fire Hazard Severity Zone Map does not identify any very high or high fire hazard zones in the Project Area (CAL FIRE, 2007).

Regulatory Setting

Adoption and development under the Specific Plan is subject to government health and safety regulations applicable to the transportation, use, and disposal of hazardous materials. This section provides an overview of the health and safety regulatory framework that is applicable to the Project Area.

Federal

Hazardous Materials Management

The primary federal agencies with responsibility for hazardous materials management include the USEPA, U.S. Department of Labor Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation (DOT). Federal laws, regulations, and responsible agencies are summarized below and are discussed in detail in this section:

Hazardous Materials Incidents

The National Priorities List (NPL) is a compilation of over 1,200 sites for priority cleanup under the Federal Superfund Program.

- The Proposed National Priorities List identifies sites considered for NPL listing.
- Comprehensive Environmental Response, Compensation and Liability Information System – Contains data on potentially hazardous waste sites that have been reported to the USEPA by California. CERCLIS contains sites which are either proposed or on the NPL and sites which are in the screening and assessment phase.
- CERCLIS No Further Remedial Action Planned (CERC – NFRAP) – CERC-NFRAP are archived sites which indicate an assessment of the site has been completed and that the EPA has determined no further steps will be taken to list the site on NPL.
- Formerly Used Defense Sites Properties (FUDS) – Includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Hazardous Materials Management

The Community Right to Know Act of 1986 imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that materials are accidently released

Hazardous Waste Handling

Under the Resource Conservation and Recovery Act (RCRA) the US EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The Hazardous and Solid Waste Act amended RCRA in 1984. The amendments specifically prohibit the use of certain techniques for the disposal of hazardous waste. The Hazardous Wastes and Substances Site List (CORTESE) is an historical compilation of sites listed in the LUST, SWF/LF, and Cal Sites databases. It is no longer maintained as an active database.

Hazardous Materials Transportation

The US Department of Transportation (DOT) has the regulatory responsibility for the safe transportation of hazardous materials. The DOT regulations govern all means of transportation except packages shipped by mail (49 CFR). The US Postal Service (USPS) regulations govern the transportation of hazardous materials shipped by mail.

Occupational Safety

The Occupational Safety and Health Act of 1970 (Fed/OSHA) sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29CFR).

Structural and Building Components

The Toxic Substances Control Act (TSCA) regulates the use and management of PCBs in electrical equipment, and sets forth detailed safeguards to be followed during the disposal of such items. The US EPA monitors and regulates hazardous materials used as building components and their effects on human health.

State and local agencies often have either parallel or more stringent regulations than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of the law and its enforcement are discussed under either the state or local agency section.

State

In January 1996, the California Environmental Protection Agency (Cal EPA) adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements: hazardous waste generators and hazardous waste on-site treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level. The Certified Unified Program Agency (CUPA) is the local agency that is responsible for the implementation of the Unified Program. In Oakland, the Alameda County Department of Environmental Health (ACDEH) and the Oakland Fire Department are the designated CUPA agencies for all businesses.

Hazardous Materials Management

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored on site;
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher courses.

The California Hazardous Materials Incident Report System (CHMIRS) provides information regarding spills and other incidents gathered from the California Office of Emergency Services.

Hazardous Waste Handling

The DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely.

Under the federal Resource Conservation and Recovery Act of 1976 (RCRA) described above, individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the state program is at least as stringent as federal RCRA requirements. In California, the DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

Hazardous Materials Transportation

The State of California has adopted DOT regulations for the intrastate movement of hazardous materials. State regulations are contained in Title 26 of the California Code of Regulations (CCR). In addition, the State of California regulates the transportation of hazardous waste originating in the state and passing through the state (26 CCR). Both regulatory programs apply in California. The two state agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans).

Occupational Safety

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the CFR. Cal/OSHA standards are generally more stringent than federal regulations.

Cal/OSHA regulations (8 CCR) concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, and communicating hazard information relating to hazardous substances and their handling. The hazard communication program also requires that Materials Safety Data Sheets (MSDS) be available to employees, and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and training in emergency evacuation).

Cal/OSHA (8 CCR), like Fed/OSHA (29 CFR), includes extensive, detailed requirements for worker protection applicable to any activity that could disturb asbestos-containing materials, including

maintenance, renovation, and demolition. These regulations are also designed to ensure that persons working near the maintenance, renovation, or demolition activity are not exposed to asbestos.

Emergency Response

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES), which coordinates the responses of other agencies, including Cal EPA, CHP, CDFG, the San Francisco Bay RWQCB, and the Oakland Fire Department (OFD). The OFD provides first response capabilities, if needed, for hazardous materials emergencies within the Project Area.

Structural and Building Components

Adoption and development under the proposed Specific Plan could include demolition of structures which, due to their age, may contain asbestos, PCBs, or lead and lead-based paint. In addition, removal of existing aboveground tanks or USTs may be required.

Asbestos

State laws and regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers; and require notice to federal and local governmental agencies prior to beginning renovation or demolition that could disturb asbestos. Asbestos represents a human health risk when asbestos fibers become airborne (friable) and are inhaled into the lungs.

The Bay Area Air Quality Management District (BAAQMD) is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition or abatement work. Cal/OSHA regulates asbestos removal to ensure the health and safety of workers removing asbestos containing materials and also must be notified of asbestos abatement activities.

Polychlorinated Biphenyls (PCBs)

As previously discussed, PCBs are organic oils that were formerly placed in many types of electrical equipment and in fluorescent lighting ballasts. PCBs are highly persistent in the environment and are toxic. In 1979, the USEPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain existing PCB-containing equipment. The use and management of PCBs in electrical equipment is regulated pursuant to the Toxic Substances Control Act (40 CFR). Fluorescent lighting ballasts that contain PCBs, regardless of size and quantity, are regulated as hazardous waste and must be transported and disposed of as hazardous waste.

Lead and Lead-Based Paint

The CCR, Title 22, considers waste soil with concentrations of lead to be hazardous if it exceeds a total concentration of 1,000 ppm and a soluble concentration of 5 ppm. Both the federal and California OSHAs regulate all worker exposure during construction activities that involve lead based paint. The Interim Final Rule found in 29 CFR Part 1926.62 covers construction work where employees may be exposed to lead during such activities as demolition, removal, surface preparation for re-painting, renovation, clean up and routine maintenance. The OSHA-specified method of compliance includes

respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, training, etc.

Local

Soil and Groundwater Contamination

In Alameda County, remediation of contaminated sites is performed under the oversight of the ACDEH and the San Francisco Bay RWQCB. The ACDEH implements a local oversight program under contract with the SWRCB to provide regulatory oversight of the investigation and cleanup of soil and groundwater contamination from leaking petroleum USTs and aboveground storage tanks. At sites where contamination is suspected or known to have occurred, the project sponsor is required to perform a site investigation and prepare a remediation plan, if necessary. For typical development projects, actual site remediation is completed either before or during the construction phase of the project. Site remediation or development may be subject to regulation by other agencies. As noted above, several properties within the Project Area have contaminated soil and groundwater which is currently subject to oversight by ACDEH. Future investigation and remediation of soil or groundwater contamination that is known, or has not yet been identified, would be subject to oversight by ACDEH.

- Proposition 65 Records (Notify 65) – This database maintained by the State Water Resources Control Board (SWRCB), contains facility notifications about any release that could impact drinking water and thereby expose the public to potential health risk.
- State Response Site (RESPONSE) – This database identifies confirmed release sites where the DTSC is involved in remediation, either in a lead or oversight capacity.

Alameda County Hazardous Waste Management Program

Under the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program, the ACDEH is certified by the DTSC to implement the following programs:

- Hazardous Materials Management Plan and Inventory (HMMP) and the Hazardous Materials Business Plan (HMBP);
- Risk Management Program (RMP);
- UST program;
- Spill Prevention, Control and Countermeasure (SPCC) Plan for aboveground storage tanks;
- Hazardous waste generators; and
- On-site hazardous waste treatment (tiered permit)

City of Oakland General Plan

The Safety Element of the City of Oakland General Plan contains the following policies pertaining to hazards and hazardous materials with potential relevance to adoption and development under the Specific Plan:

- Hazardous Materials, Policy HM-1: Minimize the potential risks to human and environmental health and safety associated with the past and present use, handling, storage and disposal of hazardous materials.

- *Action HM-1.2:* Continue to enforce provisions under the zoning ordinance regulating the location of facilities which use or store hazardous materials.
- *Action HM-1.4:* Continue to participate in the Alameda County Waste Management Authority and as a participant, continue to implement policies under the county's hazardous-waste management plan to minimize the generation of hazardous wastes.
- *Action HM-1.6:* Through the Urban Land Redevelopment program, and along with other participating agencies, continue to assist developers in the environmental cleanup of contaminated properties.
- *Action HM-1.7:* Create and maintain a database with detailed site information on all brownfields and contaminated sites in the city.

- Hazardous Materials, Policy HM-3: Seek to prevent industrial and transportation accidents involving hazardous materials, and enhance the city's capacity to respond to such incidents.
  - *Action HM-3.1:* Continue to enforce regulations limiting truck travel through certain areas of the city to designated routes, and consider establishing time based restrictions on truck travel on certain routes to reduce the risk and potential impact of accidents during peak traffic hours.
  - *Action HM-3.4:* Continue to rely on, and update, the city's hazardous materials area plan to respond to emergencies related to hazardous materials

Oakland Municipal Code

To protect sensitive receptors from public health effects from a release of hazardous substances, the Oakland Municipal Code, Title 8 Section 42.105 allows the City, at its discretion, to require facilities that handle hazardous substances within 1,000 feet of a residence, school, hospital, or other sensitive receptors to prepare a Hazardous Materials Assessment Report and Remediation Plan (HMARRP).

The HMARRP must include public participation in the planning process, along with the following requirements:

- identify hazardous materials used and stored at the property and the suitability of the site;
- analyze off-site consequences that could occur as a result of a release of hazardous substances (including fire);
- include a health risk assessment; and
- identify remedial measures to reduce or eliminate on-site and off-site hazards.

Standard Conditions of Approval

The City's Standard Conditions of Approval (SCAs) relevant to hazards and hazardous materials are listed below for reference. If the Coliseum Area Specific Plan is approved by the City, all applicable SCAs would be incorporated into the Specific Plan, adopted as conditions of approval, and required of the adoption and development under the Specific Plan, as applicable, to help ensure less-than-significant impacts associated with hazards and hazardous materials. The SCAs are incorporated and required as part of the Specific Plan, so they are not listed as mitigation measures.

These Development Standards apply to all construction projects:

> **SCA Haz-1: Hazards Best Management Practices**. Prior to the commencement of demolition, grading, or construction. The project applicant and construction contractor shall ensure that construction of Best

Management Practices (BMPs) is implemented as part of construction to minimize the potential negative effects to groundwater and soils. These shall include the following:

a. Follow manufacturers' recommendations on use, storage, and disposal of chemical products used in construction;

b. Avoid overtopping construction equipment fuel gas tanks;

c. During routine maintenance of construction equipment, properly contain and remove grease and oils;

d. Properly dispose of discarded containers of fuels and other chemicals.

e. Ensure that construction would not have a significant impact on the environment or pose a substantial health risk to construction workers and the occupants of the proposed development. Soil sampling and chemical analyses of samples shall be performed to determine the extent of potential contamination beneath all UST's, elevator shafts, clarifiers, and subsurface hydraulic lifts when on-site demolition, or construction activities would potentially affect a particular development or building.

f. If soil, groundwater or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notification of regulatory agency(ies) and implementation of the actions described in the City's Standard Conditions of Approval, as necessary, to identify the nature and extent of contamination. Work shall not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.

These Development Standards apply to projects with asbestos in structures:

SCA Haz-2: Asbestos Removal in Structures. Prior to issuance of a demolition permit. If asbestos-containing materials (ACM) are found to be present in building materials to be removed, demolition and disposal, the project applicant shall submit specifications signed by a certified asbestos consultant for the removal, encapsulation, or enclosure of the identified ACM in accordance with all applicable laws and regulations, including but not necessarily limited to: California Code of Regulations, Title 8; Business and Professions Code; Division 3; California Health & Safety Code 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended.

These Development Standards apply: a) to all projects that include the redevelopment or reuse of historically industrial or commercial buildings; b) if the site has been identified in City records for hazardous materials, such as the Permit Tracking System (PTS); or c) if the site has been identified on the State Cortese List:

SCA Haz-3: Site Review by the Fire Services Division. *Prior to the issuance of demolition, grading or building permit*. The project applicant shall submit plans for site review and approval to the Fire Prevention Bureau Hazardous Materials Unit. Property owner may be required to obtain or perform a Phase II hazard assessment.

SCA Haz-4: Phase I and/or Phase II Reports. *Prior to issuance of a demolition, grading, or building permit*. Prior to issuance of demolition, grading, or building permits the project applicant shall submit to the Fire Prevention Bureau, Hazardous Materials Unit, a Phase I environmental site assessment report, and a Phase II report if warranted by the Phase I report for the project site. The reports shall make recommendations for remedial action, if appropriate, and should be signed by a Registered Environmental Assessor, Professional Geologist, or Professional Engineer.

SCA Haz-5: Lead-based Paint/Coatings, Asbestos, or PCB Occurrence Assessment. *Prior to issuance of any demolition, grading or building permit*. The project applicant shall submit a comprehensive assessment report to the Fire Prevention Bureau, Hazardous Materials Unit, signed by a qualified environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACM), lead-based paint, and any other building materials or stored materials classified as hazardous waste by State or federal law.

SCA Haz-6: Environmental Site Assessment Reports Remediation. *Prior to issuance of any demolition, grading or building permit*. If the environmental site assessment reports recommend remedial action, the project applicant shall:

a. Consult with the appropriate local, State, and federal environmental regulatory agencies to ensure sufficient minimization of risk to human health and environmental resources, both during and after construction, posed by soil contamination, groundwater contamination, or other surface hazards including, but not limited to, underground storage tanks, fuel distribution lines, waste pits and sumps.

b. Obtain and submit written evidence of approval for any remedial action if required by a local, State, or federal environmental regulatory agency.

c. Submit a copy of all applicable documentation required by local, State, and federal environmental regulatory agencies, including but not limited to: permit applications,

d. Phase I and II environmental site assessments, human health and ecological risk assessments, remedial action plans, risk management plans, soil management plans, and groundwater management plans.

SCA Haz-7: Lead-based Paint Remediation. *Prior to issuance of any demolition, grading or building permit*. If lead-based paint is present, the project applicant shall submit specifications to the Fire Prevention Bureau, Hazardous Materials Unit signed by a certified Lead Supervisor, Project Monitor, or Project Designer for the stabilization and/or removal of the identified lead paint in accordance with all applicable laws and regulations, including but not necessarily limited to: Cal/OSHA's Construction Lead Standard, 8 CCR1532.1 and DHS regulation 17 CCR Sections 35001 through 36100, as may be amended.

SCA Haz-8: Other Materials Classified as Hazardous Waste. *Prior to issuance of any demolition, grading or building permit*. If other materials classified as hazardous waste by State or federal law are present, the project applicant shall submit written confirmation to Fire Prevention Bureau, Hazardous Materials Unit that all State and federal laws and regulations shall be followed when profiling, handling, treating, transporting and/or disposing of such materials.

SCA Haz-9: Health and Safety Plan per Assessment. *Prior to issuance of any demolition, grading or building permit*. If the required lead-based paint/coatings, asbestos, or PCB assessment finds presence of such materials, the project applicant shall create and implement a health and safety plan to protect workers from risks associated with hazardous materials during demolition, renovation of affected structures, and transport and disposal.

SCA Haz-10: Best Management Practices for Soil and Groundwater Hazards. The project applicant shall implement all of the following Best Management Practices (BMPs) regarding potential soil and groundwater hazards:

a. Soil generated by construction activities shall be stockpiled onsite in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state and federal agencies laws, in particular, the Regional Water Quality Control Board (RWQCB) and/or the Alameda County Department of Environmental Health (ACDEH) and policies of the City of Oakland.

b. Groundwater pumped from the subsurface shall be contained onsite in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies of the City of Oakland, the RWQCB and/or the ACDEH. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building (pursuant to the Standard Condition of Approval regarding Radon or Vapor Intrusion from Soil and Groundwater Sources);

c. Prior to issuance of any demolition, grading, or building permit, the applicant shall submit for review and approval by the City of Oakland, written verification that the appropriate federal, state or county oversight authorities, including but not limited to the RWQCB and/or the ACDEH, have granted all required clearances and confirmed that the all applicable standards, regulations and conditions for all previous contamination at the site. The applicant also shall provide evidence from the City's Fire Department, Office of Emergency Services, indicating compliance with the Standard Condition of Approval requiring a Site Review by the Fire Services Division pursuant to City Ordinance No. 12323, and compliance with the Standard Condition of Approval requiring a Phase I and/or Phase II Reports.

These Development Standards apply to all construction projects that include: a) habitable space below the ground; and/or b) the redevelopment or reuse of historically industrial or commercial buildings; or c) soil and/or groundwater hazards:

SCA Haz-11: Radon or Vapor Intrusion from Soil or Groundwater Sources. Ongoing. The project applicant shall submit documentation to determine whether radon or vapor intrusion from the groundwater and soil is located on-site as part of the Phase I documents. The Phase I analysis shall be submitted to the Fire Prevention Bureau, Hazardous Materials Unit, for review and approval, along with a Phase II report if warranted by the Phase I report for the project site. The reports shall make recommendations for remedial action, if appropriate, and should be signed by a Registered Environmental Assessor, Professional Geologist, or Professional Engineer. Applicant shall implement the approved recommendations.

These Development Standards apply to all projects that involve the handling, storage, or transportation of hazardous materials on-site.

SCA Haz-12: Hazardous Materials Business Plan. Prior to issuance of a business license. The project applicant shall submit a Hazardous Materials Business Plan for review and approval by Fire Prevention Bureau, Hazardous Materials Unit. Once approved this plan shall be kept on file with the City and will be updated as applicable. The purpose of the Hazardous Business Plan is to ensure that employees are adequately trained to handle the materials and provides information to the Fire Services Division should emergency response be required. The Hazardous Materials Business Plan shall include the following:

a. The types of hazardous materials or chemicals stored and/or used on site, such as petroleum fuel products, lubricants, solvents, and cleaning fluids.

b. The location of such hazardous materials.

c. An emergency response plan including employee training information

d. A plan that describes the manner in which these materials are handled, transported, and disposed.

Impacts, Standard Conditions of Approval and Mitigation Measures

Thresholds of Significance

The proposed Project would have a significant impact on the environment if it were to:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
3. Create a significant hazard to the public through the storage or use of acutely hazardous materials near sensitive receptors;
4. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
5. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
6. Result in less than two emergency access routes for streets exceeding 600 feet in length unless otherwise determined to be acceptable by the Fire Chief, or his/her designee, in specific instances due to climatic, geographic, topographic, or other conditions;
7. Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and would result in a safety hazard for people residing or working in the Project Area;
8. Be located within the vicinity of a private airstrip, and would result in a safety hazard for people residing or working in the Project Area;
9. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
10. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Approach to Analysis

Adoption and development under the Specific Plan could result in various types of construction activities within the Project Area that would require ground disturbance and use of hazardous materials. These types of construction activities could result in impacts from hazards or the use of hazards materials. Potential impacts relative to hazards and hazardous materials are analyzed within the context of existing plans and policies, permitting requirements, local ordinances, and the City of Oakland's Standard Conditions of Approval. Impacts that would be substantially reduced or eliminated by compliance with these policies or requirements are found to be less-than-significant.

Retail, residential, office and commercial activities within the Project Area typically use hazardous chemicals common in these types of settings. These chemicals would include materials, such as toners, paints, lubricants, kitchen and restroom cleaners, and other maintenance materials as well as chemicals used during operations. Retail uses can also handle hazardous materials that are stored in containers provided by manufacturer. The amounts of hazardous materials that would be stored or handled cannot be determined at this time, however assumptions can be made that the amounts of hazardous materials and waste would not significantly change from existing conditions.

Based on the characteristics of development under the Specific Plan and the existing conditions, adoption and development under the Specific Plan would not result in impacts related to exposing

people and structures to wildland fires. No impact discussion is provided for this topic because the Project Area is located in an urbanized area that is not adjacent to any wildland areas. Fire protection services are provided by the City of Oakland Fire Department and all proposed new construction would be constructed according to the most current fire safety code requirements. Therefore, adoption and development under the Specific Plan would not be susceptible to wildland fires and there is no impact.

Hazardous Materials Transport, Use, or Disposal

Coliseum District and Plan Buildout

Impact Haz-1: The proposed Project would result in an increase in the routine transportation, use, and storage of hazardous chemicals. (**Less than Significant with SCA**)

Subsequent construction activities pursuant to the proposed Project may utilize hazardous chemicals such as fuels, oils and lubricants, paints and thinners, solvents, and other chemicals. Construction activities could generate chemical wastes that, if not properly managed, could flow into the storm drainage system or nearby surface water bodies and ultimately San Francisco Bay. As such, development under the proposed Project could potentially result in impacts from hazards or hazardous materials. Impacts would occur if construction-related activities were to result in hazards or the release of hazardous materials and could be considered potentially significant.

Ongoing commercial, retail and residential activities in the Project Area also involve the use of chemical compounds and products that are considered hazardous materials. Development of the proposed Project could require the transportation, use and storage of additional quantities of hazardous materials to new businesses and entities. If not handled, stored, or transported appropriately, these impacts could be potentially significant.

Standard Conditions of Approval

The handling and use of hazardous materials and the disposal of the resulting hazardous wastes would be required to follow the applicable laws and regulations, as described in Regulatory Setting above. Additionally, projects requiring the use and disposal of hazardous materials would be required to comply with project-specific hazards best management practices as required by SCA Haz-1: Hazards Best Management Practices.

Hazardous materials would be stored according to manufacturer's recommendations and according to the specifications within the project-specific Hazardous Material Management Plan (HMMP) and Hazardous Materials Business Plan (HMBP). As required, the hazardous materials would be stored in locations according to compatibility and in storage enclosures (i.e., flammable material storage cabinets) or in areas or rooms specially designed, protected, and contained for such storage, in accordance with applicable regulations. Hazardous materials would be handled and used in accordance with applicable regulations by personnel that have been trained in the handling and use of the material and that have received proper hazard-communication training. Hazardous materials reporting (i.e., California Hazardous Materials Business Planning, California Proposition 65 notification, and Emergency Planning and Community-Right-to-Know Act reporting) would be completed as required.

All hazardous materials would be transported to the Project Area in accordance with applicable hazardous materials shipping regulations. Hazardous materials and waste would be delivered, stored, and handled in accordance with the HMMP. The HMMP would also provide details on appropriate personal protective equipment, disposal procedures, and spill response measures in the case of

accidental upset conditions. Required compliance with applicable regulatory requirements would minimize hazards to workers, visitors, the public, and the environment from waste products. As a result of these requirements, impacts resulting from hazardous materials and hazardous waste transport, use and disposal would be **less than significant**.

Accidental Release of Hazardous Materials

Coliseum District and Plan Buildout

Impact Haz-2: Construction and development of the proposed Project could result in the accidental release of hazardous materials used during construction through improper handling or storage. (**Less than Significant with SCAs**)

Construction of the proposed Project would require activities which would use certain hazardous materials such as fuels, oils, lubricants, solvents, and glues. Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality. These impacts would be potentially significant.

Standard Conditions of Approval

Hazardous materials used on a construction site would be used in accordance with manufacturer recommendations. Spills of hazardous materials on construction sites are typically localized and are cleaned up in a timely manner. In most cases, the individual construction contractors are responsible for their hazardous materials and are required under their contract to properly store and dispose of these materials in compliance with state and federal laws.

Additionally, the use of construction best management practices which would be required to be implemented as part of construction and required by SCA Haz-1, Hazards Best Management Practices, along with SCA Haz-5, Lead-Based Paint/Coatings, Asbestos, or PCB Occurrence Assessment; SCA Haz-6, Environmental Site Assessment Reports Remediation; and SCA Haz-9, Health and Safety Plan per Assessment would minimize the potential adverse effects to groundwater and soils.

Given the use of best management practices as required by the individual construction contractors, the threat of exposure to the public or contamination to soil and groundwater from construction-related hazardous materials is considered **less than significant**.

Acutely Hazardous Materials near Sensitive Receptors

Coliseum District and Plan Buildout

Impact Haz-3: The proposed Project could create a significant hazard to the public through the storage or use of acutely hazardous materials near sensitive receptors. (**Less than Significant with SCA**)

Sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers. The proposed Project would include at least some of these uses, notably housing and parks and likely daycare centers. School-related impacts are discussed under Impact Haz-4 below.

It is possible that some of the proposed uses under the Project, particularly science and technology and related uses in Sub-Areas A, B, and C, as well as existing and future logistics and warehouse uses in Sub-Areas C and D, could store or use acutely hazardous materials near housing and other sensitive uses.

Standard Conditions of Approval

To protect sensitive receptors from public health effects from a release of hazardous substances, the City of Oakland Municipal Code requires a handler of hazardous materials within 1,000 feet of a residence, school, hospital, or other sensitive receptor to make written disclosure of whether it will handle, store, or produce any hazardous substances. The City, at its discretion, may require such a facility to prepare a hazardous materials assessment report and remediation plan (HMARRP) and include public participation in the planning process. The HMARRP must identify hazardous materials used and stored at the property and the suitability of the site; analyze off-site consequences that could occur as a result of a release of hazardous substances (including fire); include a health risk assessment; and identify remedial measures to reduce or eliminate on-site and off-site hazards.

In addition, SCA Haz-12 requires the submission of a Hazardous Materials Business Plan prior to issuance of a business license. This plan will disclose the types, locations, and use of any hazardous materials, ensure that employees are adequately trained to handle the materials, and provide information for emergency responders.

These regulations will reduce this impact to a **less than significant** level.

Hazardous Materials within a Quarter Mile of a School

Coliseum District and Plan Buildout

Impact Haz-4: Development of the proposed Project would require use of hazardous materials within 0.25 mile of a school. **(Less than Significant with SCAs)**

As discussed in the Environmental Setting, there are four schools located within the Project Area, all within Sub-Area C: ITT Technical Institute, Embry Riddle Aeronautical University, Oakland Aviation High School, and CPR For Life Training and Health Care. There are two grade schools and one daycare center located outside but within ¼-mile of the Project Area:

- Lighthouse Community Charter School, located at 444 Hegenberger Road, approximately 0.10 miles east of Sub-Area C;
- ACTS Christian Academy, located at 1034 66th Avenue, approximately 0.20 miles northeast of Sub-Area A; and
- Supporting Future Growth, located at 6865 Leona Creek Drive, approximately 0.10 miles north of Sub-Area A.
- Aviation Institute of Maintenance is located at 9636 Earhart Road, approximately 0.05 miles southwest of the Sub-Area D.

As discussed under Impact Haz-1 above, development of the proposed Project as well as existing, zoned land uses in the Project Area could require the use, transport and storage of hazardous materials.

Standard Conditions of Approval

Development of and operations within the proposed Project would be required to comply with the City of Oakland's Ordinances and General Plan Policies that require hazardous material handlers within 1,000 feet of a school or other sensitive receptor to prepare a Hazardous Materials Assessment Report and Remediation Plan (HMARRP). The HMARRP would disclose the use of hazardous materials at the site, conduct assessments of potential off-site risks (such as a Health Risk Assessment), and implement precautions to reduce identified risks. The HMARRP must identify hazardous materials used at a project site, the potential on-site and off-site risks, and measures to be implemented to reduce or eliminate these risks. The HMARRP is subject to review and approval by the City of Oakland. Additionally, those handling or storing hazardous materials would be required to prepare a Hazardous Materials Management Plan (HMMP) and Hazardous Materials Business Plan (HMBP) as required by Alameda County and the City's SCA Haz-12, Hazardous Materials Business Plan. Completing these requirements would reduce the potential for an unacceptable release of hazardous materials within 0.25 mile of a school to a **less than significant** level.

In the event of an accidental release of hazardous materials in the vicinity of a school, these potential risks would be **less than significant** given incorporation of the SCA and other existing regulatory requirements cited above.

Exposure to Hazardous Materials

Coliseum District

Impact Haz-5A: Development of the Coliseum District would be located on sites included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public or the environment. **(Less than Significant with SCAs)**

Future development within the Coliseum District will require excavation for installation of building foundations and underground utilities. Some of the excavation could be substantial. Many of the development sites within the Coliseum District have had documented past releases that have contaminated subsurface soils and groundwater, or may have had a previously unknown release that would be exposed during excavation activities. Known sites currently listed within the Coliseum District are summarized below. Future construction within the Coliseum District could disturb impacted soil and/or groundwater, and the disturbed contaminated soils could expose construction workers and the public to contaminants causing various short-term health effects. These impacts would be considered significant.

New Stadium, Parking Lot and Adjacent Hotel Site

Three properties within the Sports and Entertainment District that are proposed as the location for the new Stadium and directly associated uses pose potential contamination issues. These properties include:

- the Malibu Grand Prix site (GeoTracker Cleanup Program site, cleanup status is "Open - Site Assessment"),
- the Oakland International Trade Center site (GeoTracker LUST Cleanup site, cleanup status is "Completed - Case Closed"), and the

- 675 Hegenberger Road site (listed in the ERNS, CHMIRS, FTTS, HIST FTTS, FINDS, NPDES databases. The ERNS listing is due to two reported spills into Elmhurst Creek).

These sites are in various stages of investigation by the regulatory agencies. Future construction activities on these properties could encounter contamination depending on the progress in cleanup activities at the time.

Four other relevant properties have the potential to adversely affect construction of the new Stadium and other directly associated uses, including: 1) the nearby Moose Lodge site; 2) the Arco #4494 site; 3) the 640 Hegenberger Road site; and 4) the 680 Hegenberger Road site. Although these other properties are beyond the Project Area boundary, they may have the potential to affect the new Stadium or its associated parking lot if the contaminants associated with these sites migrate to the new Stadium site. However, none of the off-site properties are known to be currently affecting the Project Area.

Other potential contamination issues associated with this site include the potential for pesticides associated with prior agricultural activity, residual metals and asbestos in the soil from previously removed structures, unknown residual hazardous materials associated with prior use of the site for the storage of unknown materials.

New Ballpark Site and Ballpark Parking Lot

One relevant site with potential contamination issues has been identified on the new Ballpark site;

- the Oakland Coliseum District (GeoTracker LUST Cleanup site, cleanup status "Completed - Case Closed"). This site has been designated closed by the regulatory agency.

Future construction of a new Ballpark at this site could encounter contamination left in place during remediation activities. Additionally, due to the date of construction of the Coliseum, piping and other materials used in the construction of the complex may contain asbestos containing materials and lead based paint.

New Arena Site (within Sub-Area B)

Two relevant sites with potential contamination issues were identified within the proposed new Arena site:

- Grand Auto Site (GeoTracker LUST Cleanup site, cleanup status: "Completed - Case Closed"). This site has been granted closure by the regulatory agency.
- Clark Construction Group Inc./Cranbrook Group site (listed as a historical auto station and not currently under investigation).

In the event that a future Arena was to be constructed at this site, the construction activities could encounter residual contamination. Based on review of soil data, areas of this parcel appear to contain fill material impacted with PAHs, PCBs, TPH-D, TPH-MO, and SVOCs. Additionally, several structures located within this site were constructed between 1958 and 1968 and should be evaluated for potential asbestos containing materials and lead based paint.

Coliseum BART Station and TOD (east of San Leandro Street)

This portion of the Coliseum BART TOD District does not contain any properties with known contamination issues.

Five relevant off-site properties have the potential to adversely affect construction of new transit-oriented development within this district, including; 1) the Lion Creek Crossings - Phase IV site; 2) the Silva Association Roofing site; 3) the Coliseum Gardens site; 4) the Ace Recycling Inc. site; and 5) the A/C Body Shop (L&M Plating Inc.) site. Although these five properties are beyond the Project Area boundary, they may have the potential to affect construction activity at the TOD Site if the contaminants associated with these properties migrate to within the Project Area. However, these sites are not known to be currently affecting the Project Area.

A number of existing and previous on-site structures are/were industrial in nature, and therefore may have potentially impacted site soils and/or groundwater through their various industrial processes. Many areas with older industrial structures are found to have residual pesticides or metals in the soil from prior pest control spraying and the flaking of lead-based paint.

Coliseum BART Station and TOD (west of San Leandro Street)

Eight properties within the Coliseum BART Station and TOD (west of San Leandro Street) that are proposed for new mixed-use residential and commercial development pose potential contamination issues. These properties include:

- 711 71st Avenue site (listed in the US Brownfields, FINDS, and HAZNET databases);
- Western Colloid site at 700 71st Avenue (EnviroStor Evaluation site, status "Referral to RCRA);
- Russo Window Framing Inc. site at 6925 San Leandro Street (GeoTracker Cleanup Program site, cleanup status "Completed - Case Closed"). Although this site has been granted closure by the regulatory agency, a Soil Management Plan contains protocols for managing potential future contact with and/or exposure to subsurface soils in areas where residual or unknown contaminants may still exist at the site. In the event that future projects were to occur at these sites, the construction activities could encounter contamination.
- 6815 San Leandro Street and 6825 San Leandro Street sites (these sites are listed as historical auto stations and are not currently under investigation).
- Firestone Store (this site is listed as having a historical UST and is not currently under investigation. However, due to the nature of the previous operations the potential for contamination exists).
- Aero Quality Plating at 710 73rd Avenue (GeoTracker Cleanup Program site, cleanup Status "Open – Inactive", and EnviroStor Voluntary Cleanup site, status "Certified/O&M");
- UP Oakland Coliseum District at 700 73rd Avenue (EnviroStor State Response site, status "Active").

Each of these properties is in various stages of investigation by the regulatory agencies. Future development of mixed-use residential and commercial transit-oriented projects at these sites could encounter contamination, depending on the progress in cleanup activities at the time of construction or because of the nature of previous operations.

Five other relevant properties have the potential to adversely affect construction of new transit-oriented development at this location, including" 1) the 7001 Snell Street Site; 2) the Coliseum Garden (Standard Iron and Metal) site; 3) the Union Oil SS#3135 site; 4) the Fruitvale Business Center site; and 5) the Omega Termite site. Although these other properties are beyond the Project Area boundary, they may have the potential to affect development at the Coliseum BART TOD if the contaminants associated with these sites migrate. However, none of the off-site properties are known to be currently affecting the Project Area.

Other potential contamination issues associated with this site include the potential for impacted site soils and/or groundwater resulting from existing and/or prior industrial processes, pesticides associated with prior agricultural activity, and residual metals and asbestos in the soil from previously removed structures.

Sports Neighborhood

Portions of the Sports Neighborhood District are located on the site of the current Oakland Coliseum complex. Due to the date of construction, piping and other materials used in the construction of the Coliseum complex may contain asbestos containing materials and lead based paint.

Science and Technology District

Two relevant sites with potential contamination issues were identified within the Science and Technology District, specifically in the immediate vicinity of the Hegenberger/I-880 interchange:

- GMC Truck Center Site at 8099 Coliseum Way (GeoTracker LUST Cleanup site, cleanup status "Open - Site Assessment"); and
- CALTRANS Oakland Maintenance Station Site at 555 Hegenberger Road (GeoTracker LUST Cleanup site, cleanup status "Open - Site Assessment").

These sites are in various stages of investigation by the regulatory agencies. Future development of commercial and/or office projects at these sites could encounter contamination depending on the progress in cleanup activities at the time of construction.

Two relevant off-site properties with the potential to adversely affect development within this District were identified in the vicinity: 1) the Hegenberger Shell Site; and 2) the South Coliseum and Hegenberger Road site. Although these sites are beyond the Project Area boundary, they may have the potential to affect new development if the contaminants associated with these sites migrate to within the Project Area. However, these sites are not known to be currently affecting the Project Area.

Several of the current site structures within this District have unknown dates of construction, but may date back to the 1960s. Due to the unknown dates of construction, the current structures should be evaluated for asbestos containing materials and lead based paint, and there may be residual pesticides or metals in the soil.

Open Space and Drainage Ways

One relevant site with potential contamination issues were identified within the proposed Damon Slough improvement area:

- Cruise America site at 796 66th Avenue (GeoTracker LUST Cleanup Site, cleanup status "Completed - Case Closed"). This site is currently being remediated.

With the proposed improvements to Damon Slough (potentially including widening and deepening the channel, re-grading and site improvements to recreate wetland habitat, and new construction of bridges and embankments) these construction activities could encounter contamination depending on the progress of cleanup activities at the time.

Three relevant off-site properties also have the potential to adversely affect improvements along Damon Slough: 1) the Allied Crane Maintenance Site; 2) the Peck and Hillis Company site; and 3) the 555 66th Avenue site. Although these other properties are beyond the Project Area boundary, they may

have the potential to affect the Project Area if the contaminants associated with these sites migrate. However, these sites are not known to be currently affecting the Project Area.

Historically, industrial structures were located in this area and therefore may have potentially impacted site soils and/or groundwater through their various industrial processes. Due to the date of construction of these prior structures, the site may contain asbestos-containing materials and lead based paint.

Regulatory Requirements

Future development of any site that has a documented release of hazardous materials and is listed in a regulatory database is subject to site clean-up regulations as required by the designated lead regulatory agency.

In the Coliseum BART TOD and Sports Neighborhood Districts, the proposed mixed-use residential land use is more sensitive than the previous industrial and Coliseum non-residential land use. More stringent clean-up regulations will apply to these sites, even if the property has been considered remediated or closed based on compliance with standards for current land uses.

Exposure During Demolition

Demolition of existing structures or portions thereof within the Project Area may expose construction workers, the public, or the environment to hazardous materials such as lead-based paint, asbestos, and PCBs. The level of potential impact is dependent upon the age, construction, and building materials in each area of the building. As discussed above, asbestos containing materials may be present at the site which, if disturbed, could expose workers and the public during demolition. Any remaining asbestos containing materials would need appropriate abatement of identified asbestos prior to demolition. These impacts would be potentially significant.

Potential exposure to these hazardous building materials would be reduced through appropriate identification, removal and disposal according to applicable regulations and the City's SCAs to less-than-significant levels. Asbestos containing materials are regulated both as a hazardous air pollutant under the Clean Air Act and as a potential worker safety hazard under the authority of Cal-OSHA.

Cal-OSHA also regulates worker exposure to lead-based paint. In structures slated for demolition for adoption and development under the Specific Plan, any asbestos-containing materials would be abated in accordance with state and federal regulations prior to the start of demolition or renovation activities. Section 19827.5 of the California Health and Safety Code requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The BAAQMD is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified 10 days in advance of any proposed demolition or abatement work.

Asbestos abatement contractors must follow State regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos-containing material. Asbestos removal contractors must be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur must have a hazardous waste generator number assigned by and registered with the DTSC in Sacramento. The site owner or responsible party and the transporter of the waste are required to file a hazardous waste manifest that details the transportation of the material from the site and its disposal.

Both the federal OSHA and Cal-OSHA regulate worker exposure during construction activities that disturb lead-based paint. The Interim Final Rule found in 29 CFR 1926.62 covers construction work in

which employees may be exposed to lead during such activities as demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance. The OSHA specified compliance includes respiratory protection, protective clothing, housekeeping, special high-efficiency filtered vacuums, hygiene facilities, medical surveillance, and training. No minimum level of lead is specified to activate the provisions of this regulation.

Fluorescent lighting ballasts manufactured prior to 1978, and electrical transformers, capacitors, and generators manufactured prior to 1977, may contain PCBs. In accordance with the Toxic Substances Control Act and other federal and state regulations, adoption and development under the Specific Plan would be required to properly handle and dispose of electrical equipment and lighting ballasts that contain PCBs, reducing potential impacts to a less than significant level.

Standard Conditions of Approval

Future development throughout the Coliseum District will be required to implement all applicable City of Oakland Standard Conditions of Approval. SCA Haz-3 through Haz10 pertaining to hazardous materials apply to all development within the Coliseum District because all Coliseum District properties include redevelopment or reuse of historically industrial or commercial buildings. Furthermore, many of Coliseum District locations are identified in City records for hazardous materials or are identified on the State Cortese List.

Assessments

SCAs Haz-3, Haz-4, Haz-5, and Haz-11 require preparation of a Phase I Environmental Site Assessment (ESA), a Phase II ESA, and/or documentation of the presence or lack thereof of asbestos-containing materials, lead-based paint, radon or vapor intrusion from the groundwater and soil, and any other building materials or stored materials classified as hazardous waste.

- A Phase I ESA typically lists current and past operations, reviews environmental agency databases (including the State Cortese list as indicated above), records site reconnaissance observations, and summarizes potential contamination issues. A Phase I ESA is typically triggered by a title transfer prior to submission of a development application to the City. In the event that a development application for a proposed residential development project allowed by the Specific Plan does not already have a Phase I ESA, one would be required through the City's permit application process.
- If the Phase I ESA identifies known or potential contamination issues, including presence on the Cortese list (as indicated for those sites listed above), a Phase II ESA is conducted. A Phase II ESA typically includes collecting soil and/or groundwater samples at the project site and sending the samples to a laboratory for analysis. A Phase II ESA can also entail inspecting existing structures to identify hazardous building materials. A Phase II ESA typically includes recommendations for remediation and/or safe handling of identified contaminants.
- Phase I and/or Phase II ESA and other assessments are required to be submitted to the Fire Prevention Bureau, Hazardous Materials Unit prior to issuance of any demolition, grading or building permits within the Coliseum District.

Remediation

SCAs Haz-6, Haz-7, Haz-8, Haz-9, and Haz-10 require consultation with the appropriate local, State, and federal environmental regulatory agencies to ensure that implementation of all Remedial Action Plans, Risk Management Plans, Soil Management Plans and Groundwater Management Plans is conducted at a

sufficient level to minimize risks to human health and the environment (both during and after construction) posed by soil contamination, groundwater contamination, or other surface hazards.

For exposure during demolition, compliance with the Clean Air Act, Toxic Substances Control Act, and various State regulations, as well as the required procedures monitored and enforced by federal OSHA, Cal-OSHA, and BAAQMD, as well as SCA Haz-7, Lead-based Paint Remediation, and SCA Haz-2, Asbestos Removal in Structures, would ensure that any potential impacts due to lead-based paint or asbestos are **less than significant**.

Verification

Written evidence of approval of all final remediation efforts required by a local, state, or federal environmental regulatory agency must be submitted. SCA Haz-10 requires preparation and implementation of a Health and Safety Plan that conforms to the Phase I ESA and/or Phase II ESA recommendations to protect construction workers.

With required implementation of SCAs Haz-3 through Haz-11, and required compliance with local, State and federal regulations for treatment, remediation or disposal of contaminated soil or groundwater, the hazard to the public or the environment from hazardous materials sites would be **less than significant**.

Plan Buildout

Impact Haz-5B: Development of the Project Area would be located on sites included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public or the environment. **(Less than Significant with SCAs)**

Development of the Project Area will require excavation for installation of building foundations and underground utilities. Some of the excavation could be substantial. Many of the development sites within the Project Area have had documented past releases that have contaminated subsurface soils and groundwater, or may have had a previously unknown release that would be exposed during excavation activities. Known sites currently listed within the Project Area are summarized below. Future construction at these locations could disturb impacted soil and/or groundwater, and the disturbed contaminated soils could expose construction workers and the public to contaminants causing various short-term health effects. These impacts would be considered significant.

Sub-Area A

See the discussion under Impact Haz-5A above.

Sub-Area B

See the discussion under Impact Haz-5A above. In addition, two other relevant sites with potential contamination issues were identified outside of the Coliseum District but within Sub-Area B:

- the Hooton Property/Port of Oakland/Lincoln Property site at 7303-7307 Edgewater Drive (Geotracker LUST Cleanup site, cleanup status “Completed - Case Closed”); and
- the City of Oakland Municipal Service Center Site at 7101 Edgewater Drive (GeoTracker LUST Cleanup site, cleanup status “Open - Verification Monitoring”).

Future redevelopment or construction at these sites could encounter contamination depending on the type of cleanup activities conducted. Additionally, based on review of soil data from the vicinity,

portions of Sub-Area B appear to contain fill material impacted with PAHs, PCBs, TPH-D, TPH-MO, and SVOCs.

Several structures located within Sub-Area B were constructed in the early 1960s; therefore the structures should be evaluated for potential asbestos containing materials and lead based paint.

Sub-Area C

The following relevant sites with potential contamination issues were identified in Sub-Area C:

- Goodyear Tire and Rubber Company at 7727 Oakport (Geotracker LUST Cleanup site, cleanup status "Completed - Case Closed");
- 7717 Oakport Street (listed on the US Hist Auto Stat database);
- 7700 Edgewater Drive/Edgewater Park Plaza (listed on the US Hist Auto Stat database);
- Edgewater Corp. Center at 700 Edgewater Drive (GeoTracker Cleanup Program site, cleanup status "Open – Inactive");
- Peak Engineering Inc./S & S Trucking/S & S Trucking at 477 Roland Way (listed on the HAZNET, RCRA SQG, FINDS, HWT databases. The HAZNET listing is for contaminated soils from site cleanup).
- Ardenbrook site at 7901 Oakport Street (listed on the US Hist Auto Stat database);
- Ryder Truck Rental at 8001 Oakport (Geotracker LUST Cleanup site, cleanup status "Completed - Case Closed");
- Superior Tiles at 7801 Oakport (GeoTracker LUST Cleanup site, cleanup status "Completed - Case Closed");
- TD Rowe at 8134 Capwell (Geotracker LUST Cleanup site, cleanup status "Completed - Case Closed", but a limited land use restriction appears to be in place);
- Stanley Custom Care at 7920 Capwell Drive (listed on the US Hist Auto Stat database);
- BOC Group Inc./President Tuxedo at 8383 Capwell (GeoTracker LUST Cleanup site, cleanup status "Completed - Case Closed");
- Delta Lines Inc./ California Motor Express at 333 Hegenberger Road (listed on the US Hist Auto Stat database);
- Pacific Bell (Q3-650)/Pacific Bell/Penske Truck Leasing/Nestle Waters of North America/Rollins Leasing Corp./Rollins Leasing Corp. #141-B/Rollins Truck Leasing at 295 Hegenberger (GeoTracker LUST Cleanup site, cleanup status "Completed - Case Closed");
- Shell #13-5691 at 285 Hegenberger (GeoTracker LUST Cleanup site, cleanup status "Completed - Case Closed" with a limited land use restriction in place);
- Chevron #9-1851 at 451 Hegenberger Road (listed on the HAZNET, US HIST Auto Stat, CA FID UST, UST, SWEEPS UST, LUST, HIST CORTESE, Alameda County CS, HIST UST databases. Site is under review for closure);
- Union Oil SS#5043 site at 449 Hegenberger (GeoTracker LUST Cleanup site, cleanup status "Open - Assessment & Interim Remedial Action").

These sites are in various stages of investigation by the regulatory agencies. In the event that future projects were to occur at these sites, the construction activities could encounter contamination depending on the progress in cleanup activities at the time of construction.

Additionally, there are a number of off-site properties with the potential to adversely affect development within Sub-Area C, including: 1) 280 Hegenberger Road; 2) AGE Muffler Wheel Aligning & Brake Shop/AGE Service/Precision Trucking School; 3) 294 Hegenberger Road; and 4) Union Bank. Although these off-site properties are beyond the Sub-Area B boundary, they may have the potential to affect new development and redevelopment if the contaminants associated with these sites migrate to within the Project Area. These sites are not known to be currently affecting the Project Area.

Soil investigations conducted on several sites indicate the possible contamination of fill material underlying portions of Sub-Area C. Several buildings located within Sub-Area C were constructed in the 1960s; therefore structures designated for demolition as part of the project should be evaluated for potential asbestos containing materials and lead based paint.

Sub-Area D

The following relevant sites with potential contamination issues were identified in Sub-Area D:

- United Parcel Services at 8400 Pardee (GeoTracker LUST Cleanup site, cleanup status "Open - Assessment & Interim Remedial Action");
- Marriot Courtyard at 265 Hegenberger (GeoTracker LUST Cleanup site, cleanup status "Completed - Case Closed");
- Federal Express at 8455 Pardee (GeoTracker LUST Cleanup site, cleanup status "Open - Assessment & Interim Remedial Action"); and
- Hegenberger Annex Site at 77 Hegenberger Road (listed on the VCP database, but the site is listed as No Further Action as of 2005).

These sites are in various stages of investigation by the regulatory agencies. In the event that future projects were to occur at these sites, the construction activities could encounter contamination depending on the progress in cleanup activities at the time of construction.

Additionally, there are a number of off-site properties with the potential to adversely affect development within Sub-Area D, including: 1) General Tire; 2) Diablo Cellular; 3) MOIA Sierra Academy; and 4) AMERIFLIGHT. Although these off-site properties are beyond the Sub-Area D boundary, they may have the potential to affect new development and redevelopment if the contaminants associated with these sites migrate to within the Project Area.

Soil investigations conducted on several sites indicate the possible contamination of fill material underlying portions of Sub-Area D. Several buildings located within Sub-Area D were constructed in the 1960s; therefore structures designated for demolition as part of the project should be evaluated for potential asbestos containing materials and lead based paint.

Sub-Area E

One relevant site with potential contamination issues was identified in Sub-Area E:

- the EBMUD site at 5597 Oakport Drive (GeoTracker LUST Cleanup site, cleanup status "Completed - Case Closed").

This site is listed as closed by the regulatory agency. However, future reclamation activities at this site for an environmental mitigation bank/open space could encounter residual contamination. Several buildings located within Sub-Area E were constructed in the 1950s and 1960s; therefore soils should be evaluated for potential asbestos containing materials and lead based paint.

Regulatory Requirements

Future development of any site that has a documented release of hazardous materials and is listed in a regulatory database is subject to site clean-up regulations as required by the designated lead regulatory agency. Locations planned for housing development under the proposed Project, such as the waterfront Residential District, are more sensitive than current industrial land uses. More stringent clean-up regulations will apply to these areas, even if the property has been considered remediated or closed based on compliance with standards for current land uses.

Exposure During Demolition

Demolition of existing structures or portions thereof within the Project Area may expose construction workers, the public, or the environment to hazardous materials such as lead-based paint, asbestos, and PCBs. The level of potential impact is dependent upon the age, construction, and building materials in each area of the building. As discussed above, asbestos containing materials may be present at the site which, if disturbed, could expose workers and the public during demolition. Any remaining asbestos containing materials would need appropriate abatement of identified asbestos prior to demolition. These impacts would be potentially significant.

Potential exposure to these hazardous building materials would be reduced through appropriate identification, removal and disposal according to applicable regulations to less-than-significant levels. Asbestos containing materials are regulated both as a hazardous air pollutant under the Clean Air Act and as a potential worker safety hazard under the authority of Cal-OSHA.

Cal-OSHA also regulates worker exposure to lead-based paint. In structures slated for demolition for adoption and development under the Specific Plan, any asbestos-containing materials would be abated in accordance with state and federal regulations prior to the start of demolition or renovation activities. Section 19827.5 of the California Health and Safety Code requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The BAAQMD is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified 10 days in advance of any proposed demolition or abatement work.

Asbestos abatement contractors must follow State regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos-containing material. Asbestos removal contractors must be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur must have a hazardous waste generator number assigned by and registered with the DTSC in Sacramento. The site owner or responsible party and the transporter of the waste are required to file a hazardous waste manifest that details the transportation of the material from the site and its disposal.

Both the federal OSHA and Cal-OSHA regulate worker exposure during construction activities that disturb lead-based paint. The Interim Final Rule found in 29 CFR 1926.62 covers construction work in which employees may be exposed to lead during such activities as demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance. The OSHA specified compliance includes respiratory protection, protective clothing, housekeeping, special high-efficiency

filtered vacuums, hygiene facilities, medical surveillance, and training. No minimum level of lead is specified to activate the provisions of this regulation.

Fluorescent lighting ballasts manufactured prior to 1978, and electrical transformers, capacitors, and generators manufactured prior to 1977, may contain PCBs. In accordance with the Toxic Substances Control Act and other federal and state regulations, adoption and development under the Specific Plan would be required to properly handle and dispose of electrical equipment and lighting ballasts that contain PCBs, reducing potential impacts to a less than significant level.

Standard Conditions of Approval

Future development under the proposed Project will be required to implement all applicable City of Oakland Standard Conditions of Approval. See the discussion under Impact Haz-5A, which explains how the application of all relevant federal. State, and City regulations, as well as SCAs Haz3 through Haz11, will reduce these impacts to a **less than significant** level.

Emergency Access Routes

Coliseum District and Plan Buildout

Impact Haz-6: Development of the proposed Project could result in fewer than two emergency access routes for streets exceeding 600 feet in length. (**Less than Significant with SCAs**)

Development of the proposed Project could require temporary construction activities which result in fewer than two emergency access routes for streets exceeding 600 feet in length. Temporary construction closures or limited emergency access could impede emergency response and create hazardous conditions for the public.

Standard Conditions of Approval

The proposed Project would comply with City of Oakland's Ordinances and General Plan Policies which would require that temporary road closures would include traffic control plans to ensure at least two emergency access routes are available for streets exceeding 600 feet in length. Furthermore, SCA 20, *Improvements in the Public Right-of-Way (General)*, and SCA 21, *Improvements in the Public Right-of-Way (Specific)*, require that public improvement plans and building plans for individual development projects incorporate design requirements such as curbs, gutters, disabled access, adequate emergency access, and other measures to improve vehicle, bicycle, and pedestrian safety. Compliance with all applicable requirements would reduce potential impacts to a **less than significant** level.

Located Within Two Miles of a Public Airport

Coliseum District and Plan Buildout

Impact Haz-7: The Project Area is located within the Oakland International Airport Land Use Plan area and within two miles of the Oakland Airport, but would not result in a safety hazard for people residing or working in the Project Area. (**Less than Significant**)

The Federal Aviation Regulations (FAR) provide criteria for evaluating the potential effects of obstructions on the safe and efficient use of navigable airspace. The Federal Aviation Administration

(FAA) requires notification of any proposed construction or alteration projects that exceed the airspace protection criteria established in FAR Part 77. The Airport Land Use Commission (ALUC) of Alameda County has adopted an Airport Land Use Compatibility Plan (ALUCP) for the public Oakland International Airport, which incorporates the airspace protection criteria provided in FAR Part 77.

The Project Area lies within the Airport Influence Area (AIA), also known as the airport referral area. The AIA is the area within which the ALUC is authorized to review new local land use actions, plans, and policies. The northernmost boundary of the Oakland Airport's AIA begins at High Street in the City of Alameda and extends eastward to San Leandro Street. The AIA follows San Leandro Street south until it reaches Lewelling Boulevard in the City of Hayward, where it turns west. The AIA continues to follow Lewelling Boulevard westward until it reaches the Union Pacific Railroad tracks and turns south. The AIA boundary follows the tracks until it turns east on West Winton Avenue, and continues south on Hesperian Boulevard. The AIA turns west on HWY 92 to the San Francisco Bay. The AIA includes portions of the cities of Oakland, San Leandro, Alameda, Hayward, and small unincorporated areas of Alameda County in the vicinity of the Airport, including San Lorenzo, located southeast of the Airport.

The ALUCP has established land use safety compatibility criteria developed to minimize the risks to people and property on the ground as well as those for people in an aircraft in the event of an accident or emergency landing occurring outside the AIA. The ALUCP states that the risk that potential aircraft accidents pose to land around the airport shall be defined in terms of the geographic distribution of where accidents are most likely to occur. To define those risks the ALUCP identifies safety zones around the airport. A total of seven different safety zones have been identified. The choice of safety zone criteria appropriate for a particular zone is largely a function of risk acceptability.

As shown on **Figure 4.7-5**, the Project Area includes three Safety Compatibility Zones:

- Zone 3: Inner Turning Zone. This zone applies to only a small portion of the Project Area, specifically the very southern portion of Sub-Area D near the intersection of Hegenberger Road and Doolittle Drive. Within Zone 3, professional indoor sports arenas, outdoor stadiums and high density residential use is considered incompatible. However, these types of uses are not proposed in this location, and the only types of proposed uses, (logistics, warehouse, distribution and light industry) are all considered acceptable uses in this Zone.
- Zone 6: Traffic Pattern Zone. This zone applies to the southerly portion of Sub-Area C, the waterfront of Sub-Area B, and all of Sub-Area D. There are no limits to the land uses proposed.
- Zone 7: Other Airport Environs (area between Zone 6 and the AIA boundary). This zone applies to all of Sub-Areas A and E, almost all of Sub-Area B, and the northerly portion of Sub-Area C. Within Zone 7 there are no land use restrictions on residential development, office buildings, medium sized businesses, or eateries. High-capacity indoor assembly room (i.e., greater than 1,000 people), professional sports arenas and concert halls are allowable in Zone 7 if no other suitable site outside the AIA is available.

Since the proposed Project is in compliance with the land use safety compatibility criteria of the ALUCP, potential impacts would be **less than significant**.

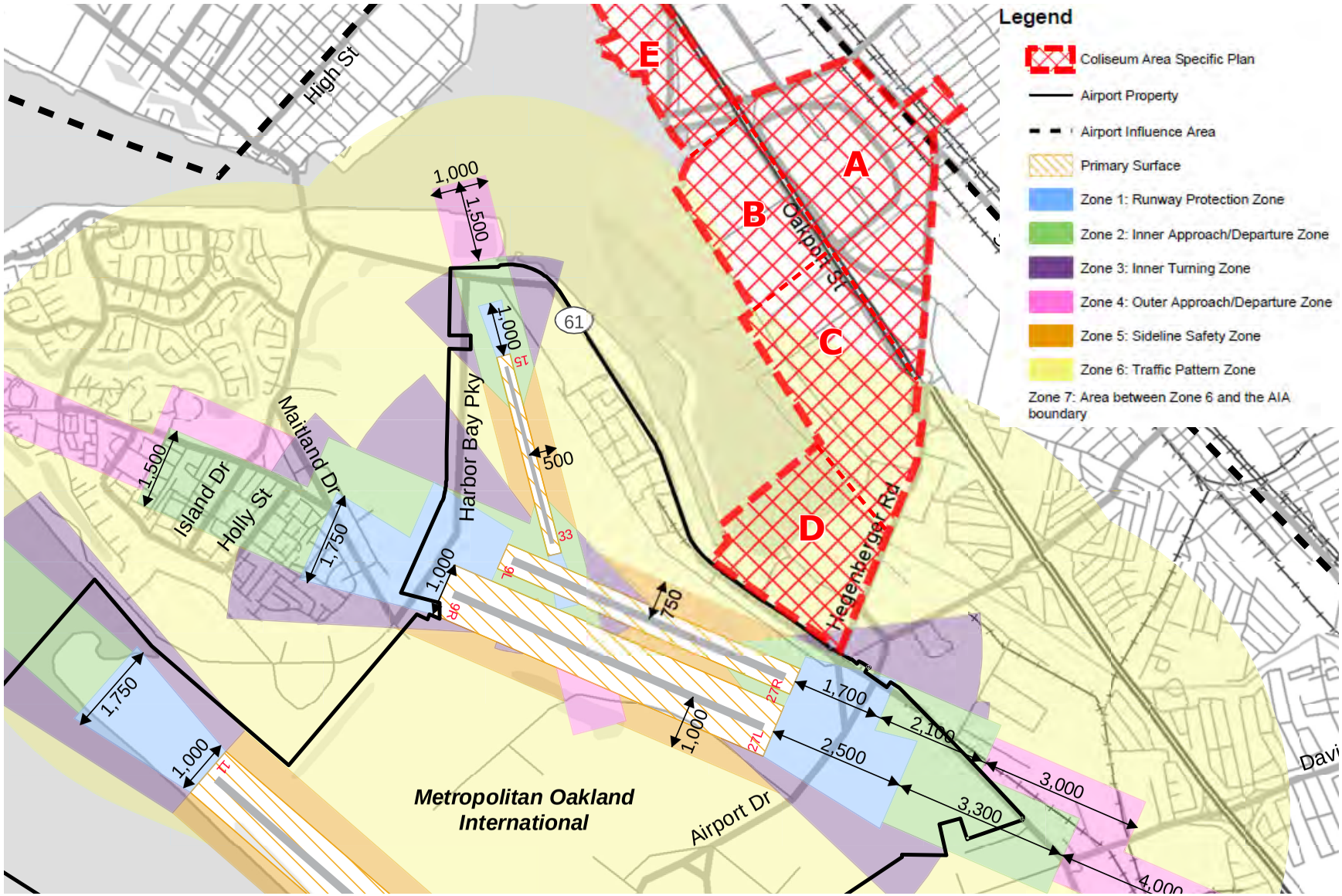

Figure 4.7-5
AIA Safety Compatibility Zones

Source: ALUCP and Landrum and Brown, 2014

Located in the Vicinity of a Private Airstrip

Coliseum District and Plan Buildout

Impact Haz-8: The Project Area is not located in the vicinity of a private airstrip. (**No Impact**)

There are no private airstrips in or around Oakland.

Emergency Response and Evacuation Plans

Coliseum District and Plan Buildout

Impact Haz-9: Development of the Coliseum District under the proposed Project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (**Less than Significant**)

The Safety Element of the City's General Plan, in its Figure 2.1, identifies Hegenberger Road, San Leandro Street, and Edgewater Drive as evacuation routes, both in and beyond the Project Area. Other roadways near the Project Area designated as evacuation routes include International Boulevard, Seminary Avenue, Doolittle Drive, and 98th Avenue.

The Transportation analysis of this EIR, Chapter 4.13, evaluates the impact of the proposed Project on roadways and intersections in and around the Project Area. For these roadways identified as evacuation routes in the Safety Element, this EIR finds significant and unavoidable impacts on many of these routes due to development of the proposed Project. Chapter 4.13 also examines traffic impacts during special events at the proposed sports venues and finds that the additional trips generated would exacerbate already congested traffic conditions in the vicinity of the site.

That said, the proposed Project does not impair, re-route, reduce, or otherwise interfere with these routes. The additional traffic congestion projected as a result of the proposed Project would not occur at all times, rather mainly during peak traffic periods and special events. Any evacuation route would likely be congested in the case of an emergency and additional peak hour traffic caused by the proposed Project does not in and of itself comprise impairment of an emergency evacuation plan. Furthermore, the Project Area is within an urbanized part of Oakland and contains other roadways that could serve as de facto evacuation routes in the case of an emergency. As a result of these considerations, the proposed Project has a **less than significant** impact. In addition, the relocation of the Oakland Police Department (OPD) Communications Center would be required as part of the redevelopment of Sub-Area B. This facility could be included elsewhere within the Project Area or somewhere within the City. The setup of a new Communications Center would be handled under the direction of OPD, who would ensure that the transition process would not impair implementation of emergency response or evacuation plans, and therefore this impact is **less than significant.**

Wildland Fires

Coliseum District and Plan Buildout

Impact Haz-10: the proposed Project would not expose people or structures to risks involving wildland fires. (**No Impact**)

The Project Area is not in or adjacent to a fire hazard severity zone, for either a State Responsibility Area or a Local Responsibility Area, as shown on CalFire's Fire Hazard Severity Zone maps for Alameda County.[1]

Cumulative Impacts

Impact Haz-11: The proposed Project, when combined with other past, present, existing, approved, pending and reasonably foreseeable development in the vicinity, would result in cumulative hazards. (**Less than Significant with SCAs**)

The cumulative geographic context for hazardous materials for proposed Project consists of the Project Area in addition to all areas of the City and area roadways used to transport hazardous materials and for emergency evacuation.

Cumulative health and safety impacts could occur if outdoor or off-site hazards related to adoption and development of the proposed Project were to interact or combine with those of other cumulative development within and around the Project Area. These impacts could occur through limited mechanisms: air emissions, transport of hazardous materials and waste to or from a project site, inadvertent release of hazardous materials to the sewer or non-hazardous waste landfill, and potential accidents that require hazardous materials emergency response capabilities. The mechanisms for cumulative off-site effects are discussed below.

Because development projects in the vicinity of the Project Area could involve the same roads used by developments within the Project Area, development of the proposed Project could contribute to cumulative increases in the amount of hazardous material transported to and from the Project Area. Cumulative increases in the transportation of hazardous materials and wastes would cause a less than significant impact because the probability of accidents is relatively low due to the stringent policies regulating the transport, use and storage of hazardous materials.

Development of the proposed Project could contribute to cumulative increases in the demand for hazardous materials emergency response capabilities in Oakland. Any growth involving increased hazardous materials use has the potential to increase the demand for emergency response capabilities in the area. However, first response capabilities and hazardous materials emergency response capabilities are currently available and sufficient for all cumulative projects. Furthermore, substantive hazardous materials accidents within the Project Area or vicinity are expected to be rare, and when such incidents would occur, only one such incident would be expected at any one time (except during major catastrophes). Furthermore, additional hazardous materials response services could be available through other jurisdictions, and private hazardous materials emergency response agencies could be used.

Finally, the proposed Project in combination with other major development projects would add a cumulative amount of greater congestion to roadways used for evacuation. Traffic congestion during an evacuation is inevitable, however, and the urbanized roadway grid system in East Oakland would allow for many possible evacuation routes to be taken in the case of an emergency. This cumulatively greater

[1] Accessed on February 6, 2014 at: http://www.fire.ca.gov/fire_prevention/fhsz_maps_alameda.php

traffic congestion constitutes a **less than significant** impact to the implementation of emergency response and evacuation plans.

Standard Conditions of Approval

The proposed Project as well as other future major development projects would be required to comply with the City's SCA Haz-1, Hazards Best Management Practices, SCA Haz-8, Other Materials Classified as Hazardous Waste, and SCA Haz-12, Hazardous Materials Business Plan, which outlines the guidance for transporting hazardous materials safely to and from the project sites, in addition to SCA Haz-3, Site Review by Fire Services Division, which will ensure overall compliance of projects for hazardous materials. These SCAs will keep cumulative impacts at a **less than significant** level.