FRUITVALE TRANSIT VILLAGE PHASE 2

Draft Environmental Impact Report
SCH No. 2008122089

Prepared for
City of Oakland,
California

January 2010

ESA

CITY OF OAKLAND

250 FRANK H. OGAWA PLAZA, OAKLAND, CALIFORNIA 94612 – 2033

Community and Economic Development Agency
Planning & Zoning Services Division

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FRUITVALE TRANSIT VILLAGE PHASE 2
NOTICE OF RELEASE AND AVAILABILITY OF DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR)
AND
NOTICE OF PUBLIC HEARINGS ON DEIR

TO: All Interested Parties

SUBJECT: Notice of Release/Availability of Draft Environmental Impact Report for the Fruitvale Transit Village Phase 2, and Notice of Public Hearing on the same.

REVIEW PERIOD: January 14, 2010 – March 1, 2010

CASE NO.: ER 08-0005/PUD 08-186 (CEQA State Clearing House Number 2008122089)

PROJECT SPONSOR: The Unity Council

PROJECT LOCATION: The 3.4-acre project site is located adjacent to the Fruitvale BART station, generally bounded by 35th and 37th Avenues, East 12th Street, and BART tracks.

PROJECT DESCRIPTION: The Unity Council, the project sponsor, and Signature Properties, developer for the Unity Council, have submitted a development application for a 275-unit residential project. The proposed project is designed as a four-story residential complex surrounding a five-story parking garage with 277 parking spaces. The existing BART parking lot and associated landscaping would be removed from the project site. The proposed project would be constructed in four phases. The parking structure would be constructed during Phase 1, and three four-story residential buildings would be constructed during Phases 2 through 4. The parking structure would be approximately 111,100 square feet (sq.ft.) and the three residential buildings would range from approximately 101,000 to 115,000 sq.ft.

The project is proposed as a Planned Unit Development (PUD), which requires a Preliminary Development Plan (PDP) for the entire project site and, subsequently, one or more Final Development Plan(s) (FDPs) and Final Design Reviews prior to implementation of each phase of development. The project will also need Design Review approval and conditional use permit for exceeding the maximum 0.5 parking space per residential unit in the S-15 District, as well as numerous non-discretionary approvals. Approvals or permits will also be required from other state and regional agencies and districts including but not limited to BART and the Regional Water Quality Control Board.

ENVIRONMENTAL REVIEW: An Initial Study was prepared for the proposed project and it was determined that construction of the project could result in potentially significant impacts to Noise, Air Quality, and Transportation/Traffic, requiring the preparation of an Environmental Impact Report (EIR). A Notice of

Preparation of an EIR was issued by the City on December 22, 2008. A Draft EIR 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 Draft EIR identifies significant unavoidable environmental impacts related to: Transportation and Air Quality/Greenhouse Gases.

Copies of the DEIR are available for review or distribution to interested parties at no charge at the Community and Economic Development Agency, Planning Division, 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 Draft EIR may also be reviewed on the City's website at:

http://www.oaklandnet.com/government/ceda/revised/planningzoning/MajorProjectsSection/environmentaldocuments.html (scroll to bottom and click on "Fruitvale Transit Village Phase 2 DEIR")

PUBLIC HEARING:

Wednesday, February 3, 2010 at 6:00 p.m. Meeting of the City Planning Commission, Hearing Room 1, City Hall, One Frank H. Ogawa Plaza, Oakland, California

The City of Oakland is hereby releasing this Draft EIR, finding it to be accurate and complete and ready for public review. Members of the public are welcome to attend these hearings and provide comments. 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 project 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 Kristi Bascom, Project Planner, Re: Case No. ER 08-0005/PUD 08-186; c/o Gary Patton, Deputy Director of Planning and Zoning; City of Oakland, Community and Economic Development Agency, Planning Division; 250 Frank H. Ogawa Plaza, Suite 3315; Oakland, California 94612 or by e-mail to kristi@planbmc.com.

Comments must be received no later than 4:00 p.m. on Monday, March 1, 2010.

After all comments have been received, a Final EIR will be prepared and the Planning Commission will consider certification of the EIR and rendering a decision on the project 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 the Project. If you challenge the environmental document or other actions pertaining to the 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 the Community and Economic Development Agency on or prior to March 1, 2010. For further information, please contact Kristi Bascom at (510) 582-1328 or via email at kristi@planbmc.com.

Kristi Bascom

Kristi Bascom, Project Planner, for GARY PATTON
Deputy Director, Planning and Zoning

File Number ER 08-0005/PUD 08-186
Date of Notice: January 14, 2010

FRUITVALE TRANSIT VILLAGE PHASE 2

Draft Environmental Impact Report
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LIST OF ABBREVIATIONS USED IN THIS DOCUMENT

AADT	average annual daily traffic
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACCMA	Alameda County Congestion Management Analysis
AC Transit	Alameda County Transit
ALUP	Airport Land Use Plan
APS	Alternative Planning Strategy
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Basin	San Francisco Bay Area Air Basin
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CBD	Central Business District
CBTP	Community-Based Transportation Plan
CCCC	California Climate Change Center
CCR	California Code of Regulations
CCTP	Climate Change Technology Program
CEDA	Community and Economic Development Agency
CEC	California Energy Commission
CEQA	California Environmental Quality Act and Guidelines

CFR	Code of Federal Regulations
CHP	California Highway Patrol
CNEL	Community Noise Equivalent Level
CH_4	methane
CMP	Congestion Management Program
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
dB	decibel(s)
dBA	A-weighted decibel(s)
DOT	Department of Transportation
DPM	diesel particulate matter
DWR	Department of Water Resources
EBMUD	East Bay Municipal Utility District
EIR	Environmental Impact Report
EO	Executive Order
FAR	floor-area ratio
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	global warming potential
H_2O	water vapor
HCM	*Highway Capacity Manual*
HFC	hydrofluorocarbon
HPE	Historic Preservation Element
Hz	Hertz
I-580	Interstate 580
I-880	Interstate 880
I-980	Interstate 980
ICLEI	International Council for Local Environmental Initiatives
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers
LOS	level of service
LS	less than significant
LUTE	Land Use and Transportation Element
MACT	Maximum Achievable Control Technology
MMT	million metric tons

$MMTCO_2e$	million metric tons of CO_2e
MPO	metropolitan planning organization
MRP	Municipal Regional Permit
msf	million square feet
MSL	mean sea level
MTC	Metropolitan Transportation Commission
MTS	Metropolitan Transportation System
MUTCD	Manual on Uniform Traffic Control Devices
N	no impact
NAAQS	National Ambient Air Quality Standards
N_2O	nitrous oxide
NO	nitric oxide
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NOx	nitrogen oxides
O_3	ozone
OAL	Office of Administrative Law
OMC	Oakland Municipal Code
OPR	Office of Planning and Research
OS	Open Space
OSCAR	Open Space, Conservation and Recreation Element
OUSD	Oakland Unified School District
PCM	parallel climate model
PFC	perfluorocarbon
PGA	peak ground acceleration
PM	particulate matter
PM2.5	particulate matter 2.5 micrometers or less in diameter
PM10	particulate matter 10 micrometers or less in diameter
PMP	Pedestrian Master Plan
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PS	potentially significant
RMP	Risk Management Program
RMS	root mean square
ROG	reactive organic gases

S	significant
SB	Senate Bill
SCS	Sustainable Communities Strategy
SDI	Sustainable Development Initiative
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SLIC	Spills, Leaks, Investigations, and Cleanup Database
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SPC	Structural Performance Category
SPCC	Spill Prevention, Control and Countermeasure
SR	State Route
SQMP	Stormwater Quality Management Plan
SU	significant and unavoidable
SVP	Society of Vertebrate Paleontology
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TAZ	Traffic Analysis Zones
TDM	Transportation Demand Management
TMDL	Total Maximum Daily Load
UNEP	United National Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UPRR	Union Pacific Rail Road
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
v/c	volume to capacity
VMT	vehicle miles traveled
vph	vehicles per hour
WSA	Water Supply Assessment

CHAPTER 1
Introduction

1.1 Background

The Unity Council[1] (Project Applicant), a non-profit community development corporation, proposes to complete Phase 2 (proposed project) of its integrated transit-oriented village, Fruitvale Transit Village, envisioned as a mixed-use development with commercial, retail, institutional, and residential uses. Phase 1 was completed by the Unity Council in 2003/2004 in partnership with the Bay Area Rapid Transit District (BART), the City of Oakland, the Federal Highway Administration, the U.S. Department of Housing and Urban Development, the Ford Foundation and various other agencies. Phase 1 provided 257,000 square feet of a transit-oriented district (TOD) on former BART parking lots. Its uses include a first-story retail corridor between the Fruitvale BART station and International Boulevard,[2] 47 units of mixed-income housing on the upper two floors, shops and restaurants, a 150-car parking garage (and a large parking structure for BART), and 114,000 square feet of community services and office spaces. Among the community services provided in the Phase 1 buildings are the Unity Council's De Colores Child Development Center, the Fruitvale Senior Center, the Cesar Chavez Library, and La Clinica de la Raza (medical facilities). In addition, Phase 1 houses the Unity Council's offices. BART parking was also planned to be accommodated in the five-story parking garage adjacent to the station.

The environmental impacts of Phase 1 were analyzed in a combined Initial Study (IS), which was required by the California Environmental Quality Act (CEQA), and an Environmental Assessment (EA) required by the National Environmental Policy Act (NEPA). Although a Phase 2 is mentioned in the combined IS/EA, the details of that development were unknown when the environmental document was circulated and approved in 1998/1999.[3]

Today, the General Plan land use designation, the zoning and the Coliseum Redevelopment Plan all anticipate a TOD on the project site that will complement the already-built Phase 1 project. When the Phase 2 project site is developed, BART patron parking lost by the development of the Phase 2 site will be replaced with 138 stalls that will be located on a narrow, fenced lot under the elevated BART tracks between 35th and 37th Avenues.

[1] The Unity Council, a non-profit, was formerly known as the Spanish Speaking Unity Council. Founded in 1965, the focus of the Unity Council is economic, social and physical development in the Fruitvale area of Oakland.
[2] East 14th Street was renamed International Boulevard in 1996.
[3] The joint IS/EA were approved by the City of Oakland, BART, and the Federal Highway Administration.

1.2 Proposed Project

The Project Applicant has submitted an environmental review application to the City of Oakland for the Fruitvale Transit Village Phase 2 Project, located in Oakland, Alameda County, California (see **Figures 1-1** and **1-2**). The proposed project consists of the development of 275 residential units in four four-story buildings and a five-story parking structure with approximately 277 parking spaces.

The 3.4-acre project site is located adjacent to the Fruitvale BART station. The site is currently used as a surface parking lot with 547 spaces. The surface parking lot would be removed as part of the proposed project. The Fruitvale Village Phase 1 development, which is a mix of residential and commercial uses, is constructed and located adjacent to the proposed project, west of 35th Avenue.

The County Assessor's parcel numbers for the site are 033-2197-019 and 033-2177-021. The project site's General Plan land use designation is *Neighborhood Center Mixed Use*. The project site is entirely within an S-15, Transit Oriented Development Zone, is within Oakland's San Antonio-Fruitvale-Lower Hills Planning Area for implementation of its General Plan Land Use and Transportation Element (LUTE), and is within the City's Coliseum Redevelopment Project Area.

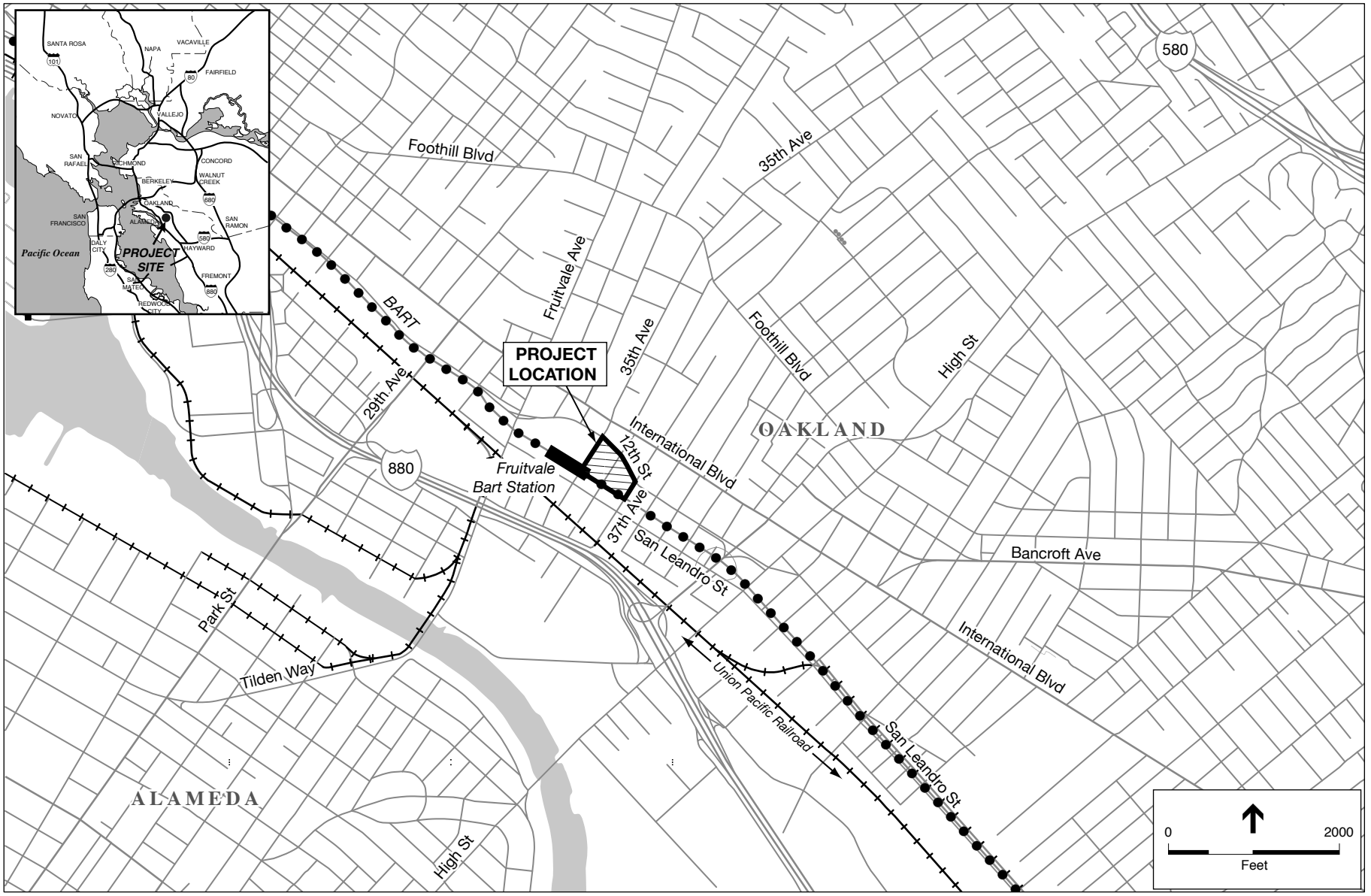
BART owns the project site, and the existing parking lot is managed by the project applicant, The Unity Council, a non-profit community development corporation. Signature Properties would construct the proposed project.

1.3 Environmental Review

1.3.1 Initiating the Environmental Review Process

Subsequent to receiving the application for environmental review, the City of Oakland Community and Economic Development Agency (CEDA), the Lead Agency for the proposed project, determined that the proposed project was subject to California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq. and Section 15000, et seq.) and the State CEQA *Guidelines* (California Code of Regulations) promulgated thereunder (together "CEQA").

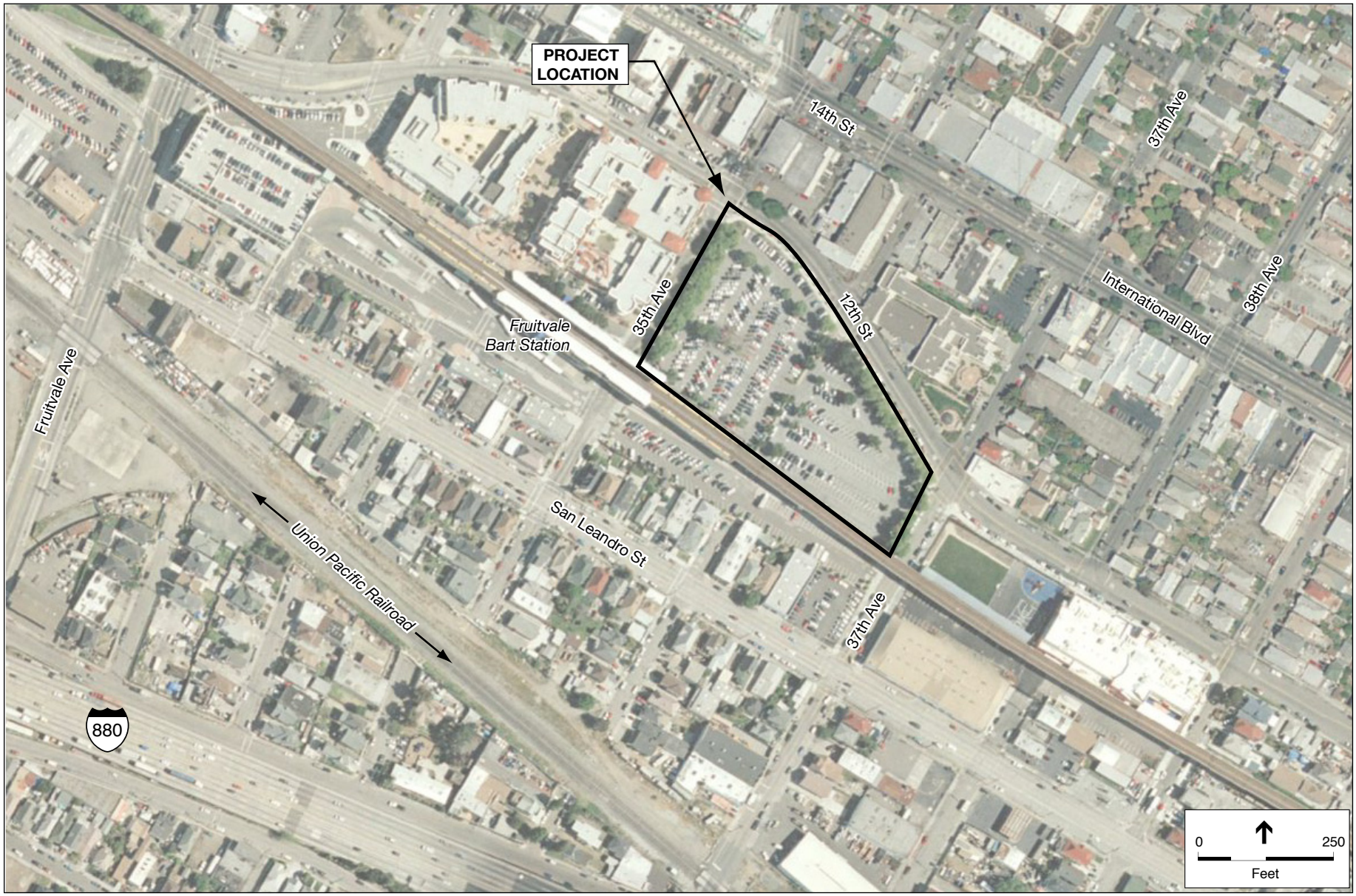
CEDA prepared an Initial Study for this project in December 2008. The Initial Study analyzed all environmental topics identified in Appendix G of the CEQA *Guidelines* and the City of Oakland's CEQA Thresholds / Criteria of Significance document. The analysis found that, with the exception of air quality, noise, and transportation, implementation of the project would result in less-than-significant impacts with respect to all of the other environmental topics with the application of the City of Oakland's Standard Conditions of Approval (see Chapter 4). An errata sheet that outlines changes that have occurred since the Initial Study was published is included with the Initial Study and presented in Appendix A of this focused Draft Environmental Impact Report (EIR).



SOURCE: ESA

Fruitvale Transit Village Phase 2 . 208475

Figure 1-1
Site Location



SOURCE: GlobeXplorer; ESA

Fruitvale Transit Village Phase 2 . 208475

Figure 1-2
Project Location

1.3.2 EIR Scoping

On December 22, 2008, the City issued a Notice of Preparation (NOP) of an Environmental Impact Report (EIR) to governmental agencies and organizations and persons interested in the project. The NOP review period ended on February 5, 2009. CEDA sent the NOP as well as the Initial Study to agencies (see list in Appendix B of this Draft EIR) and requested their input on the scope and content of the environmental topics that should be addressed in this Draft EIR. The Initial Study was also made available to the public, as noted in the NOP. The City Planning Commission held a Scoping Meeting on January 21, 2009 to take comments regarding the scope of the EIR in response to the NOP. The NOP and all comments that CEDA received in response to the NOP are included as Appendix B of this Draft EIR. This Draft EIR addresses all comments received in response to the NOP that are relevant to environmental topics analyzed in this Draft EIR.

Pursuant to Section 15179.5 of the CEQA *Guidelines*, this Draft EIR focuses on analyzing the potential environment effects of the proposed project on air quality, noise, and transportation, which the Initial Study determined could have potentially significant impacts.

1.3.3 Public Review

This Draft EIR is available for public review and comment for the 45-day period identified in the Notice of Availability accompanying this document. During the public review and comment period, written comments on the Draft EIR may be submitted to CEDA at the address indicated on the Notice of Availability. Additionally, the Planning Commission will hold a public hearing and take comments on the Draft EIR, as indicated in the Notice of Availability.

Following the public review and comment period for the Draft EIR, CEDA will prepare responses that address all substantive written and oral comments on the Draft EIR's environmental analyses that are received within the specified review period. The responses and any other information or revisions to the Draft EIR will be compiled in a Response to Comments document. The Draft EIR and its Appendices, together with the Response to Comments document, will constitute a Final EIR (commonly referred to collectively as "EIR") for the proposed project.

1.3.4 Use of this Draft EIR

Pursuant to CEQA, this Draft EIR is a public information document for use by governmental agencies and the public to identify and evaluate potential environmental consequences of the proposed project, to evaluate and recommend mitigation measures that would substantially lessen or eliminate any significant adverse impacts of the project, and to examine a reasonable range of feasible alternatives to the proposed project. The information contained in the EIR will be reviewed and considered by the City of Oakland (see *Project Review and Approval,* below), prior to making a decision to approve, reject or modify the proposed project. To the extent that the project would require discretionary approvals from any responsible agencies, those agencies would also review and consider this Draft EIR prior to taking an action on the project.

1.3.5 Project Review and Approval

The Oakland City Council must certify that it has reviewed and considered the information in the Draft EIR and that the Draft EIR has been completed in conformity with the requirements of CEQA. The Planning Commission must make this determination before any discretionary decision can be made regarding the proposed project. This Draft EIR identifies potentially significant effects that would result from implementation of the proposed project. Therefore, pursuant to CEQA *Guidelines* Section 15091, no public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant effects of the project, unless the public agency makes one or more of the following findings:

1. Changes or alterations have been required in, or incorporated into, the project, which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such agency.

3. Specified economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

1.4 Organization of the Draft EIR

Following this Chapter 1, *Introduction*, this Draft EIR is organized as follows:

Chapter 2, *Summary*, contains a summary of the proposed project and allows the reader to easily reference the analysis presented in the Draft EIR. **Table 2-1**, Summary of Impacts, Standard Conditions of Approval and Mitigation Measures is provided at the end of Chapter 2 as a reader-friendly reference to each of the environmental effects (organized by topic and consistent with the organization of the EIR), proposed mitigation measures, and a determination of the level of significance post-mitigation for each impact. Chapter 2 also summarizes the alternatives to the proposed project, areas of controversy, and issues to be resolved.

Chapter 3, *Project Description***,** describes in detail the project site and surroundings, the background and regulatory context of the proposed project, proposed project characteristics (including the anticipated development phasing and required entitlements), and project objectives. Chapter 3 also identifies other agencies that must consider or approve aspects of the proposed project.

Chapter 4, *Environmental Setting, Impacts, Standard Conditions of Approval and Mitigation Measures*, discusses the environmental setting (existing physical conditions and regulatory framework), the potential environmental impacts of the project, and the potentially significant cumulative impacts and the project's contribution to those impacts for air quality, noise, and transportation. The mitigation measures and Standard Conditions of Approval that would reduce or eliminate potentially significant impacts are provided.

Chapter 5, *Alternatives*, evaluates a reasonable range of alternatives to the proposed project including a No Project Alternative, and identifies an Environmentally Superior Alternative.

Chapter 6, *Impact Overview and Growth-Inducing Impacts*, summarizes the project's significant and unavoidable impacts, less-than-significant impacts, and the project's contribution to potentially significant cumulative impacts. Chapter 6 also describes the proposed project's potential for inducing growth and irreversible environmental effects.

Chapter 7, *Report Preparation*, identifies the authors of the Draft EIR, including City staff and the EIR consultant team. The Project Applicant and key consultants that provided technical resources for the EIR are also identified in this chapter.

Appendices to the Draft EIR are provided at the end of the document and include the NOP, Responses to the NOP, as well as all supporting background documents and technical reports used for the impact analyses for specific topics. All referenced documents and persons contacted to prepare the EIR analyses are listed at the end of each analysis section in Chapter 4, *Environmental Setting, Impacts, Standard Conditions of Approval and Mitigation Measures*, and the documents are available for review by the public at the City of Oakland CEDA, Planning Department-Major Projects office, under reference Case Number ER090001, located at 250 Frank H. Ogawa Plaza, Suite 3315, Oakland, California 94612.

CHAPTER 2
Summary

2.1 Project Overview

The Unity Council (Project Applicant) proposes to complete Phase 2 (proposed project) of Fruitvale Transit Village, envisioned as a mixed-use development with commercial, retail, institutional, and residential uses. Phase 1 was completed by the Unity Council in 2003/2004. Although a Phase 2 is mentioned in the combined IS/EA, the details of that development were unknown when the environmental document was circulated and approved in 1998/1999.

In keeping with the goals of the City's General Plan LUTE Implementation Program for the San Antonio-Fruitvale-Lower Hills Planning Area, the 2004 Housing Element, and the Coliseum Area Redevelopment Plan, which guide development at the project site, the primary project objective is to complete the second phase of the Fruitvale Transit Village by providing 275 transit-oriented multi-family residential units. Development at this site would result in the reuse of underutilized properties to provide sustainable development and smart growth that would strengthen the economic base of the area. The proposed project would substantially change the appearance of an existing urban infill property and develop a project that meets the goals of the City's General Plan.

The Unity Council (project applicant) proposes to develop a 3.4-acre 547-space surface public parking lot with three four-story residential buildings containing 275 units total. The project would construct a new private 277-space parking structure in a first phase, and the three residential buildings would be constructed in three subsequent phases. The parking structure would be used by the occupants of the proposed residential units. Portions of the project site slated for later construction phases and that are not used for construction staging, would continue to operate as surface parking for the public during the construction period.

2.1.1 Site Location

The Fruitvale Transit Village Phase 2 project site is located in the City of Oakland adjacent to the Fruitvale BART station and bounded by the elevated BART tracks to the south, East 12th Street to the north, 35th Avenue to the west, and 37th Avenue to the east[1] (see Figure 1-1, Site Location). Interstate 880 is approximately 1,000 feet (approximately three blocks) to the south of the project

[1] Following Oakland convention, the East Bay Hills are characterized as northerly in compass orientation and the Bay as southerly; thus International Boulevard runs east–west (parallel to East 12th Street and the BART tracks), and Fruitvale Avenue runs north–south (parallel to 35th and 37th Avenues).

site, and the Union Pacific rail tracks exist approximately 800 feet south of the site. The Fruitvale BART station is approximately 450 feet from the center of the project site. The Fruitvale Village Phase 1 development, which is a mix of residential and commercial uses, is developed and located adjacent to the project, west of 35th Avenue.

The County Assessor's parcel numbers for the site are 033-2197-019 and 033-2177-021. The project site's General Plan land use designation is *Neighborhood Center Mixed Use* and the project site is entirely within S-15, Transit Oriented Development Zone. The project site is within Oakland's San Antonio-Fruitvale-Lower Hills Planning Area for implementation of its General Plan LUTE, and within the City's Coliseum Redevelopment Project Area.

2.1.2 Key Components of the Project and Phasing

The project proposes to subdivide the approximately 3.4 acre project site from two lots into four lots. Three of the lots would be developed with three four-story residential buildings. The fourth lot would be developed with a parking structure for the sole use of the proposed project residents. The current use of the project site as surface parking lot would be phased out during the construction of proposed project. The proposed project would be constructed in four phases. Start of construction is tentatively scheduled for 2011 with an anticipated end date in 2015. Construction start and completion would overlap between phases.

Proposed Development

As currently contemplated, construction phase 1 of the project would construct the proposed parking structure would include five stories with six levels of parking and a total of 277 parking spaces. A private access roadway with two-way traffic would be constructed between 35th and 37th Avenues along the south side of the project site.

As currently contemplated, construction phase 2 of the project would be the 93-unit residential building on the eastern portion of the project site. Construction phase 3 would be the 88-unit residential building on the northern portion of the project site. Construction phase 4 would be the 94-unit residential building on the western portion of the project site. The existing parking on the project site would be gradually phased out during the four construction phases.

Pedestrian access to the residential areas would be from 35th Avenue on the east, and East 12th Street from the north. Pedestrian access to the parking garage also would be available from each level of the residential buildings during after each building in constructed (as well as from the north and south sides of the garage developed in construction phase 1).

In addition, there would be a network of walkways between all the project buildings. The proposed project would incorporate five courtyard areas between the proposed buildings for the use of the residents. New street trees would be planted along East 12th Street and 35th and 37th Avenues.

2.1.3 Uses of this EIR

It is anticipated that this EIR will be used for all discretionary approvals required for the project. The project applicant has applied for the following approvals for the proposed project. Each is described in detail in Chapter 3, Project Description, consistent with CEQA *Guidelines*.

- **Vesting Tentative Subdivision Map** (Oakland Municipal Code Chapter 16.08)
- **Preliminary Development Plan and Final Development Plan / Final Design Review for a Planned Unit Development** (Oakland Planning Code Chapter 17.140)
- **Conditional Use Permits** (Oakland Planning Code Chapter 17.134 and 17.116.290 B.5)
- **Design Guidelines / Design Review** (Oakland Planning Code Chapter 17.97.020)
- **Tree Removal Permit** (Oakland Municipal Code Chapter 12.36)
- **Demolition Permits** (Oakland Municipal Code Chapter 15.36)
- **Encroachment Permits** (Oakland Municipal Code Chapter 12.08)
- **Excavation and Grading Permits** (Oakland Municipal Code Chapter 12.12)
- **Other Various Building Permits** (Oakland Municipal Code Title 15)

2.2 Environmental Impacts, Standard Conditions of Approval and Mitigation Measures

All impacts, Standard Conditions of Approval and mitigation measures identified in this Draft EIR are summarized in **Table 2-1**, Summary of Impacts, Standard Conditions of Approval and Mitigation Measures, and Residual Impacts, at the end of this chapter. Table 2-1 includes all impact statements, Standard Conditions of Approval, recommended mitigation measures, and the level of significance of the impact after recommended mitigation measures are implemented.

The proposed project would result in significant and unavoidable impacts associated with transportation because the impacts cannot be reduced to less-than-significant levels even with feasible mitigation measures applied.

2.3 Alternatives

Chapter 5 presents a detailed analysis of a reasonable range of alternatives to the proposed project. The alternatives to the project that are analyzed in detail in this Draft EIR are:

- No Project Alternative;
- Lower Density Alternatives—25 percent and 50 percent reductions
- Lower Density Alternative (80 percent reduction); and
- Open Space/Passive Recreation Alternative (benches, tot lot, landscaping, walkways).

The following alternatives were considered but rejected as infeasible and are discussed briefly in Chapter 5:

- High Density Alternative
- Mixed-use with Commercial Alternative

The Open Space/Passive Recreation Alternative is considered the Environmentally Superior Alternative, which CEQA requires the EIR identify. This alternative would reduce to the greatest extent the significant and unavoidable impacts that would occur with the proposed project.

2.4 Areas of Controversy

No areas of controversy are known to the City of Oakland as of publication of this Draft EIR. While not controversial, the following scoping topics were raised in written or oral comments received in response to the NOP of this EIR (which are included in Appendix B to this EIR) and comments stated during the City's scoping meetings held by the Oakland Planning Commission. Each of these topics is addressed in this Draft EIR or in the Initial Study (Appendix A).

Scoping topics (including some non-CEQA issues) include, but are not limited to, the following:

- *Water Quality and Wastewater Flows* (addressed in Initial Study Section VI, *Geology and Soils* [page 49], Section VIII, *Hydrology and Water Quality* [page 52–57], XVI, *Utilities and Service Systems* [page 75–77])
  - Submit soil and groundwater quality data to East Bay Municipal Utilities District (EBMUD) for review
  - Determine projected peak wet weather wastewater flows
  - Consider feasibility of using recycled water
  - Incorporate water conservation measures
- *Transportation, Circulation, and Parking* (addressed in Section 4.3 in this Draft EIR)
  - Use of Alameda County Congestion Management Agency Countywide traffic model
  - Consider impacts of the project on the Metropolitan Transportation System (MTS)
  - Consider adequacy of any mitigation measures relative to CMA criteria
  - Consider potential impacts on Congestion Management Program (CMP) transit levels of service
  - Consider potential increases in traffic leading to congestion and/or greenhouse gas emission impacts
  - Consider use of Transportation Demand Management measures
  - Consider opportunities to promote countywide bicycle routes identified in the Alameda Countywide Bicycle Plan
  - Prepare a Traffic Impact Study (TIS)

- Consider how to address direct and cumulative impacts when processing entitlement applications for the proposed project and their impacts/mitigation measures to rail corridors and at-grade rail crossings
- Consider improvements to the safety of the at-grade crossings
- Consider installation of safety improvements such as ADA compliant detectable warning and concrete sidewalks
- Consider installation of raised medians at railroad crossings

TABLE 2-1
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.1 Air Quality		
Impact AIR-1: Activities associated with demolition, site preparation, and construction throughout development of the project would generate criteria air pollutants. (Less than Significant under existing and proposed BAAQMD thresholds)	**Standard Conditions of Approval AIR-1**, *Dust Control*; **AIR-2**, *Construction Emissions*; and **AIR-4**, *Asbestos Removal in Structures*	Less than Significant
Impact AIR-2: The project would result in increased emissions of criteria pollutants and their precursors from vehicular traffic to and from the project site, however, the emission increases from the project would not exceed BAAQMD significance criteria. (Less than Significant under the existing and proposed BAAQMD Thresholds)	None Required	
Impact AIR-3: Mobile emissions generated by project traffic would increase carbon monoxide concentrations at intersections in the project vicinity. (Less than Significant)	None Required	
Impact AIR-4: The proposed project could result in exposure of persons to substantial levels of Toxic Air Contaminants (TACs) which may result in adverse health effects. (Significant during construction under proposed BAAQMD Thresholds only)	**Mitigation Measure AIR-4:** The project applicant and its contractors shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used during construction of the project would achieve a project wide fleet-average 20 percent NOx reduction and a 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options from reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as such become available.	Less than Significant
Impact AIR-5: The proposed project is fundamentally consistent with the growth assumptions of the Bay Area Clean Air Plan. (Less than Significant)	None Required	
Impact AIR-6: Construction and operation of the project would not result in a cumulatively considerable increase in greenhouse gas emissions. (Significant if proposed BAAQMD Thresholds are adopted)	**Mitigation Measure AIR-6:** The applicant shall be required to develop a GHG Reduction Plan for City review and approval, which shall reduce GHG emissions to the maximum extent feasible. Items in this plan may include: • Free transit passes for all residents; • Electrically powered landscape equipment; • Plant shade trees within 40 feet of the south side or within 60 feet of the west sides of the property; • Require cool roof materials (albedo >= 30); • Require smart meters and programmable thermostats**;**	Significant and Unavoidable if proposed BAAQMD Thresholds are adopted.

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.1 Air Quality (cont.)		
Impact AIR-6 (cont.)	• Install solar water heaters; • Install solar panels on residential buildings; and • HVAC duct sealing.	
Impact AIR-7: The project would conflict with an applicable plan, policy or regulation of an appropriate regulatory agency adopted for the purpose of reducing greenhouse gas emissions. (Significant if proposed BAAQMD Thresholds are adopted)	**Mitigation Measure AIR-7:** Implement Mitigation Measure AIR-6.	Significant and Unavoidable if proposed BAAQMD Thresholds are adopted.
4.2 Noise		
Impact NOI-1: Construction activities would intermittently and temporarily generate noise levels above existing ambient levels in the project vicinity. (Significant)	**Standard Conditions of Approval NOI-1**, *Days/Hours of Construction Operation*, and **NOI-3**, *Noise Control*	Less than Significant
Impact NOI-2: Noise from project-generated traffic and other operational noise sources, such as mechanical equipment, truck loading/unloading, etc., would not exceed the Oakland Noise Ordinance standards and impact nearby sensitive receptors. (Less than Significant)	None Required	
Impact NOI-3: The project would place noise-sensitive multifamily residential uses in a noise environment characterized as "normally unacceptable" for such uses by the City of Oakland. (Significant)	**Standard Condition of Approval NOI-4**, *Interior Noise*	Less than Significant
Impact NOI-4: The project would expose sensitive residential uses to ground-borne vibration from trains passing by on the UPRR tracks. (Significant)	**Standard Condition of Approval NOI-6**, *Vibration*	Less than Significant
Impact NOI-5: The proposed project, together with past, present, existing, approved, pending, and foreseeable future development included in the area, could result in long-term traffic increases that could cumulatively increase noise levels in the project area. (Less than Significant)	None Required	
4.3 Transportation, Circulation and Parking		
Impact TRANS-1: Buildout of the proposed project would cause an increase in the average delay by more than six seconds during the PM peak hour for the critical eastbound (East 9th Street) through movement at Intersection #4 Fruitvale Avenue / East 9th Street, which currently operates at an unacceptable LOS E. (Significant)	**Mitigation Measure TRANS-1:** Modify the PM peak hour signal timing at the intersection of Fruitvale Avenue / East 9th Street to increase the green time for the eastbound and westbound (East 9th Street) approaches and decrease the green time for the northbound and southbound (Fruitvale Avenue) through movements.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-2: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at Intersection #4 - Fruitvale Avenue and East 9th Street, which would operate at an unacceptable LOS F under 2015 Baseline conditions. (Significant)	**Mitigation Measure TRANS-2:** Modify the PM peak-hour signal phasing at the intersection of Fruitvale Avenue / East 9th Street to allow protected-permitted left-turn movements on the northbound and southbound (Fruitvale Avenue) through movements, and refine the signal phase time. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below: - 2070L Type Controller; - GPS clock installation (if not already in the City's ITS Master Plan); - ADA-compliant curb ramps on all corners (if not already installed); - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons); - Countdown Pedestrian Signals; and - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet. • Signal timing plans for the signals in the coordination group. The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-3: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the PM peak hour for the critical eastbound (East 12th Street) through movement at Intersection #6 - 35th Avenue and East 12th Street, which would operate at an unacceptable LOS F under 2015 Baseline conditions. (Significant)	**Mitigation Measure TRANS-3:** Modify the PM peak-hour traffic signal timing at the intersection of 35th Avenue / East 12th Street to provide increased green time for the east-west (East 12th Street) approach and decreased green time for the north-south (35th Avenue) approach. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below: - 2070L Type Controller; - GPS clock installation (if not already in the City's ITS Master Plan); - ADA-compliant curb ramps on all corners (if not already installed); - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons); - Countdown Pedestrian Signals; and - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet. • Signal timing plans for the signals in the coordination group. The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-4: Buildout of the proposed project would cause the PM peak-hour LOS to degrade from an acceptable LOS D under 2015 Baseline conditions to an unacceptable LOS E at Intersection #8 - San Leandro Street and 35th Avenue. (Significant)	**Mitigation Measure TRANS-4:** At the intersection of San Leandro Street / 35th Avenue, eliminate the protected left-turn signal phase for westbound San Leandro Street, and optimize the signal split during the PM peak-hour. • To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below: - 2070L Type Controller; - GPS clock installation (if not already in the City's ITS Master Plan); - ADA-compliant curb ramps on all corners (if not already installed); - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons); - Countdown Pedestrian Signals; and - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet. • Signal timing plans for the signals in the coordination group. The project applicant shall fund the cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-5: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at Intersection #14 - San Leandro Street and High Street, which would operate at an unacceptable LOS F under 2015 Baseline conditions. (Significant)	**Mitigation Measure TRANS-5:** Modify the PM peak-hour traffic signal phasing at the intersection of San Leandro Street / High Street to provide increased green time for the east-west (San Leandro Street) approach and decreased green time for the north-south (High Street) approach. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below: - 2070L Type Controller; - GPS clock installation (if not already in the City's ITS Master Plan); - ADA-compliant curb ramps on all corners (if not already installed); - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons); - Countdown Pedestrian Signals; and - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet. • Signal timing plans for the signals in the coordination group. The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-6: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical southbound (High Street) through movement at Intersection #15 - High Street and Coliseum Way, which would operate at an unacceptable LOS F under 2015 Baseline conditions. (Significant)	**Mitigation Measure TRANS-6:** Modify the AM peak-hour traffic signal timing at the intersection of High Street / Coliseum Way to provide increased green time for the southbound (High Street) through movement and decreased green time for the northbound (High Street) left-turn movement. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below: - 2070L Type Controller; - GPS clock installation (if not already in the City's ITS Master Plan); - ADA-compliant curb ramps on all corners (if not already installed); - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons); - Countdown Pedestrian Signals; and - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet. • Signal timing plans for the signals in the coordination group. The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-7: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the PM peak hour for the critical southbound (Fruitvale Avenue) through movement at Intersection #1 - Fruitvale Avenue / International Boulevard, which would operate at LOS F under 2035 Baseline conditions. (Significant)	**Mitigation Measure TRANS-7:** Modify the PM peak-hour traffic signal timing at the intersection of Fruitvale Avenue / International Boulevard to provide increased green time for the north-south (Fruitvale Avenue) approaches and decreased green time for the east-west (International Boulevard) approaches. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below: - 2070L Type Controller - GPS clock installation (if not already in the City's ITS Master Plan) - ADA-compliant curb ramps on all corners (if not already installed) - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons) - Countdown Pedestrian Signals - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet • Signal timing plans for the signals in the coordination group. The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-8: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the PM peak hour for the critical southbound (Fruitvale Avenue) through movement at Intersection #2 - Fruitvale Avenue / East 12th Street, which would operate at LOS F under 2035 Baseline conditions. (Significant)	**Mitigation Measure TRANS-8:** Modify the PM peak-hour signal phasing at the intersection of Fruitvale Avenue / East 12th Street to provide protected-permissive left-turn phasing for eastbound and westbound (East 12th Street) and to provide increased green time for southbound (Fruitvale Avenue) and decreased green time for eastbound (East 12th Street). To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below: - 2070L Type Controller; - GPS clock installation (if not already in the City's ITS Master Plan); - ADA-compliant curb ramps on all corners (if not already installed); - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons); - Countdown Pedestrian Signals; and - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet. • Signal timing plans for the signals in the coordination group. The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-9: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical northbound (Fruitvale Avenue) through movement at Intersection #3 - Fruitvale Avenue / San Leandro Street, which would operate at LOS F under 2035 Baseline conditions. (Significant)	**Mitigation Measure TRANS-9:** Modify the AM peak-hour traffic signal timing at the intersection of Fruitvale Avenue / San Leandro Street to provide increased green time for the north-south (Fruitvale Avenue) approaches and decreased green time for the east-west (San Leandro Street) approaches. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below: - 2070L Type Controller; - GPS clock installation (if not already in the City's ITS Master Plan); - ADA-compliant curb ramps on all corners (if not already installed); - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons); - Countdown Pedestrian Signals; and - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet. • Signal timing plans for the signals in the coordination group. The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-10: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at Intersection #4 - Fruitvale Avenue and East 9th Street, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical eastbound (East 9th Street) through movement. (Significant)	**Mitigation Measure TRANS-10:** Modify the PM peak-hour signal phasing at the intersection of Fruitvale Avenue / East 9th Street to provide protected-permissive left-turn phasing for northbound and southbound (Fruitvale Avenue) and to provide increased green time for the east-west (East 9th Street) approaches and decreased green time for the north-south (Fruitvale Avenue) approaches. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below: - 2070L Type Controller; - GPS clock installation (if not already in the City's ITS Master Plan); - ADA-compliant curb ramps on all corners (if not already installed); - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons); - Countdown Pedestrian Signals; and - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet. • Signal timing plans for the signals in the coordination group. The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-11: Buildout of the proposed project would cause the PM peak-hour LOS to degrade from an acceptable LOS D under 2035 Baseline conditions to an unacceptable LOS E at Intersection #5 - Fruitvale Avenue / East 8th Street. (Significant)	**Mitigation Measure TRANS-11:** Modify the PM peak-hour traffic signal timing at the intersection of Fruitvale Avenue / East 8th Street to provide increased green time for the east-west (East 8th Street) approaches and decreased green time for the north-south (Fruitvale Avenue) approaches. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below: - 2070L Type Controller - GPS clock installation (if not already in the City's ITS Master Plan) - ADA-compliant curb ramps on all corners (if not already installed) - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons) - Countdown Pedestrian Signals - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet • Signal timing plans for the signals in the coordination group. The project applicant shall fund the cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-12: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM peak hour at Intersection #6 - 35th Avenue and East 12th Street, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM and PM peak hours for the critical northbound (35th Avenue) through movement. (Significant)	**Mitigation Measure TRANS-12:** Restripe the northbound (35th Avenue) approach at the intersection of 35th Avenue / East 12th Street to provide one shared left-through lane and one shared through-right lane, which would require removal of two parking or loading spaces on the west side of 35th Avenue. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • A striping plan, and a traffic signal timing plan (if retiming of the traffic signal is needed). The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	Less than Significant
Impact TRANS-13: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at Intersection #8 - San Leandro Street and 35th Avenue, which would operate at LOS F under 2035 Baseline conditions. (Significant)	**Mitigation Measure TRANS-13:** Restripe the southbound (35th Avenue) approach at the intersection of San Leandro Street / 35th Avenue to provide one shared left-through lane and one exclusive right-turn lane, which would require removal of up to three parking spaces on the west side of 35th Avenue. Also, modify the PM peak-hour traffic signal timing to provide increased green time for the westbound (San Leandro Street) through movement and decreased green time for the north-south (35th Avenue) approaches. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below: - 2070L Type Controller - GPS clock installation (if not already in the City's ITS Master Plan)	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-13 (cont.)	- ADA-compliant curb ramps on all corners (if not already installed) - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons) - Countdown Pedestrian Signals - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet • Signal timing plans for the signals in the coordination group. The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	
Impact TRANS-14: Buildout of the proposed project would add more than 10 trips during the PM peak hour to Intersection #9 - 37th Avenue / East 12th Street, which would meet signal warrants, and would operate at LOS F under 2035 Baseline conditions. (Significant)	**Mitigation Measure TRANS-14:** Signalize the intersection of 37th Avenue / East 12th Street when the Caltrans Manual on Uniform Traffic Control Devices signal warrants are met. The project applicant shall pay for future signal warrant analysis (estimated to be $21,000 in 2009 dollars) to be done in three-year intervals, and its fair-share cost of signalization of this intersection.	Less than Significant
Impact TRANS-15: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds at during the AM and PM peak hours Intersection #10 - San Leandro Street / 37th Avenue, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical westbound (San Leandro Street) through movement. (Significant)	**Mitigation Measure TRANS-15:** Restripe the southbound (37th Avenue) approach at the intersection of San Leandro Street / 37th Avenue to provide one exclusive left-turn lane and one shared through-right lane; and restripe the westbound (San Leandro Street) approach to provide one shared left-through lane, one through lane and one exclusive right-turn lane. The latter restriping would require removal of up to two parking spaces on the north side of San Leandro Street. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • A striping plan, and a traffic signal timing plan (if retiming of the traffic signal is needed). The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-16: Buildout of the proposed project would cause the PM peak-hour LOS to degrade from an acceptable LOS D under 2035 Baseline conditions to an unacceptable LOS E at Intersection #11 - International Boulevard / 38th Avenue. (Significant)	**Mitigation Measure TRANS-16:** Modify the PM peak-hour traffic signal timing at the intersection of International Boulevard / 38th Avenue to increase the cycle length from 65 seconds to 67 seconds. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below: - 2070L Type Controller - GPS clock installation (if not already in the City's ITS Master Plan) - ADA-compliant curb ramps on all corners (if not already installed) - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons) - Countdown Pedestrian Signals - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet • Signal timing plans for the signals in the coordination group. To implement this measure, the project applicant shall submit signal timing plans to City of Oakland's Transportation Services Division for review and approval. As a condition of project approval, the traffic signal would be upgraded to include a GPS clock and pedestrian signal heads. The project applicant shall fund the cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-17: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM peak hour at Intersection #13 - International Boulevard / High Street, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical southbound (High Street) through movement. (Significant)	**Mitigation Measure TRANS-17:** Modify the AM peak-hour signal phasing at the intersection of International Boulevard / High Street to provide protected-permissive left-turn phasing for westbound (International Boulevard) and optimize the signal split during the AM peak hour. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below: - 2070L Type Controller - GPS clock installation (if not already in the City's ITS Master Plan) - ADA-compliant curb ramps on all corners (if not already installed) - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons) - Countdown Pedestrian Signals - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet • Signal timing plans for the signals in the coordination group. The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-18: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM and PM peak hours at Intersection #14 - San Leandro Street / High Street, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay during the PM peak hour by more than four seconds for the critical northbound (High Street) through movement. (Significant)	**Mitigation Measure TRANS-18:** No feasible mitigation measure was identified to reduce the project impact to less than significant level. Optimizing the signal split times would improve the average delay for the overall intersection to better than 2035 Baseline conditions during the AM and PM peak hours, but would result in secondary impacts on critical movement delays. Widening either High Street or San Leandro Street to provide additional capacity would also lessen the project impact, but is not feasible due to right-of-way constraints. As a condition of project approval, the traffic signal would be upgraded to current City of Oakland standards (e.g., GPS clock or interconnect, audible pedestrian signal heads, and ADA-compliant curb ramps on all corners).	Significant and Unavoidable
Impact TRANS-19: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM and PM peak hours at Intersection #15 - Coliseum Way / High Street, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical southbound (High Street) left-turn movement. (Significant)	**Mitigation Measure TRANS-19:** Modify the AM peak-hour traffic signal timing at the intersection of Coliseum Way / High Street to provide increased green time for the southbound (High Street) approach and decreased green time for the northbound (High Street) left-turn movement. Modify the PM peak-hour traffic signal timing to provide increased green time for the north-south (High Street) approaches and decreased green time for the westbound (Coliseum Way) approach. To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval: • Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below: - 2070L Type Controller - GPS clock installation (if not already in the City's ITS Master Plan)	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, STANDARD CONDITIONS OF APPROVAL, MITIGATION MEASURES, AND RESIDUAL IMPACTS

Environmental Impact	Standard Conditions of Approval and Mitigation Measures	Level of Significance after application of Standard Conditions of Approval and Mitigation
4.3 Transportation, Circulation and Parking (cont.)		
Impact TRANS-19 (cont.)	- ADA-compliant curb ramps on all corners (if not already installed) - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons) - Countdown Pedestrian Signals - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet • Signal timing plans for the signals in the coordination group. Services Division for review and approval. As a condition of project approval, the traffic signal would be upgraded to include a GPS clock and pedestrian signal heads. The project applicant shall contribute its fair-share cost of preparing and implementing this measure.	
Impact TRANS-20: Buildout of the proposed project would add traffic to the freeway ramps and mainline segments of I-880. (Less than Significant)	None Required	
Impact TRANS-21: Buildout of the proposed project would contribute to 2015 changes to traffic conditions on the regional and local roadways. (Significant)	**Mitigation Measure TRANS-21:** Mitigation of the project's significant impact on eastbound San Leandro Street west of 35th Avenue is not feasible. An additional lane on eastbound San Leandro Street would require removal of the parking lane or widening of San Leandro Street. However, such measures are considered infeasible due to physical constraints caused by on-street parking demand and existing right-of-way.	Significant and Unavoidable
Impact TRANS-22: Buildout of the proposed project would contribute to 2015 changes to traffic conditions on the regional and local roadways. (Significant)	**Mitigation Measure TRANS-22:** Mitigation of the project's significant impact on eastbound San Leandro Street west of High Street is not feasible. An additional lane on eastbound San Leandro Street would require removal of the parking lane or widening of San Leandro Street. However, such measures are considered infeasible due to physical constraints caused by on-street parking demand and existing right-of-way.	Significant and Unavoidable

CHAPTER 3
Project Description

3.1 Existing Site Conditions

3.1.1 Background and Regulatory Context

The Unity Council (Project Applicant) proposes to complete Phase 2 (proposed project) of Fruitvale Transit Village, envisioned as a mixed-use development with commercial, retail, institutional, and residential uses. Phase 1 was completed by the Unity Council in 2003/2004 and provided a first-story retail corridor between the Fruitvale BART station and International Boulevard, 47 units of mixed-income housing on the upper two floors, shops and restaurants, a 150-car parking garage (and a large parking structure for BART), and 114,000 square feet of community services and office spaces. The environmental impacts of Phase 1 were analyzed in a combined IS, which was required by CEQA, and an EA required by NEPA. Although a Phase 2 is mentioned in the combined IS/EA, the details of that development were unknown when the environmental document was circulated and approved in 1998/1999.

The project site's General Plan land use designation is *Neighborhood Center Mixed Use*, which permits and encourages development "characterized by smaller scale pedestrian-oriented, continuous street frontage with a mix of retail, housing, office, active open space, eating and drinking places, personal and business services, and smaller scale educational, cultural, or entertainment uses."

The project site is entirely within an S-15, Transit Oriented Development Zone, "intended to create, preserve and enhance areas devoted primarily to serve multiple nodes of transportation and to feature high-density residential, commercial, and mixed-use developments to encourage a balance of pedestrian-oriented activities, transit opportunities, and concentrated development" (Section 17.97 of the Oakland Planning Code). The project site is within Oakland's San Antonio-Fruitvale-Lower Hills Planning Area established by the General Plan LUTE, and within the City's Coliseum Redevelopment Project Area.

In keeping with the goals of the City's General Plan LUTE Implementation Program for the San Antonio-Fruitvale-Lower Hills Planning Area, the 2004 Housing Element, and the Coliseum Area Redevelopment Plan, which guide development at the project site, the primary project objective is to complete the second phase of the Fruitvale Transit Village by providing 275 transit-oriented multi-family residential units. Development at this site would result in the reuse of underutilized properties to provide sustainable development and smart growth that would strengthen the

economic base of the area. The proposed project would substantially change the appearance of an existing urban infill property and develop a project that meets the goals of the City's General Plan.

3.1.2 Project Location and Access

The project site is located in the City of Oakland, Alameda County, California, adjacent to the Fruitvale BART station. The site boundaries consist of the elevated BART tracks to the south, East 12th Street to the north, 35th Avenue to the west, and 37th Avenue to the east.[1] (See Figure 1-1, Site Location.) The Fruitvale BART station is approximately 450 feet away (approximately one block) from the center of the project site. AC Transit provides bus service to and from the Fruitvale BART station and has several routes on International Boulevard, which is located one block north of the project site. Interstate 880 (I-880) is approximately 1,000 feet (approximately three blocks) south of the project site, and the Union Pacific Railroad (UPRR) tracks run approximately 800 feet south from the center of the project site. The nearest direct access to I-880 is via 42nd Avenue five blocks east of the site, and Fruitvale Avenue three blocks west of the site.

3.1.2 Existing Project Site Characteristics

The County Assessor's parcel numbers for the site are 033-2197-019 and 033-2177-021.

The 3.4-acre project site is currently a fee-based surface parking lot with 547 parking spaces for public use and BART patrons. Several mature trees grow intermittently throughout the parking lot, and street trees along the perimeter of the project site. The lot also includes small utility structures and light poles for night-lighting fixtures throughout.

Surrounding Area Characteristics

As depicted in the aerial photograph in Figure 1-2, one block north of the project site is International Boulevard, a busy commercial-retail corridor and major arterial. The businesses along International Boulevard include retail shops, restaurants, travel agencies and gas stations. The area north of International Boulevard is mostly residential, with small neighborhood parks and stores, St. Elizabeth's Church, and St. Elizabeth High School.

East and south of the project site, along and beyond San Leandro Street, are a mix of residential and commercial and light industrial uses. The UPRR tracks lie south of San Leandro Street, and I-880 is further south (see Figure 1-1).

[1] Following Oakland convention, the East Bay Hills are characterized as northerly in compass orientation and San Francisco Bay as southerly; thus International Boulevard runs east–west (parallel to East 12th Street and the BART tracks), and Fruitvale Avenue runs north–south (parallel to 35th and 37th Avenues).

West of the project site is the Cesar Chavez branch of the Oakland Public Library and a multi-story BART parking garage. Fruitvale Avenue, a busy thoroughfare with a variety of businesses and retail shops, is also west of the project site.

The Fruitvale Village Phase 1 development, which is a mix of residential and commercial uses, is located adjacent to the project, west of 35th Avenue.

3.2 Project Objectives

The Project Objectives for the proposed project are as follows:

- Promote the goals of the General Plan LUTE for the San Antonio-Fruitvale-Lower Hills Planning Area, the 2004 Housing Element, and the Coliseum Area Redevelopment Plan.
- Provide affordable housing.
- Reduce traffic congestion and related air quality impacts in the area by providing 275 transit-oriented oriented multi-family residential units located immediately adjacent to BART and other local and regional transit routes.
- Develop an underutilized property in a manner that improves environmental conditions at the site, and that provides an attractive, compatible development of this area.
- Incorporate feasible site development and building design standards to promote sustainable design principles and smart growth.
- Strengthen the economic base of the area.
- Complete the second and final phase of the Fruitvale Transit Village, which was designed to take advantage of the transit service in the area, and to provide opportunities for residents to live in close proximity to community services, retail and public transit.

3.3 Proposed Project Components

This section describes the components of the Fruitvale Transit Village Phase 2 project, analyzed in this EIR.

The proposed project would consist of four construction phases. The parking structure would be constructed first, and would be used by the tenants of the residences, which would be built in subsequent phases. The parking structure would provide 277 parking spaces. The 93 residences constructed in the second phase and the 88 residences constructed in third phase would be market-rate housing. The affordable housing component would consist of 94 residences, which would be constructed in the fourth phase. These construction phases may overlap.

3.3.1 Parking Structure

A proposed parking structure for the use of the proposed project residents would be developed in construction phase 1. The structure would include five stories with six levels of parking and a total of 277 parking spaces. Access to the parking structure would be from a proposed access road on the southern end of the site, which also would be constructed in the first phase. The parking structure would have two elevators and two staircases. Pedestrian access would be available on the north side of the parking structure as well as from the access road on the south side. Pedestrian access to the garage would also be available from each level of the residential buildings (see **Figure 3-1**).

3.3.2 Residential Buildings

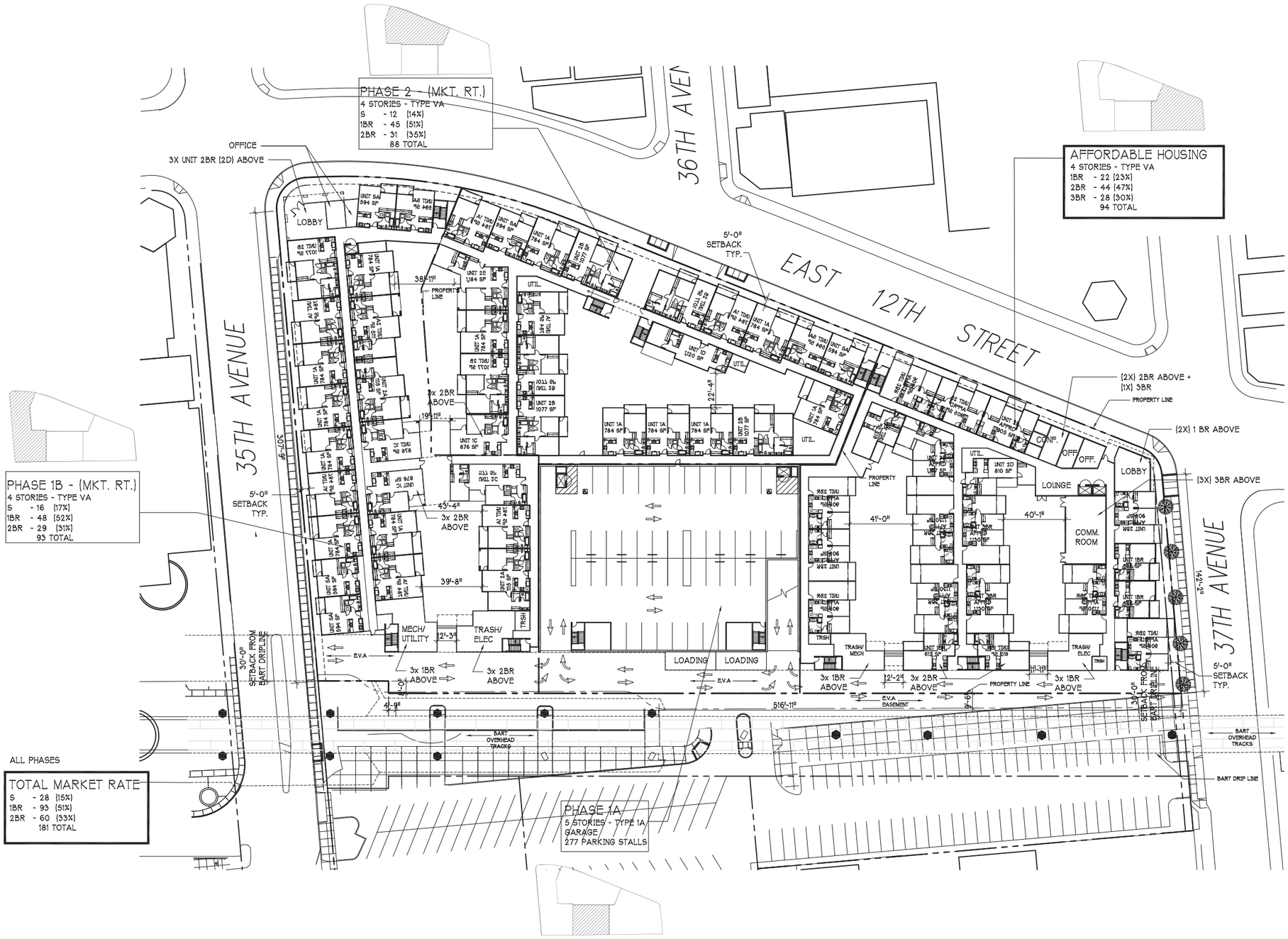
Construction on the 93-unit residential building on the eastern portion of the project site would start after construction of the parking garage and would consist of market-rate housing. Next, the residential building on the northwestern portion of the project site would be constructed, which would consist of 88 market-rate housing units. The final part of the project would be construction of the 94 units of affordable housing in a residential building located on the western portion of the project site. **Table 3-1** below presents the unit mix for construction phases 2 through 4 of the project and **Table 3-2** below describes the total gross building square footage.

TABLE 3-1
UNIT MIX

Unit Type	Residential Building 1	Residential Building 2	Residential Building 3	Total	%
Studio	16	12	0	28	10%
1 Bedroom	48	45	22	115	42%
2 Bedroom	29	31	44	104	38%
3 Bedroom	0	0	28	28	10%
Total	**93**	**88**	**94**	**275**	**100%**

TABLE 3-2
GROSS BUILDING AREA

Level	Parking Garage	Residential Building 1	Residential Building 2	Residential Building 3	Total
1	20,200	25,612	25,081	28,267	99,160
2	10,100	26,954	25,415	28,658	91,127
3	20,200	26,954	25,415	28,658	101,227
4	20,200	26,954	25,415	28,658	101,227
5	20,200	0	0	0	20,200
6	20,200	0	0	0	20,200
Total	111,100	106,474	101,326	114,241	433,141



SOURCE: HKIT Architects (November 13, 2009)

Fruitvale Transit Village Phase 2 . 208475

Figure 3-1
Proposed Project Site Plan

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3.3.3 Proposed Demolition and Construction Phasing

The project site is a surface parking lot with no permanent structures. The proposed project would remove existing pavement and driveways and relocate or remove existing underground utilities, light poles and trees. Figure 3-1 shows the proposed project site plan and **Figure 3-2** shows a conceptual massing model for the proposed project.

The project would be constructed in four construction phases as shown in **Table 3-3** below and in Figure 3-1, Proposed Project Site Plan. The start of construction is tentatively scheduled for 2011 with an anticipated end date in 2015. Each phase of construction is expected to be about 18 months. There may be some overlap between the four construction phases. Construction staging would likely occur on-site through construction phase 2 and would require staging either in the BART parking lot under the BART tracks south of the site, or along 37th Avenue during construction of the affordable housing.

During construction, parking on the project site would be phased out as shown in **Table 3-4** below.

TABLE 3-3
SITE DATA AND CONSTRUCTION DURATION

	Acreage	Square Footage	No. of Units	Units/Acre
Construction Phase 1: 5-story Parking Structure (2011 – 2012)	.58	25,446	0	0
Construction Phase 2: 4-story residential building (2012 – 2013)	0.92	40,157	93	100.88
Construction Phase 3: 4-story residential building (2013 – 2014)	0.88	38,260	88	100.19
Construction Phase 4: 4-story residential building (2014 – 2015)	1.03	44,881	94	91.23
Total	**3.4**	**148,744**	**275**	**80.53**

TABLE 3-4
PARKING SUMMARY

Types of Stalls	Construction Phase 1	Construction Phase 2	Construction Phase 3	Construction Phase 4
Existing Surface Parking	288	195	87	0
New Parking Structure	277	277	277	277
Total Parking on site	565	472	364	277

Access and Circulation

An access roadway with two-way traffic would be constructed between 35th and 37th Avenues, along the south side of the project site and immediately north of the elevated BART tracks. The vehicle entrance to the proposed parking structure would be from this new access road.

Pedestrian entrances to the project site are at 35th Avenue and East 12th Street, mid-block on East 12th Street and at 37th Avenue and East 12th Street. Pedestrian access to the residential buildings from the proposed parking structure would also be provided. In addition, there would be a network of walkways between all the project buildings. Pedestrians would access the adjacent BART Station by exiting the project site and walking along 35th Avenue.

The design of the sidewalks, curb ramps and other pedestrian amenities would be consistent with the City's design standards and would meet the accessibility guidelines of the Americans with Disabilities Act (ADA).

Landscaping, Open Space and Site Coverage

The proposed project would include five courtyard areas located between the proposed buildings designed for the use of the residents. These courtyards would be landscaped with flowering shrubs, trellises with flowering vines, and trees. Walkways would be paved with permeable pavement, pavers, or other such material that would contribute to storm water management. The courtyards would have a mix of passive recreational areas with seating, water features, and some outdoor fireplaces for use of project residents (outdoor fireplaces would not be wood-burning). New street trees would be planted along East 12th Street and along 35th and 37th Avenues. **Figure 3-3** shows the proposed landscaping plan.

Utilities

The project site and immediately adjacent area are served by all existing utilities provided by local providers: water and wastewater (East Bay Municipal Utilities District), stormwater drainage (Alameda County Flood Control and Water Conservation District and the Oakland Public Works Agency), electricity and gas service (Pacific Gas & Electric), and solid waste service (Waste Management of Alameda County). Discussion of existing site utilities is provided in Section XVI, *Utilities and Service Systems* of the Initial Study (see Appendix A of this Draft EIR).

3.4 Use of this EIR/Project Approvals

As discussed in Chapter 1, the City of Oakland is the Lead Agency responsible for preparation of this EIR (pursuant to CEQA *Guidelines* Section 15051). This EIR is intended to be used to provide CEQA clearance for all required discretionary approvals for the project. Both the Planning Commission and the City Council will make recommendations and/or decisions on the required discretionary actions. At the time this EIR was prepared, the discretionary approvals (including ministerial actions) anticipated to be required for the project include those listed below, without limitation.

Corner at 35th and East 12th

Corner at 37th and East 12th

Entrance at 36th Avenue

SOURCE: HKIT Architects

Figure 3-2
Massing Model

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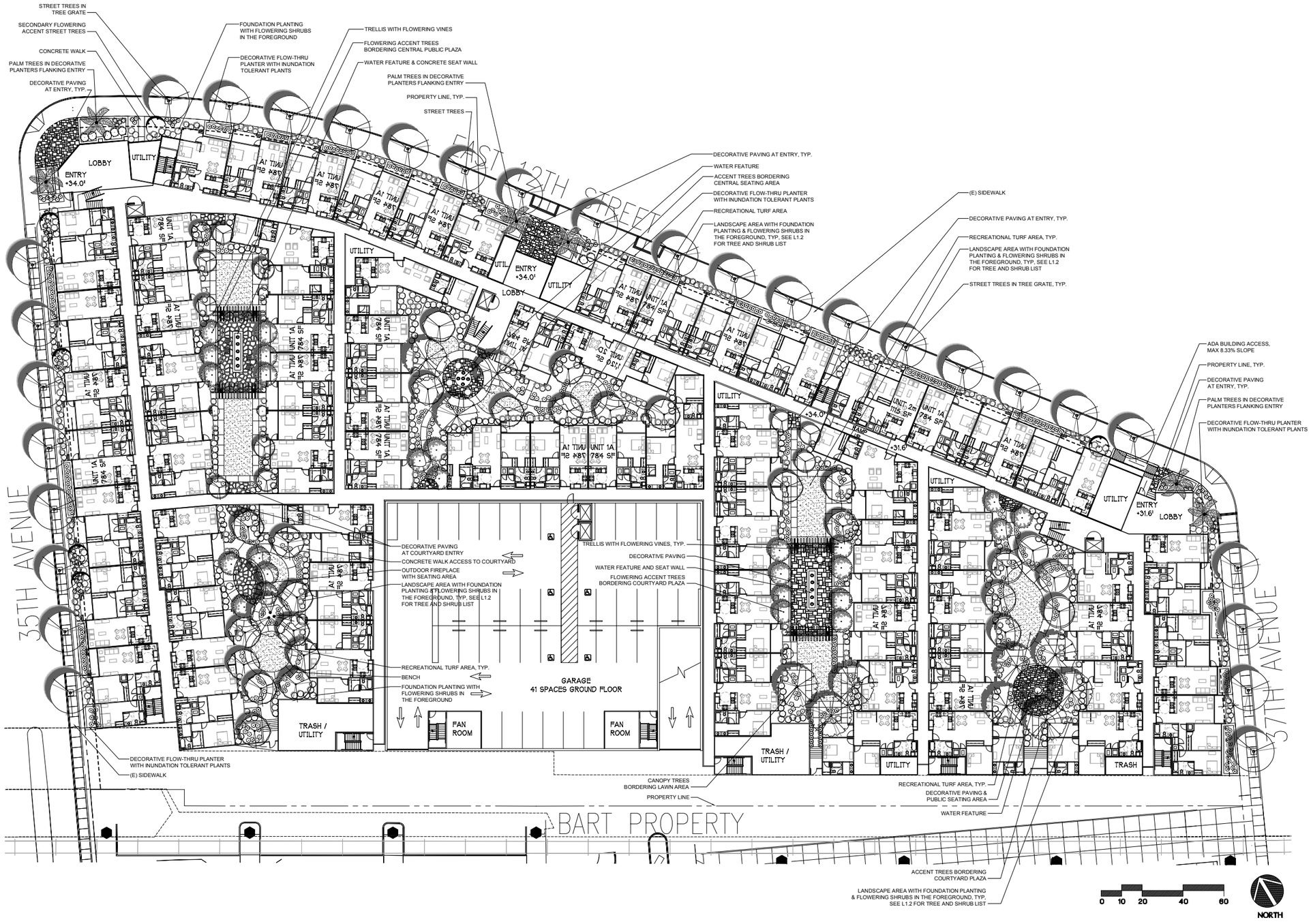

SOURCE: Van Dorn Abed Landscape Architects, Inc.

Fruitvale Transit Village Phase 2 . 208475

Figure 3-3

Proposed Landscaping Plan

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City of Oakland

- **Vesting Tentative Parcel Map (VTM) / Subdivision Map (or other appropriate land control map)** (Oakland Municipal Code Title 16) – The project would require approval from the City for a subdivision map, parcel map, lot line adjustment, or lot merger, as appropriate, to assemble and merge individual parcels that make up the project site to accommodate large, comprehensive development components on each development site.

- **Preliminary Development Plan (PDP) and Final Development Plan (FDP) / Final Design Review (FDP) for a Planned Unit Development (PUD)** (Oakland Planning Code Chapter17.140) – The project applicant seeks approval of a Planned Unit Development (PUD), which requires a Preliminary Development Plan (PDP) for the entire project site and, subsequently, one or more Final Development Plan(s) (FDPs) and Final Design Reviews prior to implementation of each phase of development. The Planning Commission would be required to review the PUD, PDP and FDP and conduct Final Design Review(s). The FDP provides detailed building and landscaping plans and elevations; plans for street improvements; grading or earth-moving plans; the location of water, sewer, and drainage facilities; among other detailed documents regarding site development. The FDP process provides flexibility in making design adjustments and responding to market conditions as the project develops.

- **Conditional Use Permit** (Planning Code Chapter 17.134 and 17.116.290 B.5) The project applicant would require a Conditional Use Permit for exceeding the maximum of 0.5 space per residential unit in an S-15, Transit-oriented District zone.

- **Design Guidelines / Design Review** (Oakland Planning Code Chapter 17.97.020) Design review approval would be required because the proposed project would require a Conditional Use Permit and PUD permit.

- **Tree Removal Permit** (Oakland Municipal Code Chapter 12.36) – Pursuant to the City's Protected Trees Ordinance, the project applicant would be required to obtain a Tree Removal Permit prior to removing (or have construction activity near) a "Protected Tree," as defined in Oakland Municipal Code Section 12.36.020. Tree permits would require approval by the Oakland Office of Parks and Recreation.

- **Demolition Permits** (Oakland Municipal Code Chapter 15.36) – The project would require approval of demolition permits to demolish existing structures on the project site.

- **Encroachment Permits** (Oakland Municipal Code Chapter 12.08) – The project would require City approval of encroachment permits to work within various public rights-of-way.

- **Excavation and Grading Permits** (Oakland Municipal Code Chapter 12.12) – The project would require City approval of excavation and grading permits to conduct excavation activities on the project site.

- **Other Various Building Permits** (Oakland Municipal Code Title 15) – The project would require City approval of all other permits required for project construction on the project site.

Other Agencies

In addition, portions of the proposed project would require review and/or approval by a number of other public and quasi-public agencies that have jurisdiction over specific aspects of the project. These other agencies would consider this EIR in their review and decision-making processes. A description and discussion of each action and agency/jurisdiction is included within the relevant topical analysis sections in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures. These agencies include, but are not limited to, the following:

- California State Water Resource Control Board – San Francisco Region (RWQCB);
- Bay Area Rapid Transit (BART); and
- Bay Area Air Quality Management District (BAAQMD).

CHAPTER 4
Environmental Setting, Impacts, Standard Conditions of Approval and Mitigation Measures

This Draft EIR has been prepared in accordance with CEQA, as amended (Public Resources Code Section 21000, et seq.), and the CEQA *Guidelines* (California Code of Regulations Sections 15000 through 15378).

The Initial Study that was prepared for this proposed project in December 2008 (included as Appendix A in this report) analyzed all the CEQA topics included in Appendix G of the CEQA *Guidelines* and the City of Oakland CEQA Thresholds / Criteria of Significance document. With the exception of the topics of air quality, noise, and transportation, the analysis in the Initial Study determined that all impacts of the proposed project on other resource areas were determined to be less than significant (in some cases, with conditions of approval), and therefore, those topics are not studied further in this EIR.

Each section describes the existing setting for the topic, the potential impacts that could result from the proposed project, relevant plans and policies, and Standard Conditions of Approval that would minimize or avoid potential adverse environmental effects that could result from the proposed project, and identifies mitigation measures necessary to reduce the potentially significant impacts resulting from the proposed project.

The following provides an overview of each environmental analysis section, including organization, the methods for determining which impacts are significant, and the applicability of the City's Uniformly Applied Development Standards and Standard Conditions of Approval.

Format of Environmental Topic Sections

Each environmental topic section generally includes two main subsections:

- *Existing Setting*, which includes baseline conditions, regulatory setting, City of Oakland Thresholds / Criteria of Significance, and applicable Standard Conditions of Approval (which are discussed below); and

- *Impacts Analysis*, which identifies and discusses the potentially significant impacts and cites applicable Standard Conditions of Approval and mitigation measures that would reduce or eliminate adverse impacts identified in this chapter.

This EIR identifies all impacts with an abbreviated designation that corresponds to the environmental topic addressed (e.g., "NOI" for noise). The topic designator is followed by a number that indicates the sequence in which the impact statement occurs within the section. For example, "Impact NOI-1" is the first (i.e., "1") noise impact identified in the EIR. All impact statements are presented in bold text.

Similarly, each mitigation measure is numbered to correspond with the impact that it addresses. Where multiple mitigation measures address a single impact, each mitigation measure is numbered sequentially. For example "Mitigation Measure NOI-1" is the first mitigation identified to address the first noise impact (i.e., "NOI"). All mitigation measure statements are presented in bold text.

City of Oakland CEQA Thresholds / Criteria of Significance

Under CEQA, a significant effect is a substantial, or potentially substantial, adverse change in the environment (Public Resources Code Section 21068). Each *Impact Analysis* discussion in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant.

This criteria of significance used in this EIR are from the City of Oakland's CEQA Thresholds / Criteria of Significance Guidelines (published July 15, 2008, and amended July 14, 2009). The City has established these thresholds and criteria of significance guidelines to help clarify and provide consistent analysis and decision-making in the environmental review process in the City of Oakland and these thresholds and criteria are offered as guidance in preparing environmental review documents. The City requires use of its CEQA Thresholds / Criteria of Significance unless the location of the project or other unique factors warrants the use of different thresholds. The CEQA Thresholds / Criteria of Significance are intended to implement and supplement provisions in the CEQA *Guidelines* for determining the significance of environmental effects, including CEQA *Guidelines* Sections 15064, 15064.5, 15065, 15382, and Appendix G, and form the basis of the City's Initial Study and Environmental Review Checklist.

The CEQA Thresholds / Criteria of Significance are intended to be used in conjunction with the City's *Conditions of Approval and Uniformly Applied Development Standards Imposed as Standard Conditions of Approval* (revised September 5, 2007, and amended January 17, 2008, and September 17, 2008), which are incorporated into projects regardless of the determination regarding a project's environmental impacts.

Uniformly Applied Development Standards and Conditions of Approval

The City's Uniformly Applied Development Standards and Conditions of Approval (referred to in the EIR as "Standard Conditions of Approval" or Conditions of Approval) are incorporated into projects as conditions of approval 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 reduce environmental effects such that no significant effect will occur.

In reviewing project applications, the City determines which Standard Conditions of Approval are applied, based upon the zoning district, community plan, and the type(s) of permit(s)/approval(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 creekside properties.

All relevant Standard Conditions of Approval have been incorporated as part of the proposed project. Because Standard Conditions of Approval are mandatory City requirements, the impact analysis assumes that these will be imposed and implemented by a project. If a Standard Condition of Approval would reduce a potentially significant impact to less than significant, the impact is 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 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, California Building Code, and Uniform Fire Code, et al.), 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.

Impact Classifications

The following level of significance classifications are used throughout the impact analysis in this EIR:

- **Less than Significant (LS) –** The impacts of the proposed project, either before or after implementation of standard conditions of approval and/or feasible mitigation measures, do not reach or exceed the defined Threshold/Criteria of Significance. No mitigation measure is required for a LS impact.

- **Potentially Significant (PS)** – The impact of the proposed project may reach or exceed the defined Threshold/Criteria of Significance, however it is not evident that, even in the theoretical worst-case standard conditions, a significant impact would occur. Where feasible, standard conditions of approval and/or mitigation measures are identified to reduce the PS impact to LS.

- **Significant (S) and Significant Unavoidable (SU)** – The impact of the proposed project reaches or exceeds the defined Threshold/Criteria of Significance. No feasible mitigation measure is available to reduce the S impact to LS. In these cases, feasible mitigation measures are identified to reduce the S impact to the maximum feasible extent, and the

significant impact is considered SU. Impacts are also classified as SU if a feasible mitigation measure is identified that would reduce the impact to LS, but the approval and/or implementation of the mitigation measure is not within the City of Oakland's or the project applicant's sole control, in which case the analysis cannot presume implementation of the mitigation measure and the resulting LS impact.

- **No Impact (N)** – No noticeable adverse effect on the environmental would occur.

Environmental Baseline

Overall, pursuant to Section 15125(a) of the CEQA *Guidelines*, this EIR measures the physical impacts of the proposed project against a "baseline" of physical environmental conditions at and near the proposed project. The environmental "baseline" is the combined circumstances existing around the time the NOP of the EIR was published, which is December 2008.[1] In Section 4.3, *Transportation, Circulation and Parking,* discussion of the baseline condition is restated in the Impacts Analysis to provide the impact analysis in the most reader-friendly format and organization. This EIR presents a 2015 interim year analysis to assess near-term traffic and traffic-related air quality and traffic-related noise impacts associated with the proposed project and near-term development. The 2015 and 2035 baseline forecasts are from the Alameda County Congestion Management Agency (ACCMA) Countywide Travel Demand Forecasting Model, which capture the cumulative effects of future growth on the regional roadways; the analysis of traffic-related air quality and traffic-related noise impacts are derived using the ACCMA model as well. The baseline also includes the policy and planning context in which the project is proposed.

Cumulative Analysis

Approach

CEQA defines cumulative as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impact." Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts when the project's incremental effect is cumulative considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past, present, existing, approved, pending and reasonably foreseeable 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 reasonable foreseeable probable future projects." The City of Oakland's analysis approach specifies "past, present, existing, approved, pending and reasonably foreseeable future projects."

[1] Except as specified otherwise, any reference to "existing" conditions throughout this EIR refers to the baseline condition as of around December 2008.

Geographic Context and Baseline

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 areas that relates to air quality or transportation impacts are much larger and regional in character than the geographic area that could be impacted by potential noise impacts from a proposed project and other cumulative projects or growth. Conversely, cumulative noise impacts 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.

All cumulative impacts that could occur as a result of the proposed project are discussed in the appropriate environmental topic sections of this Draft EIR, and summarized in Chapter 6. Generally, to establish a partial baseline for cumulative analysis, the City of Oakland's Major Projects list was used, in part, to determine all past, present, and reasonably foreseeable future projects in the vicinity of the proposed project site. Within each cumulative impact discussion is a description of the geographic context and baseline specific to each topic, including, where appropriate, specific projects from the City's Major Projects list located in proximity to the proposed project site and particularly relevant to the cumulative analysis. Moreover, the transportation analyses (and transportation-related traffic and air quality) used the Alameda County Congestion Management Analysis (ACCMA) travel demand model, which requires inputs at the traffic analysis zones (TAZ) level. As indicated above, please refer to the cumulative discussions in each environmental topic for the specific cumulative baseline.

4.1 Air Quality

This section discusses both the construction and operational impacts of the proposed project on the local and regional air quality. The *Environmental Setting* section provides an overview of the regulatory context, plans, policies, and regulations, followed by regional information about climate and topography and existing baseline air quality conditions. In addition, this section describes 1) the level of knowledge currently available regarding potential primary and secondary impacts of greenhouse gas (GHG) emissions, including climate change (and its secondary effects); and 2) presents an analysis of the proposed project's sources of GHG emissions and of project design features that would avoid or minimize those sources. Following the discussion of the setting, this section identifies any potentially significant air quality impacts and, if necessary, appropriate mitigation measures or Standard Conditions of Approval. Pursuant to Section 15358(b) of the CEQA Guidelines, mitigation measures are proposed only to address physical impacts that may result from the project.

4.1.1 Environmental Setting

Regulatory Context for Air Quality

The U.S. Environmental Protection Agency (USEPA) is responsible for implementing the programs established under the federal Clean Air Act, such as establishing and reviewing the federal ambient air quality standards and judging the adequacy of State Implementation Plans (SIPs). However, the USEPA has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented. In California, the California Air Resources Board (CARB) is responsible for establishing and reviewing state ambient air quality standards, developing and managing the California SIP, securing approval of this plan from USEPA, and identifying toxic air contaminants (TACs). CARB also regulates mobile emissions sources in California, such as construction equipment, trucks, and automobiles, and oversees the activities of air quality management districts, which are organized at the county or regional level. Air quality management districts are primarily responsible for regulating stationary emissions sources at facilities within its geographic areas and for preparing the air quality plans that are required under the federal Clean Air Act and California Clean Air Act (see *Air Quality Plans*, below). The Bay Area Air Quality Management District (BAAQMD) is the regional agency with regulatory authority over emissions sources in the Bay Area, which includes all of San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Marin, and Napa counties, the southern half of Sonoma County, and the southwestern half of Solano County.

Criteria Air Pollutants

As required by the federal Clean Air Act passed in 1970, USEPA has identified six criteria air pollutants that are pervasive in urban environments and for which state and national health-based ambient air quality standards have been established. USEPA calls these pollutants *criteria air pollutants* because the agency has regulated them by developing specific public health- and

welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead are the six criteria air pollutants.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NOx). ROG and NOx are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NOx under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone. Ground level ozone in conjunction with suspended particulate matter in the atmosphere leads to hazy conditions generally termed as "smog."

Carbon Monoxide

Ambient carbon monoxide (CO) concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distributions of vehicular traffic. Wind speed and atmospheric mixing also influence CO concentrations. Under inversion conditions, CO concentrations may be distributed more uniformly over an area that may extend some distance from vehicular sources. 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 for fetuses.

Carbon monoxide concentrations have declined dramatically in California due to existing controls and programs, and most areas of the state including the project region have no problem meeting the CO state and federal standards. CO measurements and modeling were important in the early 1980s when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling have not been a priority in most California air districts due to the retirement of older polluting vehicles, fewer emissions from new vehicles and improvements in fuels. The clear success in reducing CO levels is evident in the first paragraph of the executive summary of the California Air Resources Board *2004 Revision to the California State Implementation Plan for Carbon Monoxide Updated Maintenance Plan for Ten Federal Planning Areas* (CARB, 2004), shown below:

> The dramatic reduction in carbon monoxide (CO) levels across California is one of the biggest success stories in air pollution control. Air Resources Board (CARB or Board) requirements for cleaner vehicles, equipment and fuels have cut peak CO levels in half since 1980, despite growth. All areas of the State designated as non-attainment for the

federal 8-hour CO standard in 1991 now attain the standard, including the Los Angeles urbanized area. Even the Calexico area of Imperial County on the congested Mexican border had no violations of the federal CO standard in 2003. Only the South Coast and Calexico continue to violate the more protective State 8-hour CO standard, with declining levels beginning to approach that standard.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is an air quality concern because it acts as a respiratory irritant and is a precursor of ozone. NO_2 is produced by fuel combustion in motor vehicles, industrial stationary sources (such as industrial activities), ships, aircraft, and rail transit.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a combustion product of sulfur or sulfur-containing fuels such as coal and oil, which are regulated in the Bay Area under BAAQMD Regulation 9 (Inorganic Gaseous Pollutants) Rule 1 (Sulfur Dioxide). Its health effects include breathing problems and it may cause permanent damage to lungs. SO_2 is an ingredient in acid rain (acid aerosols), which can damage trees, lakes, and property. Acid aerosols can also reduce visibility.

Particulate Matter

PM10 and PM2.5 consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. A micron is one-millionth of a meter, or less than one-25,000th of an inch. For comparison, human hair is 50 microns or larger in diameter. PM10 and PM2.5 represent particulate matter of sizes that can be inhaled into the air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of aerosol-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles (PM2.5) of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility. Large dust particles (diameter greater than 10 microns) settle out rapidly and are easily filtered by human breathing passages. This large dust is of more concern as a soiling nuisance rather than a health hazard. The remaining fraction, PM10 and PM2.5, are a health concern particularly at levels above the federal and state ambient air quality standards. PM2.5 (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus, are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Recent studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air. Children are more susceptible to the health risks of PM10 and PM2.5 because their immune and respiratory systems are still developing.

Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of particulate matter in the air. Despite

important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health (Dockery and Pope, 2006). The CARB has estimated that achieving the ambient air quality standards for PM10 could reduce premature mortality rates by 6,500 cases per year (CARB, 2002).

PM10 emissions in the project area are mainly from urban sources, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere. Particulate concentrations near residential sources generally are higher during the winter, when more fireplaces are in use and meteorological conditions prevent the dispersion of directly emitted contaminants.

Lead

Leaded gasoline (currently phased out), paint (houses, cars), smelters (metal refineries), and manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects for which children are at special risk. Some lead-containing chemicals cause cancer in animals.

Ambient Air Quality Standards

Regulation of criteria air pollutants is achieved through both national and state ambient air quality standards and emissions limits for individual sources. Regulations implementing the federal Clean Air Act and its subsequent amendments established national ambient air quality standards (national standards) for the six criteria pollutants. California has adopted more stringent state ambient air quality standards for most of the criteria air pollutants. In addition, California has established state ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Because of the unique meteorological problems in the state, there is considerable diversity between state and federal standards currently in effect in California, as shown in **Table 4.1-1**. The table also summarizes the related health effects and principal sources for each pollutant.

The ambient air quality standards are intended to protect the public health and welfare, and they incorporate an adequate margin of safety. They are designed to protect those segments of the public most susceptible to respiratory distress, known as sensitive receptors, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat above the ambient air quality standards before adverse health effects are observed.

Attainment Status

Under amendments to the federal Clean Air Act, USEPA has classified air basins or portions thereof, as either “attainment” or “nonattainment” for each criteria air pollutant, based on whether or not the national standards have been achieved. The California Clean Air Act, which is patterned after the federal Clean Air Act, also requires areas to be designated as “attainment” or “nonattainment” for the state standards. Thus, areas in California have two sets of attainment / nonattainment designations: one set with respect to the national standards and one set with respect to the state standards.

TABLE 4.1-1
AMBIENT AIR QUALITY STANDARDS AND BAY AREA ATTAINMENT STATUS

Pollutant	Averaging Time	State Standard	Bay Area Attainment Status for California Standard	Federal Primary Standard	Bay Area Attainment Status for Federal Standard	Major Pollutant Sources
Ozone	8-hour	0.070 ppm	Non-Attainment	0.075 ppm	Non-Attainment	Formed when ROG and NOx react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial/ industrial mobile equipment.
	1-hour	0.090 ppm	Non-Attainment	---	---	
Carbon Monoxide	8-hour	9.0 ppm	Attainment	9.0 ppm	Attainment	Internal combustion engines, primarily gasoline-powered motor vehicles.
	1-Hour	20 ppm	Attainment	35 ppm	Attainment	
Nitrogen Dioxide	Annual Average	0.030 ppm	---	0.053 ppm	Attainment	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	1-Hour	0.180 ppm	Attainment	---	---	
Sulfur Dioxide	Annual Average	---	---	0.03 ppm	Attainment	Fuel combustion, chemical plants, sulfur recovery plants and metal processing.
	24-Hour	0.04 ppm	Attainment	0.14 ppm	Attainment	
	1-Hour	0.25 ppm	Attainment	---	---	
Particulate Matter (PM10)	Annual Arithmetic Mean	20 μg/m3	Non-Attainment	---	---	Dust- and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24-hour	50 μg/m3	Non-Attainment	150 μg/m3	Unclassified	
Particulate Matter (PM2.5)	Annual Arithmetic Mean	12 μg/m3	Non-Attainment	15 μg/m3	Attainment	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.
	24-hour	---	---	35 μg/m3	Non-Attainment	
Lead	Calendar Quarter	---	---	1.5 μg/m3	Attainment	Present source: lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.
	30-Day Average	1.5 μg/m3	Attainment	---	---	

NOTE: ppm=parts per million; and μg/m3=micrograms per cubic meter

SOURCE: Bay Area Air Quality Management District, 2008a, as of December 30, 2008, available at http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm; California Air Resources Board, 2005a. *ARB Fact Sheet: Air Pollution Sources, Effects and Control,* http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm, page last updated December 2005.

The Bay Area is currently designated "nonattainment" for state and national (1-hour and 8-hour) ozone standards, for the national (24-hour) PM2.5 standard, and for the state PM10 and PM2.5 standards. The Bay Area is designated "attainment" or "unclassified" with respect to the other ambient air quality standards. Table 4.1-1 shows the attainment status of the Bay Area with respect to the national and state ambient air quality standards for different criteria pollutants.

Air Quality Plans

The 1977 Clean Air Act Amendments require that regional planning and air pollution control agencies prepare a regional Air Quality Plan to outline the measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve all standards specified in the Clean Air Act. The 1988 California Clean Air Act also requires development of air quality plans and strategies to meet state air quality standards in areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM standards). Maintenance plans are required for attainment areas that had previously been designated nonattainment in order to ensure continued attainment of the standards. Air quality plans developed to meet federal requirements are referred to as State Implementation Plans (SIPs).

For state air quality planning purposes, the Bay Area is classified as a serious non-attainment area for ozone. The "serious" classification triggers various plan submittal requirements and transportation performance standards. One such requirement is that the Bay Area update the Clean Air Plan (CAP) every three years to reflect progress in meeting the air quality standards and to incorporate new information regarding the feasibility of control measures and new emission inventory data. The Bay Area's record of progress in implementing previous measures must also be reviewed. Bay Area plans are prepared with the cooperation of the Metropolitan Transportation Commission (MTC), and the Association of Bay Area Governments (ABAG). On January 4, 2006, the BAAQMD adopted the most recent revision to the CAP – the *Bay Area 2005 Ozone Strategy* (BAAQMD, 2006). The *2005 Ozone Strategy* strives to implement all feasible measures on an expeditious schedule in order to reduce emissions of ozone precursors and consequently reduce ozone levels in the Bay Area and reduce transport to downwind regions.

In April 2005, CARB established a new eight-hour average ozone state standard of 0.070 parts per million (ppm). The new standard took effect in May 2006. The one-hour state standard was also retained. The San Francisco Bay Area has not attained the state eight-hour standards and will be taking action as necessary to address those standards as appropriate once the planning requirements have been established.

The BAAQMD has initiated preparation of the *2009 Bay Area Clean Air Plan*. This Plan will:

- Update the *Bay Area 2005 Ozone Strategy* in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Consider the impacts of ozone control measures on particulate matter, air toxics, and GHGs in a single, integrated plan;
- Review progress in improving air quality in recent years; and

- Establish emission control measures to be adopted or implemented in the 2009 – 2012 timeframe.

The current designation of the Bay Area is non-attainment with respect to the national 8-hour ozone standard, based on the now defunct 0.08-ppm 8-hour standard. In April 2004, the USEPA designated the Bay Area as a "marginal" non-attainment area according to five classes of non-attainment areas for ozone, which range from marginal to extreme. Marginal non-attainment areas were not required to prepare attainment demonstrations for the 8-hour standard though other planning elements were required. The Bay Area was to address all requirements of the national 8-hour standard in subsequent documents. However, effective May 2008, the USEPA lowered the national 8-hour standard from 0.08 to 0.075 ppm. USEPA is expected to issue final designations based upon the new 0.075 ppm standard by March 2010, after which planning requirements on non-attainment areas will be imposed.

Toxic Air Contaminants

The Health and Safety Code defines TACs as air pollutants that may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health. TACs are less pervasive in the urban atmosphere than criteria air pollutants, but are linked to short-term (acute) or long-term (chronic and/or carcinogenic) adverse human health effects. There are hundreds of different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust. The current list of TACs includes approximately 200 compounds, including all of the toxics identified under federal law plus additional compounds, such as particulate emissions from diesel-fueled engines, which was added in 1998. Unlike regulations concerning criteria air pollutants, there are no ambient air quality standards for evaluating TACs. Instead, TACs emissions are evaluated based on the degree of health risk that could result from exposure to these pollutants. According to the BAAQMD, the local agency governing air quality issues in the Bay Area, diesel exhaust emissions pose the greatest degree of health risk to residents in the Bay Area.

Regulation of TACs is achieved through federal and state controls on individual sources.[1]

TACs have been regulated under federal air quality law since the 1977 federal Clean Air Act Amendments. The most recent federal Clean Air Act Amendments (1990) reflect a technology-based approach for reducing TACs. The first phase involves requiring facilities to install Maximum Achievable Control Technology (MACT). The MACT standards vary depending on the type of emitting source. USEPA has established MACT standards for over 20 facilities or activities, such as perchloroethylene dry cleaning and petroleum refineries. The second phase of control involves determining the residual health risk represented by air toxics emissions sources after implementation of MACT standards.

[1] Federal environmental laws refer to "hazardous air pollutants," while California environmental laws refer to "toxic air contaminants." Both of these terms basically encompass the same constituent toxic compounds.

Two principal laws provide the foundation for state regulation of TACs from stationary sources. In 1983, the State Legislature adopted Assembly Bill 1807, which established a process for identifying TACs and provided the authority for developing retrofit air toxics control measures on a statewide basis. Air toxics from stationary sources in California are also regulated under Assembly Bill 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under Assembly Bill 2588, TAC emissions from individual facilities are quantified and prioritized by the regional air quality management district or county air pollution control district. High priority facilities are required to perform a health risk assessment, and if specific thresholds are violated, they are required to communicate the results to the public in the form of notices and public meetings. Depending on the risk level, emitting facilities can be required to implement varying levels of risk reduction measures.

CARB adopted the *Air Quality and Land Use Handbook* (CARB, 2005b) to provide guidance to planning agencies and air districts for considering potential impacts to sensitive land uses proposed in proximity to TACs emission sources. The goal of the guidance document is to protect sensitive receptors, such as children, seniors, and acutely ill and chronically ill persons, from exposure to TACs emissions. The recommendations provided are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. In addition, reducing diesel particulate matter (DPM) is one of the CARB's highest public health priorities and the focus of a comprehensive statewide control program that is reducing DPM emissions each year. The CARB's long-term goal is to reduce DPM emissions 85 percent by 2020.

Locally, the BAAQMD administers the Bay Area's Toxic Air Contaminant Control Program, which is intended to reduce public exposure to TACs from stationary sources in the Bay Area. BAAQMD is currently working to control TAC impacts at local "hot spots" and to reduce TAC background concentrations. The control strategy involves reviewing new stationary sources to ensure compliance with required emissions controls and limits, maintaining an inventory of existing stationary sources of TACs, and developing new rules and regulations to reduce TAC emissions.

Regulation of TACs from mobile sources has traditionally been implemented through emissions standards for on-road motor vehicles (imposed on vehicle manufacturers) and through specifications for gasoline and diesel fuel sold in California (imposed on fuel refineries and retailers), rather than through land use decisions, air quality permits, or regulations addressing how motor vehicles are used by the general public.

Local Standards for Air Quality

BAAQMD Guidance, Rules and Regulations

BAAQMD is responsible for maintaining air quality in the Basin within federal and State air quality standards. Specifically, BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the Basin and to develop and implement strategies to attain the applicable federal and State standards.

In December 1999, BAAQMD adopted its *CEQA Guidelines – Assessing the Air Quality Impacts of Projects and Plans*, as a guidance document to provide lead government agencies, consultants,

and project proponents with uniform procedures for assessing air quality impacts and preparing the air quality sections of environmental documents for projects subject to CEQA. The *BAAQMD CEQA Guidelines* is an advisory document and local jurisdictions are not required to utilize the methodology outlined therein. The document describes the criteria that BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts.

In December 2009, BAAQMD issued its most recent draft update to its *CEQA Air Quality Guidelines*, as part of a planned update of BAAQMD's CEQA Guidelines, which were last updated in December 1999, as discussed above. Preliminary drafts were issued in September, October 2009, November 2009, and December 2009 and BAAQMD held numerous public hearings to obtain public review and comment on the draft. Adoption of the December 2009 draft is anticipated to occur in early 2010.

As a part of its responsibility for air quality, BAAQMD is the regional agency responsible for rulemaking, permitting and enforcement activities affecting stationary sources in the Bay Area. Specific rules and regulations adopted by the BAAQMD limit the emissions that can be generated by various uses and/or activities, and identify specific pollution reduction measures that must be implemented in association with various uses and activities. These rules regulate not only emissions of the six criteria air pollutants, but also toxic emissions and acutely hazardous non-radioactive materials emissions.

Emissions sources subject to these rules are regulated through the BAAQMD's permitting process and standards of operation. Through this permitting process, including an annual permit review, the BAAQMD monitors generation of stationary emissions and uses this information in developing its air quality plans. Any sources of stationary emissions constructed as part of the proposed project would be subject to the BAAQMD rules and regulations. Both federal and state ozone plans rely heavily upon stationary source control measures set forth in BAAQMD's rules and regulations.

With respect to construction activities associated with project development, applicable BAAQMD regulations would relate to portable equipment (e.g., 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).

City of Oakland General Plan

The Open Space, Conservation, and Recreation Element (OSCAR) of the *Oakland General Plan* (City of Oakland, 1996) contains the following air quality objective and policies that would apply to the proposed project ("*CO*" indicates Conservation policies):

- *Objective 1*: To improve air quality in Oakland and the surrounding Bay Region.
- *Policy CO-12.1*: Promote land use patterns and densities which help improve regional air quality conditions. The City supports efforts of the responsible public agencies to reduce air pollution.
- *Policy CO-12.4*: Require that development projects be designed in a manner which reduces potential adverse air quality impacts.

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,

> '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)

City of Oakland Standard Conditions of Approval and Uniformly Applied Development Standards Imposed as Standard Conditions of Approval

The City's Standard Conditions of Approval relevant to air quality are listed below for reference. If the proposed project is approved by the City, then all applicable Standard Conditions of Approval would be adopted as conditions of approval and required of the project to reduce potential air quality impacts. The Standard Conditions of Approval are incorporated and required as part of the project, so they are not considered as, nor listed as mitigation measures. Standard Conditions of Approval applicable to the potential air quality impacts of the project consist of the following measures:

AIR-1: Dust Control

Prior to issuance of a demolition, grading or building permit. During construction, the project applicant shall require the construction contractor to implement the following measures required as part of Bay Area Air Quality Management District's (BAAQMD) basic and enhanced dust control procedures required for construction sites. These include:

a) Water all active construction areas at least twice daily. 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) Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.

d) Sweep daily (with water sweepers using reclaimed water if possible) all paved access roads, parking areas and staging areas at construction sites.

e) Sweep streets (with water sweepers using reclaimed water if possible) at the end of each day if visible soil material is carried onto adjacent paved roads.

f) Limit the amount of the disturbed area at any one time, where feasible.

g) Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.

h) 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.

i) Replant vegetation in disturbed areas as quickly as feasible.

j) Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).

k) Limit traffic speeds on unpaved roads to 15 miles per hour.

l) Clean off the tires or tracks of all trucks and equipment leaving any unpaved construction areas.

AIR-2: Construction Emissions

Prior to issuance of a demolition, grading or building permit. To minimize construction equipment emissions during construction, the project applicant shall require the construction contractor to:

a) Demonstrate compliance with Bay Area Air Quality Management District (BAAQMD) Regulation 2, Rule 1 (General Requirements) for all portable construction equipment subject to that rule. BAAQMD Regulation 2, Rule 1 provides the issuance of authorities to construct and permits to operate certain types of portable equipment used for construction purposes (e.g., gasoline or diesel-powered engines used in conjunction with power generation, pumps, compressors, and cranes) unless such equipment complies with all applicable requirements of the "CAPCOA" Portable Equipment Registration Rule" or with all applicable requirements of the Statewide Portable Equipment Registration Program. This exemption is provided in BAAQMD Rule 2-1-105.

b) Perform low-NOx tune-ups on all diesel-powered construction equipment greater than 50 horsepower (no more than 30 days prior to the start of use of that equipment). Periodic tune-ups (every 90 days) shall be performed for such equipment used continuously during the construction period.

AIR-3: Indoor Air Quality

In order to comply with the California Air Resources Board Air Quality and Land Use Handbook (June 2005) and achieve an acceptable interior air quality level for sensitive receptors, appropriate measures, shall be incorporated into project building design. The appropriate measures shall include 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 and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to stationary air quality polluters prior to issuance of a demolition, grading, or building permit. The HRA shall be submitted to the Planning and Zoning Division for review and approval. The applicant shall implement the approved HRA recommendations, if any. If the HRA concludes that the air quality risks from nearby sources are at or below acceptable levels, then additional measures are not required.

b) The applicant shall implement the following features that have been found to reduce the air quality risk to sensitive receptors and shall be included in the project construction plans. These shall be submitted to the Planning and Zoning Division and the Building Services Division for review and approval prior to the issuance of a demolition, grading, or building permit and ongoing.

    (a) Do not locate sensitive receptors near distribution center's entry and exit points.

    (b) Do not locate sensitive receptors in the same building as a perchloroleythene dry cleaning facility.

    (c) Maintain a 50' buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).

    (d) Install, operate and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets the efficiency standard of the MERV 13. The HV system shall include the following features: Installation of a high efficiency filter and/or carbon filter to filter particulates and other chemical matter from entering the building. Either HEPA filters or American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) 85 percent supply filters shall be used.

    (e) Retain a qualified HV consultant or HERS rater during the design phase of the project to locate the HV system based on exposure modeling from the mobile and/or stationary pollutant sources.

    (f) Maintain positive pressure within the building.

    (g) Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.

    (h) Achieve a performance standard of at least 4 air exchanges per hour of recirculation

    (i) Achieve a performance standard of .25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.

c) Project applicant shall maintain, repair and/or replace HV system or prepare an Operation and Maintenance Manual for the HV system and the filter. The manual shall include the operating instructions and maintenance and replacement schedule.

This manual shall be included in the CC&R's for residential projects and distributed to the building maintenance staff. In addition, the applicant shall prepare a separate Homeowners Manual. The manual shall contain the operating instructions and maintenance and replacement schedule for the HV system and the filters. It shall also include a disclosure to the buyers of the air quality analysis findings.

AIR-4: 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, 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.

AIR-5: Air Pollution Buffering for Private Open Space

Prior to approval of Final Development Plan for each stage. To the maximum extent practicable, private (individual and common) exterior open space, including playgrounds, patios, and decks, shall either be shielded from the stationary source of air pollution by buildings or otherwise buffered to further reduce air pollution for project occupants.

Physical Setting for Air Quality

Climate and Meteorology

Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. The project site is located in the City of Oakland and is within the boundaries of the San Francisco Bay Area Air Basin (Bay Area Air Basin). The Bay Area Air 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. The climate of the Bay Area is determined largely by a high-pressure system that is almost always present over the Pacific Ocean off the west coast of North America. During winter, the Pacific high-pressure system shifts southward, allowing storms to pass through the region. During summer and fall, emissions generated within the Bay Area Air Basin 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.

More specifically, the site lies east of San Francisco Bay in the Northern Alameda and Western Contra Costa Counties climatological subregion. This subregion stretches from Richmond to San Leandro with San Francisco Bay as its western boundary and its eastern boundary defined by the Oakland-Berkeley Hills. In this area, marine air traveling through the Golden Gate, as well as across San Francisco and the San Bruno Gap, 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. However, the air pollution potential in this subregion is relatively

low for portions close to the bay, due to the largely good ventilation and less influx of pollutants from upwind sources (BAAQMD, 1999). Yet, during summer and fall, emissions generated within, and those transported to, the East Bay can combine with abundant sunshine under the restraining influences of topography and temperature inversions to create conditions that are conducive to the formation of photochemical pollutants, like ozone.

Wind measurements taken at Metropolitan Oakland International Airport indicate that the predominant wind flow is out of the west-northwest. Northwest winds occur approximately 46 percent of the time. Average wind speeds vary from season to season with the strongest average winds occurring during summer and the lightest average winds during winter. Average wind speeds are 9.7 miles per hour (mph) during summer and 7.4 mph during winter. Temperatures in Oakland average 58 ^{o}F annually, ranging from an average of 40^{o}F on winter mornings to the mid-70s in the late summer afternoons. Daily and seasonal oscillations of temperature are small because of the moderating effects of the nearby ocean. In contrast to the steady temperature regime, rainfall is highly variable and confined almost exclusively to the "rainy" period from early November to mid-April. Oakland averages 18 inches of precipitation annually, but because much of the area's rainfall is derived from the fringes of mid-latitude storms, a shift in the annual storm track of a few hundred miles can mean the difference between a very wet year and near drought conditions.

Existing Air Quality

Criteria Air Pollutants

The BAAQMD operates a regional monitoring network that measures the ambient concentrations of the six criteria air pollutants. Existing and probable future levels of air quality in Oakland can generally be inferred from ambient air quality measurements conducted by the BAAQMD at its nearby monitoring stations. The monitoring stations closest to the project area are the Alice Street and International Boulevard stations in Oakland, 4.75 miles and 3.5 miles from the project site, respectively. The Alice Street station monitored ozone (1-hour and 8-hour) and CO for 2004 and 2005; and the International Boulevard station monitored ozone (1-hour and 8-hour), PM2.5, CO, and NO_2 for 2007 and 2008. Data for 2006 was not available near the project site. Since the major pollutants of concern in the San Francisco Bay Area are ozone, and particulate matter, **Table 4.1-2** shows a five-year summary of monitoring data (2004 through 2008) for these pollutants from the Alice Street and International Boulevard stations. In addition, although there are no stations in the project area that monitor PM10, data from the closest station (Chapel Way station in Fremont, approximately 20 miles from the project site) is also included in Table 4.1-2.

Motor vehicle transportation, including automobiles, trucks, transit buses, and other modes of transportation, is the major contributor to regional air pollution. Stationary sources were once important contributors to both regional and local pollution. Their role has been substantially reduced in recent years by pollution control programs, such as those of the BAAQMD. Any further progress in air quality improvement now focuses heavily on transportation sources.

TABLE 4.1-2
AIR QUALITY DATA SUMMARY (2004–2008) FOR THE PROJECT AREA

Pollutant	Standard[a]	Monitoring Data by Year				
		2004	2005	2006	2007	2008
Ozone[b,c]						
Highest 1-Hour Average (ppm)[d]		0.080	0.068	NA	0.040	0.086
Days over State Standard	0.09	0	0	NA	0	0
Highest 8-Hour Average (ppm)[d]		0.057	0.045	NA	0.037	0.064
Days over State Standard	0.07	0	0	NA	0	0
Days over National Standard	0.075	0	0	NA	0	0
Carbon Monoxide[b,c]						
Highest 8-Hour Average (ppm)[d]		2.64	2.44	NA	1.40	1.63
Days over State/National Standard	9.0	0	0	NA	0	0
Particulate Matter (PM10)[e]						
Highest 24-Hour Average – State/National (ug/m^3)[d]		48.9/46.3	**54.1**/51.7	**56.6**/54.0	**60.6**/57.5	38.7/37.5
Estimated days over State Standard [f]	50	0	5.8	4.4	6.0	NA
Estimated days over National Standard [f]	150	0	0	0	0	NA
State Annual Average	20	18.6	17.8	20.0	19.6	NA
Particulate Matter (PM2.5)[b]						
Highest 24-Hour Average – National (ug/m^3) [d]		NA	NA	NA	22.8	30.1
Estimated days over National Standard [f]	35	NA	NA	NA	0	0
State Annual Average	12	NA	NA	NA	NA	9.5
National Annual Average	15	NA	NA	NA	NA	9.5

a Generally, state standards are not to be exceeded and federal standards are not to be exceeded more than once per year.
b 2004 and 2005 data for CO and ozone above are from the Alice Street station in Oakland. 2006 data is not available from stations in the project vicinity.
c 2007 and 2008 data for CO, ozone, and PM2.5 shown above are from the International Boulevard station in Oakland. 2006 data is not available from stations in the project vicinity.
d ppm = parts per million; ug/m^3 = micrograms per cubic meter.
e PM10 data is from the Chapel Way station in Fremont.
f PM10 and PM2.5 are not measured every day of the year.

NA = Not Available.

SOURCE: CARB, 2009.

Sensitive Land Uses

Some persons are considered more sensitive than others to air pollutants. The reasons for heightened sensitivity may include health problems, proximity to the emissions source, and duration of exposure to air pollutants. Land uses such as schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air-quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people are often at home for extended periods. Recreational land uses are

moderately sensitive to air pollution, because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The area immediately around the project site is developed with a mix of residential and commercial uses. North of the project site along East 12th Street and between 35th Avenue and 37th Avenue are the fenced backyards of businesses and residential buildings that front on International Boulevard and 35th, 36th, and 37th Avenues. To the east of the project site is Ascend School, a kindergarten through 8th grade small, charter school in the Oakland Unified School District that fronts on East 12th Street. West of the project site is Fruitvale Village, a three-story-tall complex of residential units and commercial uses, which fronts on East 12th Street.

4.1.2 Impacts and Mitigation Measures

Significance Criteria

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

A. Project Impacts

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
4. Expose sensitive receptors to substantial pollutant concentrations;
5. Frequently create substantial objectionable odors affecting a substantial number of people;
6. Contribute to CO concentrations exceeding the State AAQS of 9 ppm averaged over 8 hours and 20 ppm for 1 hour [NOTE: Pursuant to BAAQMD, localized CO concentrations should be estimated for projects in which (1) vehicle emissions of CO would exceed 550 lb/day; (2) intersections or roadway links would decline to LOS E or F; (3) intersections operating at LOS E or F will have reduced LOS; or (4) traffic volume increase on nearby roadways by 10 percent or more unless the increase in traffic volume is less than 100 vehicles per hour];
7. Result in total operational emissions of ROG, NOx, or PM10 of 15 tons per year or greater, or 80 pounds (36 kilograms) per day or greater based on existing BAAQMD CEQA Guidelines or emissions of ROG, NOx, or PM2.5 of 10 tons per year or greater, or 54 pounds (25 kilograms) per day or greater based on proposed *Draft CEQA Air Quality Guidelines*. These *Draft CEQA Air Quality Guidelines* have a separate emission threshold for PM10 of 15 tons per year or greater, or 82 pounds (37 kilograms) per day[2];
8. Result in total construction-related emissions of ROG, NOx, or PM2.5 (non-inclusive of fugitive dust) of 10 tons per year or greater or 54 pounds (25

[2] In December 2009, the BAAQMD released Draft CEQA Guidelines. In anticipation of adoption of these Draft Guidelines, this EIR calculates emissions and compared to both BAAQMD current and draft thresholds.

kilograms) per day or greater based on proposed BAAQMD *Draft CEQA Air Quality Guidelines*. These *Draft CEQA Air Quality Guidelines* have a separate emission threshold for PM10 (non-inclusive of fugitive dust) of 15 tons per year or greater, or 82 pounds (37 kilograms) per day;

9. Result in potential to expose persons to substantial levels of Toxic Air Contaminants (TACs), such that the probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million;

10. Result in ground level concentrations of non-carcinogenic TACs such that the Hazard Index would be greater than 1 for the MEI;

11. Result in a substantial increase in diesel emissions; or

12. Result in an incremental increase in localized annual average concentrations of PM2.5 exceeding 0.3 micrograms per cubic meter from either project construction or operations, based on the proposed BAAQMD *Draft CEQA Air Quality Guidelines*.

B. Cumulative Impacts

13. Result in any individually significant impact;

14. Result in a fundamental conflict with the local general plan, when the general plan is consistent with the regional air quality plan. When the general plan fundamentally conflicts with the regional air quality plan, then if the contribution of the proposed project is cumulatively considerable when analyzed the impact to air quality should be considered significant;

15. Result in potential to expose persons to substantial levels of Toxic Air Contaminants (TACs), such that the probability of contracting cancer for the Maximally Exposed Individual (MEI) considering all existing sources within 1,000 feet of the project fence line and proposed project sources exceeds 100 in one million based on proposed BAAQMD *Draft CEQA Air Quality Guidelines*; or

16. Result in an incremental increase in localized annual average concentrations of PM2.5 exceeding 0.8 micrograms per cubic meter considering all existing sources within 1,000 feet of the project fence line and proposed project sources, based on proposed BAAQMD *Draft CEQA Air Quality Guidelines*.

Based on the Governor's Office of Planning and Research (OPR) Draft amendments to the CEQA Guidelines, in the City of Oakland the proposed project would be considered to have a significant cumulative impact regarding GHG emissions if it would[3]:

- Exceed adopted numeric thresholds of an appropriate regulatory agency that, either directly or indirectly, that may have a significant impact on the environment; or

- Conflict with any applicable plan, policy or regulation of an appropriate regulatory agency adopted for the purpose of reducing greenhouse gas emissions.

[3] OPR's Draft proposed amendments to the CEQA Guidelines are awaiting adoption by the Secretary for Natural Resources, as required by SB 97 (Chapter 185, 2007). The Natural Resources Agency will conduct formal rulemaking in 2009, prior to certifying and adopting the amendments, as required by SB 97.

The December 2009 BAAQMD *Draft CEQA Air Quality Guidelines* discussed above identify a project specific threshold of 1,100 metric tons per year as resulting in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change. The analysis in this EIR considers that, because the quantifiable threshold established in the *Draft CEQA Air Quality Guidelines* was formulated based on AB 32 reduction strategies, a project cannot exceed the numeric threshold without also conflicting with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

The following air quality analysis addresses all of these general criteria except Criterion 5 regarding odors. In general, the types of land uses that pose potential odor problems include refineries, chemical plants, wastewater treatment plants, landfills, composting facilities, and transfer stations. Only residential land uses are included in the project; no such odor generating uses are proposed.

The remaining criteria are addressed in the impact discussion below as follows:

Criterion 1: Analyzed under Impacts AIR-1, AIR-2, and AIR-5;
Criterion 2: Analyzed under Impacts AIR-1 and AIR-2;
Criterion 3: Analyzed under Impact AIR-5;
Criterion 4: Analyzed under Impacts AIR-1 and AIR-4;
Criterion 6: Analyzed under Impact AIR-3;
Criterion 7: Analyzed under Impacts AIR-1 and AIR-2;
Criterion 8: Analyzed under Impact AIR-1;
Criterion 9: Analyzed under Impact AIR-4;
Criterion 10: Analyzed under Impact AIR-4;
Criterion 11: Analyzed under Impact AIR-4;
Criterion 12: Analyzed under Impact AIR-4;
Criterion 13: Analyzed under Impact AIR-5;
Criterion 14: Analyzed under Impact AIR-5;
Criterion 15: Analyzed under Impact AIR-5;
Criterion 16: Analyzed under Impact AIR-5;
Criterion 17: Analyzed under Impact AIR-6 (see Section 4.1.4 below); and
Criterion 18: Analyzed under Impact AIR-6 (see Section 4.1.4 below).

Methodology

Air Quality

Project-related air quality impacts fall into two categories: impacts due to construction, and impacts due to project operation. First, during project construction, the project would affect local particulate concentrations primarily due to fugitive dust sources. Over the long-term, the project would result in an increase in emissions primarily due to increased motor vehicle trips. Onsite stationary sources (such as natural gas boilers for water and space heating) and area sources (such as for landscaping and use of consumer products) would result in lesser quantities of pollutant emissions.

Air quality assessment methodologies in this section generally conform to those identified by BAAQMD in its *CEQA Guidelines* from 1999. However, because BAAQMD recently released a Draft version of an updated *CEQA Air Quality Guidelines*, additional methodologies from this Draft document were also included in the following analysis.

For construction-related phase impacts, existing BAAQMD *CEQA Guidelines* do not require quantification of construction emissions, but recommends that significance be based on a consideration of the control measures to be implemented (BAAQMD, 1999). However, BAAQMD's *Draft CEQA Air Quality Guidelines* released in December of 2009 does establish thresholds, and in anticipation of this Draft Guidance, construction emissions are calculated and compared to the proposed significance thresholds. Construction emissions were estimated using the Urban Emissions Model, URBEMIS2007.

Operational phase emissions were also estimated using URBEMIS2007 for the expected 2015 project buildout and compared to both BAAQMD existing thresholds and proposed thresholds to determine significance. CO impacts were evaluated using the BAAQMD's methodology for manual calculation of CO concentrations specified in the 1999 BAAQMD CEQA *Guidelines*. Analysis was conducted for baseline conditions, 2015, and 2035 (cumulative analysis year) for both with- and without-project conditions.

A health risk assessment (HRA) (included in Appendix C) was also performed in order to analyze potential risk to people at the existing residences that would result from exposure to DPM associated with heavy duty equipment used to construct the project and delivery truck trips associated with operation of the project. In addition, risk to new residents located at the project site from exposure to DPM emissions from the nearby rail line as well as Interstate 880 (I-880) was evaluated. The emissions from these sources were input to the USEPA-approved dispersion model AERMOD to calculate ambient air concentrations in the area surrounding the project site. The output from AERMOD was then analyzed in accordance with guidelines established by the California Office of Environmental Health Hazards Assessment (OEHHA) to assess non-cancer risks and cancer risks.

Lastly, cumulative impacts of the project were evaluated based on the existing BAAQMD CEQA *Guidelines* and *Draft CEQA Air Quality Guidelines* as discussed under the significance thresholds.

Project Construction Impacts

Impact AIR-1: Activities associated with demolition, site preparation, and construction throughout development of the project would generate criteria air pollutants. (Less than Significant under existing and proposed BAAQMD Thresholds)

Construction-related emissions may cause adverse effects on the local air quality. Project construction would involve the demolition of the existing surface parking lot at the project site and new construction across approximately 3.4 acres. The project that would be constructed in four phases over a period of approximately four years entails approximately 275 residential units

in three new buildings and parking in a new five-story parking structure. Construction-related emissions arise from a variety of activities including (1) demolition; (2) grading, excavation, and other earth moving activities; (3) travel by construction equipment and employee vehicles, especially on unpaved surfaces; (4) exhaust from construction equipment; (5) architectural coatings; and (6) asphalt paving. The emissions generated from these construction activities include:

- Dust (including PM10 and PM2.5) primarily from "fugitive" sources (i.e., emissions released through means other than through a stack or tailpipe) such as soil disturbance;
- Combustion emissions of criteria air pollutants (ROG, NOx, CO, SOx, PM10, PM2.5) primarily from operation of heavy equipment construction machinery (primarily diesel operated), portable auxiliary equipment and construction worker automobile trips (primarily gasoline operated);
- Evaporative emissions (ROG) from asphalt paving and architectural coating applications.

Since there are no existing permanent structures on the surface parking lot, demolition activities would not be expected to result in airborne entrainment of asbestos, a TAC.

Construction-related fugitive dust emissions at the project site would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. Without mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM10 and PM2.5 concentrations may be adversely affected, temporarily and intermittently, during the construction period. In addition, the fugitive dust generated by construction would include not only PM10, but also larger particles, which would fall out of the atmosphere, potentially as far as several hundred feet from the site and could result in nuisance impacts.

Construction activities would also result in emissions of ROG, NOx, CO, PM10, and PM2.5 from equipment exhaust, construction-related vehicular activity and construction worker automobile trips. Emission levels for construction activities would vary depending on the number and type of equipment use, duration of use, operation schedules (the time and frequency), and the number of construction workers traveling to the worksite by motorized vehicle. Criteria pollutant emissions of ROG and NOx from these emissions sources would incrementally add to the regional atmospheric loading of ozone precursors during project construction.

As discussed previously, the current BAAQMD guidelines do not require quantification of construction emissions, but rather recommend that significance be based on a consideration of the control measures to be implemented. The proposed project would be subject to dust control measures recommended by BAAQMD (see Standard Condition AIR-1, *Dust Control*), which are uniformly applied by the City as Standard Conditions of Approval. The proposed project would also be subject to Standard Conditions of Approval related to construction exhaust emissions (see Standard Condition AIR-2, *Construction Emissions*).

BAAQMD has proposed new daily mass significance thresholds for construction-related activities in its *Draft CEQA Air Quality Guidelines*. These thresholds are 54 pounds per day of either ROG, NOx or PM2.5 and 82 pounds per day for PM10.

Construction emissions were modeled using URBEMIS 2007 and are depicted below in **Table 4.1-3** for a worse-case day for each pollutant under each year of development. For each of the four phases of construction, it was assumed that demolition and grading would occur for approximately one month, building construction would occur for 16 to 17 months, architectural coating would take two months (phases two through four), and paving would occur for one month (phases two through four). It was also assumed that the subsequent phase of construction would have an approximate six-month overlap with construction of the previous phase. Fugitive dust emissions would be generated primarily during demolition and grading activities for each phase of development. All input and output sheets from the URBEMIS2007 program, which details all timing assumptions and sources, is provided in Appendix C.

TABLE 4.1-3
PEAK DAY CONSTRUCTION EMISSIONS (POUNDS PER DAY) FOR THE PROPOSED PROJECT

Construction Year	Estimated Worse-Case Project Construction Emissions (pounds/day)[a]				
	ROG	NO_x	CO	PM10 (Total/Exhaust Only)	PM 2.5 (Total/Exhaust Only)
2010	4	26	22	13/1	4/1
2011	7	41	35	24/2	7/2
2012	43	33	26	22/2	6/2
2013	38	30	24	16/2	5/1
2014	30	10	10	1/1	1/1
Applied BAAQMD Operations Thresholds (no construction threshold adopted)	80	80	550	80	NA
BAAQMD Draft Construction Thresholds[b]	54	54	NA	82	54
Significant (Yes or No)?	No	No	No	No	No

[a] Emission factors were generated by the Air Board's URBEMIS 2007 model for the worse-case day per construction year to account for development phase overlap. Additional information is provided in Appendix C.
[b] Thresholds are from the December 2009 BAAQMD *Draft CEQA Air Quality Guidelines*. PM10 and PM2.5 thresholds are for exhaust emissions only.

SOURCE: ESA, 2009.

As shown in Table 4.1-3, worse-case daily construction-related emissions for development of each phase would be less than the existing and proposed BAAQMD thresholds for all criteria pollutants and the impact would be less than significant. Notably, Standard Conditions of Approval AIR-1, AIR-2, and AIR-4 are required since they are BAAQMD General Requirements. With the incorporation of Standard Conditions of Approval AIR-1, AIR-2, and AIR-4, potential impacts slated to criteria air pollutants during construction would be less than significant.

Significance after Implementation of Standard Conditions of Approval: Less than Significant.

Project Operations Impacts

Impact AIR-2: The project would result in increased emissions of criteria pollutants and their precursors from vehicular traffic to and from the project site; however, the emission increases from the project would not exceed BAAQMD significance criteria. (Less than Significant under the existing and proposed BAAQMD Thresholds)

The project would result in an increase in criteria air pollutant emissions 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.) and mobile on-road sources (automobile and truck trips). Exhaust emissions from passenger vehicle travel associated with the project were calculated by using the URBEMIS2007 program of CARB, which uses EMFAC2007 emission factors and a standard mix of passenger vehicles. The last phase of construction of the project is assumed to be completed in 2014, so 2015 has been used as the project buildout year in this analysis. URBEMIS2007 also calculates area source emissions based on the size of the project.

The proposed project would result in approximately 1,179 new vehicle trips per day. **Table 4.1-4** summarizes project-generated mobile and on-site area emissions of criteria pollutants for the project in 2015 (buildout) and compares them with existing and proposed BAAQMD significance threshold emission levels. As indicated in Table 4.1-4, project-related mobile emissions of ROG, NOx, CO, PM10, and PM2.5 would not exceed the significance threshold emission levels. Therefore, impacts from increase in these emissions would be less than significant.

TABLE 4.1-4
ESTIMATED DAILY OPERATIONAL EMISSIONS FOR THE PROPOSED PROJECT

Emissions Source	Project Emissions, 2015 (pounds/day)[a]				
	ROG	NOx	CO	PM10	PM 2.5
Area Source	16	2	32	5	5
Vehicular Source	8	7	80	17	3
Total	24	9	112	22	8
BAAQMD Current Operations Thresholds	80	80	550[b]	80	NA
BAAQMD Draft Operations Thresholds[c]	54	54	NA	82	54
Significant (Yes or No)?	No	No	No	No	No

[a] Emission factors were generated by CARB's URBEMIS2007 model and assume a default vehicle mix. ROG and NOx daily estimates are for summertime conditions, whereas CO and particulates are for wintertime conditions. Additional information is provided in Appendix C.

[b] Projects for which mobile source CO emissions exceed 550 pounds per day do not necessarily have a significant air quality impact, but are required to estimate localized CO concentrations. Refer to Impact AIR-3 for analysis of project CO emissions.

[c] Thresholds are from the December 2009 BAAQMD *Draft CEQA Air Quality Guidelines*.

SOURCE: ESA, 2009.

Mitigation: None required.

Impact AIR-3: Mobile emissions generated by project traffic would increase CO concentrations at intersections in the project vicinity. (Less than Significant)

Project-related traffic may lead to localized "hot spots" or areas with high concentrations of CO concentrations around stagnation points, such as major intersections and heavily traveled and congested roadways. Project-related traffic could not only increase baseline traffic volumes but also cause baseline non-project traffic to travel at slower, more polluting speeds.

To evaluate "hot spot" potential, a microscale impact analysis was conducted adjacent to five intersections in the vicinity of the project site, would be most impacted by project traffic. The intersections were chosen based on their level of service (LOS) and the percentage contribution of project-traffic. It was assumed that if the relatively higher volumes of project-generated traffic at these intersections did not result in adverse impacts, impacts at other nearby intersections would experience similar or less substantial effects. For this analysis, local CO concentrations were estimated by applying the BAAQMD's methodology for manual calculation of CO concentrations along roadways and intersections to the results of the traffic study prepared for this project. Results of the concentrations levels are shown in **Table 4.1-5**.

As shown in Table 4.1-5, the analysis demonstrated that no exceedances would occur in the vicinity of any of the four analyzed intersections under any of the scenarios. Therefore, the effect of the project on local CO standards would be less than significant. The number of daily and peak hour vehicle trips generated during construction periods would be less than the number of trips generated during operation of the project. Therefore, the impacts of construction traffic on CO levels at intersections in the vicinity of the project would also be less than significant.

Thus, project-related and cumulative traffic would have a less-than-significant impact on local CO concentrations.

Mitigation: None required.

Impact AIR-4: The proposed project could result in exposure of persons to substantial levels of PM2.5 concentrations and Toxic Air Contaminants (TACs) which may result in adverse health effects. (Significant during construction under proposed BAAQMD Thresholds only)

In August 1998, CARB identified DPM as a TAC. OEHHA, which is a branch of California EPA, established toxicity values for DPM both as a carcinogen and a non-carcinogen. The carcinogenic risk factor established by OEHHA is by far much more restrictive than the non-carcinogenic risk

TABLE 4.1-5
ESTIMATED CARBON MONOXIDE CONCENTRATIONS AT SELECTED INTERSECTIONS IN PROJECT VICINITY

Scenario	Averaging Time (hours)	Concentrations (ppm)[a,b] 35th Ave / E. 12th St.	San Leandro / 35th Ave	37th Ave / E. 12th St.	San Leandro / 37th Ave
Baseline	1	7.3	7.5	6.8	7.6
PM Peak Hour	8	5.1	5.3	4.8	5.3
Baseline + Project	1	7.3	7.5	6.8	7.6
PM Peak Hour	8	5.1	5.3	4.8	5.3
2015 Baseline	1	7.0	7.7	6.6	7.8
PM Peak Hour	8	4.9	5.4	4.6	5.5
2015 + Project	1	7.1	7.7	6.6	7.8
PM Peak Hour	8	4.9	5.4	4.6	5.5
Cumulative 2035 Baseline	1	7.2	7.8	6.6	7.9
PM Peak Hour	8	5.0	5.5	4.6	5.5
Cumulative 2035 + Project	1	7.1	7.8	6.6	7.9
PM Peak Hour	8	5.0	5.5	4.6	5.5

NOTE: No values exceed applicable standards.

[a] Concentrations relate to a location at the edge of the roadways that form the intersection. The CO analysis focuses on the weekday afternoon (PM) peak-hour because the project's effects on traffic congestion and related CO concentrations are greater during that period than during the morning (AM) peak hour. Carbon monoxide estimates shown above include background concentrations of 6.2 ppm, one-hour average, and 4.3 ppm, eight-hour average for 2009 and 6 ppm, one-hour average and 4.2 ppm, eight-hour average for 2015 and 2035. These background concentrations are based on the BAAQMD protocol and CO isopleths. See Appendix C for more detailed CO screening-level analysis assumptions.

[b] The California ambient air quality standard for CO is 20 ppm, one-hour average and 9 ppm, eight-hour average.

SOURCE: ESA, 2009.

factor, and the health risks evaluated in this report are concerned with the carcinogenic risks. An analysis was carried out to determine the health effects of diesel emissions from the project on the surrounding community. The health effects were for both construction of the project and for operations after project completion. The health effects of DPM emissions on future occupants of the project site from other sources in the area are evaluated under Cumulative Air Quality Impacts.

Project Construction Impact

Localized PM2.5 Concentrations

Concentrations of PM2.5 were modeled for the worst case construction year (2011). During this year approximately 100 pounds of fugitive PM2.5 would be emitted as dust and approximately 300 pounds of PM2.5 would be emitted from construction equipment exhaust. Based on dispersion modeling, exhaust emissions would result in concentrations of 0.35 $\mu g/m^3$ at the maximum exposed receptor while fugitive emissions would result in concentrations of 0.17 $\mu g/m^3$. Combined, this would result in concentrations of 0.52 $\mu g/m^3$, which would exceed the BAAQMD proposed threshold of 0.3 $\mu g/m^3$ and therefore impacts would be significant if the BAAQMD adopts the proposed thresholds.

Implementation of Mitigation Measure AIR-4 would require the heavy duty construction fleet to reduce emissions by 45 percent, which would reduce concentrations from exhaust emissions to 0.19 μg/m^3. Fugitive dust control measures included in Standard Condition of Approval AIR-1could reduce PM2.5 emissions by at least 50 percent (BAAQMD, 2009), lowering concentrations to 0.08 μg/m^3. This would lead to a combined concentration of 0.27 μg/m^3. This value is below the proposed threshold of significance and would therefore constitute a less-than-significant impact with mitigation.

Cancer Risk Associated with Project Construction

Off-road emissions from construction activities were modeled as a series of 15 volume sources spread around the project site. The maximum exposed off-site receptor would be located on the north side of East 12th Street directly adjacent to the proposed project site. The maximum concentrations at the nearest off-site receptor were estimated to be approximately 0.25 μg/m^3. In addition to offsite receptors, new residential receptors that would move in as residences are completed could be exposed to elevated DPM concentrations during construction of the remaining phases. Concentrations at these receptors were estimated to be approximately 0.37 μg/m^3.

Since construction work would only last for approximately four years, risk was evaluated based on the high-end child breathing rate of 581 L/kg bodyweight-day (OEHHA, 2003). Assuming an exposure frequency and duration of 350 days per year for four years along with the child breathing rate mentioned above, the maximum incremental cancer risk to off-site residential receptors in the project area would be approximately 8.8 in one million. For new residential receptors that would move in at the completion of Phase 1, exposure duration was assumed to be three years. Based on this assumption, risk to new receptors would be approximately 9.7 in one million. For construction emissions, the existing toxic risk threshold of ten excess cancer deaths in one million is considered (BAAQMD, 2009). Furthermore, implementation of Mitigation Measure AIR-4 would reduce DPM concentrations by approximately 45 percent, resulting in a risk of approximately 4.8 in one million at the maximum exposed off-site receptor and 5.3 in one million at the maximum exposed on-site receptor. Therefore, impacts would be less than significant.

Project Operation Impact

Localized PM2.5 Concentrations

Emissions of PM2.5 from additional vehicle traffic generated by the project were modeled using the CAL3QHCR model. Concentrations were modeled assuming all project-generated traffic would travel down a single stretch of roadway along East 12th Street, which is a conservative assumption. Based on modeling data, project-generated traffic would result in PM2.5 concentrations of 0.02 μg/m^3 at the maximum exposed receptor. This would be well below the BAAQMD proposed threshold of 0.3 μg/m^3 and impacts would be less than significant.

Cancer Risk Associated with Project Operations

Heavy duty trucks traveling to and from the site during project operations would constitute a source of DPM emissions. Based on the traffic report conducted for this project, daily traffic increases due to the project would be approximately 1,179 net total vehicle trips. To determine the proportion of new trips that would be truck trips, it was assumed that the general vehicle fleet percentages used by URBEMIS 2007 to calculate mobile source emissions would apply to this project. Specifically, the URBEMIS model indicates that heavy-duty diesel trucks account for approximately 1.7 percent of all on-road motor vehicles. Heavy-duty truck emission rates were derived from the EMFAC2007 model. This model incorporates state and federal regulations that have been adopted to reduce DPM emissions from on-road trucks. When estimating emissions for future years, EMFAC2007 assumes a mix of model years, and it assumes that a certain fraction of vehicles are older models (i.e., vehicles prior to 2007) that are not subject to the newest regulations. EMFAC2007 factors in the phasing out (scrappage) of older model vehicles and the replacement of these trucks with newer trucks that are subject to newer regulations. The model only predicts emission rates out to 2040. Therefore, it was assumed that after 2040 emission rates would level off and that no further decreases in emissions would occur. Emission rates for 2014 through 2083 were averaged to determine the average daily emission rate over a 70-year period.

Emission rates were determined assuming a vehicle speed of 25 miles per hour near the project site. Emissions were calculated for a total distance of one-half mile, which includes one-quarter mile as the truck approaches the site and one-quarter mile as the truck leaves the site. The average DPM emissions along this half-mile stretch were estimated to be approximately 0.002 pounds per day or 0.7 pounds per year.

On-road truck emissions from delivery truck trips to the site during project operations were modeled as a half-mile long line source traveling from the project site to Fruitvale Avenue along East 12thStreet. A fenceline grid was used to model receptors at the roadway edge and at distances of 25, 50, 100, 150, and 250 meters from East 12thStreet. The maximum exposed receptor from operations would also be located on the north side of East 12thStreet. Annual average concentrations at this receptor were estimated to be up to 0.0011$\mu g/m^3$.

The cancer risk to existing residents from operation of the project was evaluated based on the 80th percentile adult breathing rate of 302 L/kg-body weight-day. Based on this breathing rate and an exposure frequency and duration of 350 days per year for 70 years, maximum incremental cancer risk from project operations would be approximately 0.4 in one millions**.** This risk is less than the BAAQMD significance threshold of 10 in a million. The impact would be less than significant.

Mitigation Measure

Mitigation Measure AIR-4: The project applicant and its contractors shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used during construction of the project would achieve a project wide fleet-average of 20 percent NOx reduction and a 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options from reducing emissions include the use of late model engines, low-

emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as such become available.

Significance after Implementation of Standard Conditions of Approval and Mitigation Measure: Less than Significant.

Cumulative Air Quality Impacts

Impact AIR-5: The proposed project is fundamentally consistent with the growth assumptions of the Bay Area Clean Air Plan. (Less than Significant)

Geographic Context

The geographic area relevant to cumulative air quality impacts is the regional air basin, which contributes to regional emissions of criteria pollutants, and basin-wide projections. Further, the context includes projects in the ACCMA travel demand model upon which the cumulative traffic analysis in Section 4.3 is based. Additionally, the following projects from City's Major Projects list are also considered in particular:

Project Name	Components
Fruitvale Point Project 880 Fruitvale Avenue	• 47 residential units • 49 live/work units • 4,000 s.f. commercial
Wattling Street Project 3927 Wattling Street	• 18 condominium units • 61 townhome units
St. Joseph's Project 2647 International Boulevard	• Rehabilitation of the historic building • 80 units of senior housing • 15,000 s.f. office
2985 Ford Street Project	• 56 condominium units • 15 live/work units
Gateway Community Development Project East 12th Street between 25th Avenue and Derby Street	• 810 residential units • 26,000 s.f. commercial
Ford Street Lofts 3041, 3061 and 3065 Ford Street	• 81 condominium units
Cotton Mills Studios 1091 Calcot Place	• 74 unit live/work conversion
Glascock Residential Project "The Estuary" 2893 Glascock	• 100 residential units

Cumulative Criteria Pollutant Impact Discussion

Locally, emissions from project sources would be combined with emissions from other sources, primarily including area traffic (local streets and freeways) from existing and future development in the greater project area. Although cumulative traffic volumes would increase by 2035, this

increase would be partly offset by the reduction in emissions on a grams-per-mile basis. This is due to attrition of older, high polluting vehicles; improvements in the overall automobile fleet; and improved fuel mixtures (as a result of on-going state and federal emissions standards and programs for on-road motor vehicles). As shown in Table 4.1-5, cumulative impacts on CO concentrations at local intersections in 2035 would be less than significant as the worst-case CO concentrations at all the analyzed intersections would be below the corresponding ambient standards.

The BAAQMD CEQA *Guidelines* state that if a project requires a General Plan Amendment, a fundamental conflict could occur if the project generates more vehicle miles traveled (VMT) than what would occur from the project site under the zoning and land use designations that exist without the proposed General Plan Amendment. However, the proposed project does not require a General Plan Amendment.

According to the BAAQMD CEQA *Guidelines*, any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. Table 4.1-4 shows that the operational emissions of ROG, NOx and PM10 due to project-related traffic estimates based on the CARB model URBEMIS2007 would be less than the significance criteria of 80 pounds per day.

In addition, according to Impact AIR-4, the proposed project would result in PM2.5 concentrations that exceed the BAAQMD proposed threshold and therefore impacts would be significant if the BAAQMD adopts the proposed thresholds. This impact would be reduced to less than significant with the implementation of Mitigation Measure AIR-4.

For projects that individually have a less-than-significant impact on regional air quality, the BAAQMD *Guidelines* state that the cumulative impact should be determined based on the project's consistency with the applicable local Clean Air Plan, in this case, the *Bay Area 2005 Ozone Strategy*. For a project to be consistent with the *Bay Area 2005 Ozone Strategy*, the project must not conflict with or obstruct its implementation, and should be consistent with its underlying growth assumptions, which are the ABAG *Projections 2003* forecasts. The City's General Plan is consistent with the CAP because data and projections from the General Plan are incorporated into the CAP. The project, therefore, is consistent with the General Plan.

Finally, the proposed project would generally be consistent with the *Bay Area 2005 Ozone Strategy* through consistency with the Smart Growth principles that are incorporated into ABAG's *Projections 2003* and that the proposed project, as well as the Oakland Cumulative Growth Scenario, embodies. As described by ABAG (2004), Smart Growth refers to:

> …development that revitalizes central cities …, supports and enhances public transit, promotes walking and bicycling, and preserves open spaces and agricultural lands. … Focusing new housing and commercial development within already developed areas requires less public investment in new roads, utilities and amenities. Investment in the urban core can reduce crime, promote affordable housing and create vibrant central cities and small towns. By coordinating job growth with housing growth, and ensuring a good match between income levels and housing prices, smart growth aims to reverse the trend

> toward longer commutes, particularly to bedroom communities beyond the region's boundaries. People who live within easy walking distance of shops, schools, parks and public transit have the option to reduce their driving and therefore pollute less than those living in car-dependent neighborhoods.

The proposed project would be a transit-oriented development (TOD), consistent with the aforementioned Smart Growth concepts, Oakland General Plan LUTE policies (see *City of Oakland Local Plan and Policies Relevant to GHG Emissions and Climate Change*, above), and the Alameda County Congestion Management Agency (ACCMA). ACCMA has adopted transportation and land use goals that characterize TODs as "residential or mixed-use development designed and located to make transit use as attractive and convenient as possible." Specifically, ACCMA considers TODs to be located within one-third mile of a transit station or trunkline bus route and to include moderately high-density housing that has been designed for convenient walk, bicycle, and transit access. In addition, the project would be infill development that would provide new housing and would be within walking distance of a number of local schools.

In summary, the project would not fundamentally conflict with the *Bay Area 2005 Ozone Strategy* (the currently adopted Clean Air Plan) and would not result in a cumulative air quality impact. The impact would be less than significant.

Cumulative Local Community Risk Impact Discussion

Cumulative PM2.5 Exposure at Project Residents. Sources of PM2.5 within 1,000 feet of the project site include emissions from traffic on I-880, 35th Avenue, San Leandro Street, East 12th Street, and International Boulevard, as well as emissions from trains traveling along the local rail system. Emissions from vehicles traveling along streets were modeled using the roadway dispersion model, CAL3QHCR. Based on modeling results, maximum PM2.5 concentrations at project receptors are as follows:

- I-880: 0.31 $\mu g/m^3$;
- 35th Avenue: 0.37 $\mu g/m^3$;
- East 12th Street: 0.25 $\mu g/m^3$;
- San Leandro Street: 0.24 $\mu g/m^3$; and
- East 14th Street/International: 0.06 $\mu g/m^3$.

In addition to roadways, emissions from trains traveling on the nearby railroad would contribute to PM2.5 concentrations. During the worst-case year, railroad emissions could contribute an additional 0.04 $\mu g/m^3$of PM2.5 to receptors at the project site. This would result in a cumulative PM2.5 level of 1.27 $\mu g/m^3$ at the project site. This concentration exceeds the draft threshold of 0.8 $\mu g/m^3$.

Implementation of Standard Condition of Approval AIR-3, described above, would require the project applicant to install particulate filters that meet a Minimum Efficiency Reporting Value (MERV) rating of 13 or higher based on ASHRAE Standard 52.2 Test Procedures. Such filters would remove up to 75 percent of fine particulate matter. Therefore, with implementation of this measure, project receptors would be exposed to PM2.5 levels of approximately 0.3 $\mu g/m^3$, which

is below the BAAQMD recommended threshold. Impacts would therefore be less than significant with implementation of Standard Conditions of Approval.

Cumulative Cancer Risk at Project Receptors. Cancer risk at the proposed project site from exposure to DPM and other toxics was evaluated. Based on the BAAQMD's toxic inventory for 2004, there are two facilities that emit TACs within 1,000 feet of the project site. The two facilities are East Bay Generator, which emits butyl cellosolve; and Maharlika Body Shop, which emits methyl ethyl ketone. Neither of these chemicals has been identified as a carcinogen. Furthermore, CARB did not identify risk from either of these facilities. Therefore, for the purpose of this analysis it is assumed that they would not contribute a significant health risk to receptors at the site. In addition to these facilities, there is a gas station located approximately 600 feet north of the site. Gas stations may emit benzene, which is a known carcinogen. To be conservative, it was assumed that risk from this gas station would be ten in one million at the project site. It should be noted, however, that risk would likely be much lower. Risk from I-880 and locomotives traveling along the railroad were estimated to be approximately 12.2 in one million and 3.2 in one million, respectively. In addition to risk from these sources, risk was evaluated from heavy-duty truck traffic on 35th Avenue, East 12th Street, San Leandro Street and East 14th Street. Based on the assumption that approximately 1.7 percent of vehicles traveling on these roadways would be heavy-duty trucks, risk from each roadway was estimated as follows:

- 35th Avenue: 3.8 in one million;
- East 12th Street: 2.6 in one million;
- San Leandro Street: 2.9 in one million; and
- East 14th Street/International: 0.6 in one million.

Therefore, cumulative risk at the project site would be approximately 35.2 in 1 million, which includes the assumed 10 in 1 million risk from the nearby gas station. This value would be below BAAQMD's proposed cumulative risk threshold of 100 in 1 million, and therefore, impacts would be less than significant.

Mitigation: None required.

4.1.3 GHG Emissions and Climate Change Setting

Regulatory Context for GHG Emissions and Climate Change

International and 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 five 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.

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 (CCTP, 2006).

U.S. Environmental Protection Agency (USEPA)

To date, the USEPA has not regulated GHGs under the Clean Air Act (discussed above) based on the assertion that the "Clean Air Act does not authorize it to issue mandatory regulations to address global climate change and that it would be unwise to regulate GHG emissions because a causal link between GHGs and the increase in global surface air temperatures has not been unequivocally established." However, the U.S. Supreme Court in *Massachusetts v. EPA* (April 2, 2007) held in 2007 that the USEPA can and should consider regulating motor-vehicle GHG emissions.

State of California

Assembly Bill (AB) 1493

On July 1, 2002, the California Assembly passed Assembly Bill (AB) 1493 (signed into law on July 22, 2002), requiring CARB to "adopt regulations that achieve the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." The regulations were to be adopted by January 1, 2005, and apply to 2009 and later model-year vehicles. In September 2004, CARB responded by adopting "CO_2-equivalent fleet average emission" standards. The standards will be phased in from 2009 to 2016, reducing emissions by 22 percent in the "near term" (2009–2012) and 30 percent in the "mid-term" (2013–2016), as compared to 2002 fleets.

Executive Order (EO) S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05, establishing statewide GHG emissions reduction targets. This EO provides that by 2010, emissions shall be reduced to 2000 levels; by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80 percent of 1990 levels. The Secretary of the California Environmental Protection Agency (CalEPA) is charged with coordinating oversight of efforts to meet these targets and formed the Climate Action Team (CAT) to carry out the EO. Several of the programs developed by the CAT to meet the emission targets are relevant to residential construction and are outlined in a March 2006 report (CalEPA, 2006). These include anti-idling of certain classes of construction vehicles; provision of recycling facilities within residential buildings and communities; compliance with the Energy Commission's building and

appliance energy efficiency standards; compliance with California's Green Buildings and Solar initiatives; and implementation of water-saving technologies and features.

California Assembly Bill 32 (AB 32)

On August 31, 2006, the California Assembly passed Bill 32 (AB 32) (signed into law on September 27, 2006), the California Global Warming Solutions Act of 2006. AB 32 commits California to reduce GHG emissions to 1990 levels by 2020 and establishes a multi-year regulatory process under the jurisdiction of CARB to establish regulations to achieve these goals. The regulations shall require monitoring and annual reporting of GHG emissions from selected sectors or categories of emitters of GHGs. By January 1, 2008, CARB was required to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990, which must be achieved by 2020. By January 1, 2011, CARB is required to adopt rules and regulations, which shall become operative January 1, 2012, to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

On April 20, 2007, CARB published *Proposed Early Actions to Mitigate Climate Change in California* (CARB, 2007). There are no early action measures specific to residential development included in the list of 36 measures identified for CARB to pursue during calendar years 2007, 2008, and 2009. Also, this publication indicated that the issue of GHG emissions in CEQA and General Plans was being deferred for later action, so the publication did not discuss any early action measures generally related to CEQA or to land use decisions. As noted in that report, "AB 32 requires that all GHG reduction measures adopted and implemented by the Air Resources Board be technologically feasible and cost effective" (CARB, 2007). The law permits the use of market-based compliance mechanisms to achieve those reductions and also requires that GHG measures have neither negative impacts on conventional pollutant controls nor any disproportionate socioeconomic effects (among other criteria).

On December 11, 2008, CARB adopted its *Climate Change Scoping Plan* (Scoping Plan) (CARB, 2008), which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. 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. The measures approved by CARB will be developed over the next two years and be in place by 2012.

The Scoping Plan also includes recommended measures that were developed to reduce GHG emissions from key sources and activities while improving public health, promoting a cleaner environment, preserving our natural resources, and ensuring that the impacts of the reductions are equitable and do not disproportionately impact low-income and minority communities. These measures, shown below in **Table 4.1-6** by sector, also put the state on a path to meet the long-term 2050 goal of reducing California's GHG emissions to 80 percent below 1990 levels.

California Senate Bill 1368 (SB 1368)

On August 31, 2006, the California Senate passed SB 1368 (signed into law on September 29, 2006), which requires the Public Utilities Commission (PUC) to develop and adopt a "greenhouse gases emission performance standard" by February 1, 2007, for the private electric utilities under its regulation. The PUC adopted an interim standard on January 25, 2007, but has formally requested a delay until September 30, 2007, for the local publicly-owned electric utilities under its regulation. These standards apply to all long-term financial commitments entered into by electric utilities. The California Energy Commission (CEC) was required to adopt a consistent standard by June 30, 2007. However, this date was missed, and CEC will address the concerns of the Office of Administrative Law (OAL) and resubmit the rulemaking as soon as possible. The rulemaking then must be approved by the OAL before it can take effect (Collord, 2007).

Senate Bill 97

Governor Schwarzenegger signed SB 97 (Chapter 185, Statutes 2007) into law on August 24, 2007. The legislation provides partial guidance on how GHGs should be addressed in certain CEQA documents.

SB 97 requires the Governor's Office of Planning and Research (OPR) to prepare CEQA Guidelines for the mitigation of GHG emissions, including, but not limited to, effects associated with transportation or energy consumption. The California Natural Resources Agency must certify and adopt the guidelines by January 1, 2010. OPR and the California Natural Resources Agency are required to periodically review the guidelines to incorporate new information or criteria adopted by CARB pursuant to the Global Warming Solutions Act, scheduled for 2012.

On June 19, 2008, OPR published a technical advisory on CEQA and climate change. The advisory provides 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 recognizes that OPR will develop, and the California Natural 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 points out that neither CEQA nor the CEQA *Guidelines* prescribe thresholds of significance or particular methodologies for performing an impact analysis. The advisory states, "This is left to lead agency judgment and discretion, based upon factual data and

TABLE 4.1-6
LIST OF RECOMMENDED ACTIONS BY SECTOR

Measure No.	Measure Description	GHG Reductions (Annual Million Metric Tons CO_2e)
Transportation		
T-1	Pavley I and II – Light Duty Vehicle Greenhouse Gas Standards	31.7
T-2	Low Carbon Fuel Standard (Discrete Early Action)	15
T-3[1]	Regional Transportation-Related Greenhouse Gas Targets	5
T-4	Vehicle Efficiency Measures	4.5
T-5	Ship Electrification at Ports (Discrete Early Action)	0.2
T-6	Goods Movement Efficiency Measures. • Ship Electrification at Ports • System-Wide Efficiency Improvements	3.5
T-7	Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)	0.93
T-8	Medium- and Heavy-Duty Vehicle Hybridization	0.5
T-9	High Speed Rail	1
Electricity and Natural Gas		
E-1	Energy Efficiency (32,000 GWh of Reduced Demand) • Increased Utility Energy Efficiency Programs • More Stringent Building & Appliance Standards Additional Efficiency and Conservation Programs	15.2
E-2	Increase Combined Heat and Power Use by 30,000 GWh (Net reductions include avoided transmission line loss)	6.7
E-3	Renewables Portfolio Standard (33% by 2020)	21.3
E-4	Million Solar Roofs (including California Solar Initiative, New Solar Homes Partnership and solar programs of publicly owned utilities) • Target of 3000 MW Total Installation by 2020	2.1
CR-1	Energy Efficiency (800 Million Therms Reduced Consumptions) • Utility Energy Efficiency Programs • Building and Appliance Standards • Additional Efficiency and Conservation Programs	4.3
CR-2	Solar Water Heating (AB 1470 goal)	0.1
Green Buildings		
GB-1	Green Buildings	26
Water		
W-1	Water Use Efficiency	1.4†
W-2	Water Recycling	0.3†
W-3	Water System Energy Efficiency	2.0†
W-4	Reuse Urban Runoff	0.2†
W-5	Increase Renewable Energy Production	0.9†
W-6	Public Goods Charge (Water)	TBD†
Industry		
I-1	Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	TBD
I-2	Oil and Gas Extraction GHG Emission Reduction	0.2
I-3	GHG Leak Reduction from Oil and Gas Transmission	0.9
I-4	Refinery Flare Recovery Process Improvements	0.3
I-5	Removal of Methane Exemption from Existing Refinery Regulations	0.01

TABLE 4.1-6 (Continued)
LIST OF RECOMMENDED ACTIONS BY SECTOR

Measure No.	Measure Description	GHG Reductions (Annual Million Metric Tons CO_2e)
Recycling and Water Management		
RW-1	Landfill Methane Control (Discrete Early Action)	1
RW-2	Additional Reductions in Landfill Methane • Increase the Efficiency of Landfill Methane Capture	TBD†
RW-3	High Recycling/Zero Water • Commercial Recycling • Increase Production and Markets for Compost • Anaerobic Digestion • Extended Producer Responsibility • Environmentally Preferable Purchasing	9†
Forests		
F-1	Sustainable Forest Target	5
High Global Warming Potential (GWP) Gases		
H-1	Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Services (Discrete Early Action)	0.26
H-2	SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)	0.3
H-3	Reduction of Perfluorocarbons in Semiconductor Manufacturing (Discrete Early Action)	0.15
H-4	Limit High GWP Use in Consumer Products Discrete Early Action (Adopted June 2008)	0.25
H-5	High GWP Reductions from Mobile Sources • Low GWP Refrigerants for New Motor Vehicle Air Conditioning Systems • Air Conditioner Refrigerant Leak Test During Vehicle Smog Check • Refrigerant Recovery from Decommissioned Refrigerated Shipping Containers • Enforcement of Federal Ban on Refrigerant Release during Servicing or Dismantling of Motor Vehicle Air Conditioning Systems	3.3
H-6	High GWP Reductions from Stationary Sources • High GWP Stationary Equipment Refrigerant Management Program: - Refrigerant Tracking/Reporting/Repair Deposit Program - Specifications for Commercial and Industrial Refrigeration Systems • Foam Recovery and Destruction Program • SF Leak Reduction and Recycling in Electrical Applications • Alternative Suppressants in Fire Protection Systems • Residential Refrigeration Early Retirement Program	10.9
H-7	Mitigation Fee on High GWP Gases	5
Agriculture		
A-1	Methane Capture at Large Dairies	1.0†

[1] This is not the SB 375 regional target. CARB will establish regional targets for each MPO region following the input of the regional targets advisory committee and a consultation process with MPO's and other stakeholders per SB 375

† GHG emission reduction estimates are not included in calculating the total reductions needed to meet the 2020 target

Source: CARB, 2008

guidance from regulatory agencies and other sources where available and applicable." OPR recommends 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 sets 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.

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 is not a guidance document. It is not intended to dictate or direct how any agency chooses to address GHG emissions. Rather, it is 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 notes 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 discusses 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.

Other non-zero thresholds discussed in the paper include:

- 900 metric tons/year carbon dioxide equivalents (CO_2e) (a market capture approach);
- 10,000 metric tons/year CO_2e (potential CARB mandatory reporting level with Cap and Trade);
- 25,000 metric tons/year CO_2e (the CARB mandatory reporting level for the statewide emissions inventory);
- 40,000 to 50,000 metric tons/year CO_2e (regulated emissions inventory capture – using percentages equivalent to those used in air districts for criteria air pollutants),
- Projects of statewide importance (9,000 metric tons/year CO_2e for residential; 13,000 metric tons/year CO_2e for office project; and 41,000 metric tons/year CO_2e for retail projects); and
- Unit-based thresholds and efficiency-based thresholds that were not quantified in the report.

In January 2009, OPR released preliminary proposed amendments to the CEQA *Guidelines* regarding GHG emissions. No significance threshold is included in the draft and the guidelines afford the customary deference provided to lead agencies in their analysis and methodologies. The introductory preface to the amendments recommends 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 revisions would include a new section specifically addressing the significance of GHG emissions that would build 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 that 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*. The draft GHG provisions of the guidelines are generally similar to the draft submitted to the California Natural Resources Agency by OPR in April. On October 23, 2009, OPR issued revisions to the Guidelines, which stated that a project would have a significant cumulative impact on GHG if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
2. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

As noted, under SB 97, final language for the CEQA *Guidelines* is to be adopted by January 1, 2010.

The second part of SB 97 codifies safe harbor for highways and flood control projects. It provides that the failure of a CEQA document for a project funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 or the Disaster Preparedness and Flood Prevention Bond Act of 2006 to adequately analyze the effects of GHG emissions otherwise required to be reduced pursuant to the regulations adopted under the Global Warming Solutions Act (which are not slated for adoption until January 1, 2012), does not create a cause of action for a violation of CEQA. This portion of SB 97 has a sunset date of January 1, 2010.

The bill does not address the obligation to analyze GHGs in projects not protected by the safe harbor provision. One possible interpretation is that there is no duty until the guidelines are adopted, because CEQA *Guidelines,* Section 15007, Subdivision (b) provides that guideline amendments apply prospectively only.

California Senate Bill 375 (SB 375)

Governor Schwarzenegger signed SB 375 into law in September 2008 (Chapter 728, Statutes of 2008). This legislation aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) that will prescribe land use allocation in the MPO's regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects will not be eligible for funding programmed after January 1, 2012.

California Urban Water Management Act

The California Urban Water Management Planning Act requires various water purveyors throughout the State of California (such as EBMUD) to prepare Urban Water Management Plans (UWMPs), which assess the purveyor's water supplies and demands over a 20-year horizon (California Water Code, Section 10631 *et seq*.). As required by that statute, UWMPs are updated by the purveyors every five years. As discussed above, this is relevant to global climate changes which may affect future water supplies in California as conditions may become drier or wetter, thereby affecting reservoir inflows and storage and increased river flows.[4]

[4] Brekke, 2004, op. cit.

Bay Area Air Quality Management District

In December 2009, BAAQMD issued a revised draft update to its CEQA Air Quality Guidelines, as part of a planned update of BAAQMD's CEQA *Guidelines*, which were last updated in 1999. The December 2009 report proposes a significant GHG emission threshold of 1,100 MT/year of CO_2 equivalents for land use projects. The existing BAAQMD CEQA *Guidelines* contain no thresholds of significance for GHGs.

City of Oakland Local Plan and Policies Relevant to GHG Emissions and Climate Change

City of Oakland General Plan

The City of Oakland's General Plan includes local plans and policies relevant to GHG emissions and Global Climate Change through its Land Use and Transportation, Open Space, Conservation and Recreation, Historic Preservation, and Safety elements. Following are a list of those policies.

Land Use and Transportation Element (LUTE). The LUTE (which includes the Pedestrian Master Plan and Bicycle Master Plan) of the Oakland General Plan contains the following policies that address issues related to GHG Emissions and Climate Change ("*T*" indicates Transportation policies; "*N*" indicates Neighborhood policies):

- 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.2.1)*

- 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 T.2.2)*

- The City should include bikeways and pedestrian ways in the planning of new, reconstructed, or realigned streets, wherever possible. *(Policy T3.5)*

- 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 T3.6)*

- Through cooperation with other agencies, the City should create incentives to encourage travelers to use alternative transportation options. *(Policy T4.2)*

- 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 N3.2)*

- 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 T4.5)*

Open Space, Conservation and Recreation Element. The Open Space, Conservation and Recreation Element includes policies that address GHG reduction and global climate change. Listed below are OSCAR policies that 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; OSCAR policies that encourage stormwater management, which relates to the maintenance of floodplains and infrastructure to accommodate potential increased storms and flooding; and OSCAR policies that encourage energy efficiency and use of alternative energy sources, which directly address reducing GHG emissions. ("*CO*" indicates Conservation policies; "*OS*" indicates Open Space policies).

- Conserve existing City and Regional Parks characterized by steep slopes, large groundwater recharge areas, native plant and animal communities, extreme fire hazards, or similar conditions. *(Policy OS-1.1)*

- Manage Oakland's urban parks to protect and enhance their open space character while accommodating a wide range of outdoor recreational activities. (*Policy OS-2.1*)

- Employ a broad range of strategies, compatible with the Alameda Countywide Clean Water Program. *(Policy CO-5.3)*

- 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-12.1)*

- Expanding existing transportation systems management and transportation demand management strategies which reduce congestion, vehicle idling, and travel in single passenger autos. *(Policy CO-12.3)*

- Require that development projects be designed in a manner which reduced potential adverse air quality impacts. This may include: (a) the use of vegetation and landscaping to absorb CO 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-12.4)*

- Require new industry to use best available control technology to remove pollutants, including filtering, washing, nor electrostatic treatment of emissions. *(Policy CO-12.5)*

- Support public information campaigns, energy audits, the use of energy-saving appliances and vehicle, and other efforts which help Oakland residents, business, and City operations become more efficient. *(Policy CO-13.2)*

- Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency. *(Policy CO-13.3)*

- Accommodate the development and use of alternative energy resources, including solar energy and technologies which convert waste or industrial byproducts to energy, provided

that such activities are compatible with surrounding land uses and regional air and water quality requirements. *(Policy CO-13.4)*

Historic Preservation Element. A key Historic Preservation Element (HPE) policy relevant to climate change encourages the reuse of existing building (and building materials) resources, which could reduce landfill material (a source of methane, a GHG), avoid the incineration of materials (which produces CO_2 as a by-product), avoid the need to transport materials to disposal sites (which produces GHG emissions), and eliminate the need for materials to be replaced by new product (which often requires the use of fossil fuels to obtain raw and manufacture new material) (USEPA, 2007a).

- Property relocation rather than demolition as part of discretionary permits – 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. *(HPE Policy 3.7)*

Safety Element. Safety Element policies that address wildfire hazards relate to climate change in that increased temperatures could increase fire risk in areas that become drier due to climate change. Also, wildfire results in the loss of vegetation; carbon is stored in vegetation, and when the vegetation burns, the carbon returns to the atmosphere. The occurrence of wildfire also emits particulate matter into the atmosphere. Safety Element policies regarding storm-induced flooding hazards related to the potential to accommodate increases in storms and flooding due to climate change.

- Prioritize the reduction of the wildfire hazard, with an emphasis on prevention. *(Policy FI-3)*

- Enforce and update local ordinances and comply with regional orders that would reduce the risk of storm-induced flooding. *(Policy FL-1)*

- Continue or strengthen city programs that seek to minimize storm-induced flooding. *(Policy FL-2)*

City of Oakland Sustainability Programs

Oakland's sustainability efforts are managed by the Oakland Sustainability Community Development Initiative (SDI), created in 1998 (Ordinance 74678 C.M.S.). Efforts are organized into the following six major categories: Energy; Urban Design; Transportation; Waste Reduction; Water; and Environmental Health. Initiatives relevant to climate change and global warming are summarized below (City of Oakland, 2007):

- *Chicago Climate Exchange.* The City's Climate Protection program includes a March 2005 Council adoption of Chicago Climate Exchange Resolution (No. 79135 C.M.S.). The Chicago Climate Exchange (CCX) is a voluntary but legally binding system to reduce carbon dioxide emissions. Members agreed to reduce their emissions one percent per year from 2003-2006 below their baseline average. If the one percent reduction is not met, the City would be required to purchase GHG allowances from others in the Exchange; if the City exceeded this reduction, the additional earned GHG-emission allowances could then be sold on the Exchange. Oakland met its obligated one percent reduction target for the

period 2003–2004, but in 2004–2005 and 2005–2006 the City's emissions increased and the target was not met.

- *Community Choice Aggregation*. Oakland has funded a Phase I feasibility study and a Phase II Implementation Plan to become a community choice aggregator, which would allow the City to purchase electricity on behalf of their residential and commercial constituents. Potential benefits of becoming an aggregator include increased use of renewable energy sources to meet Oakland's energy needs and a reduction in electricity costs.

- *Energy Efficiency Participation*. The City of Oakland has promoted energy efficiency with the following programs: Community Youth Energy Services (CYES), which hires and trains local youth to provide free in-home energy audits, education, and hardware installation to low-income residents; CA-Leadership in Energy Efficiency Program (CA-LEEP), a CPUC-funded program that will help Oakland develop the energy efficiency component of the City's overall Sustainability Plan, positioning the City for funding from state and federal sources; the LED Christmas Light Project, a PG&E co-sponsored holiday light exchange, promoting energy efficiency and public outreach; and Savings by Design Lead Incentive Pilot, in which the Pacific Gas and Electric Company (PG&E) and the City of Oakland collaborate to foster energy efficient building designs in new commercial and mixed-use construction and major renovation projects.

- *Renewable Energy*. The City's Sustainability Program has established the promotion of renewable energy with a particular emphasis on solar as a priority. Aggressive renewable energy goals have been established, including: 50 percent of the city's entire electricity use from renewable sources by 2017; and 100 percent of the city's entire electricity use from renewable sources by 2030.

- *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; 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.

- *Green Economy, Business and Jobs / Green Business*. The Alameda County Green Business Program offers technical assistance and incentives to businesses and agencies wishing to go beyond basic regulatory requirements.

- *Socially Responsible Business Checklists.* The Socially Responsible Business Task Force created a checklist designed to measure the relative level of social and environmental responsibility of firms nominated to receive major financial assistance from the City.

- *Downtown Housing*. The 10K Downtown Housing Initiative is a City initiative with the goal of attracting 10,000 new residents to downtown Oakland by encouraging the development of 6,000 market-rate housing units. This effort is consistent with Smart Growth principles.

- *Clean Vehicles*. In 2003, a "Green Fleet" Resolution established "Green Fleet" policies and procedures to reduce GHG emissions and improve air quality in the City of Oakland, and to increase the energy efficiency of the city's fleet.

- *Port of Oakland Truck Replacement*. Under the Truck Replacement Project, the Port provides a qualifying truck owner up to $40,000 to replace the on-road heavy-duty diesel truck, which serves the Port's Maritime Area, with a 1999 or newer model year truck. The Port will provide up to $2 million in total funding to replace approximately 80 trucks.

- *Waste Reduction and Recycling*. The City of Oakland has implemented the following changes:

  - *Residential Recycling*, in which yard trimmings and food waste collections were increased, with total yard trimming increases of 46 percent compared to 2004, and recycling tonnage increased by 37 percent;
  - *Business Recycling*, in which the City provides free technical assistance to Oakland businesses to start or expand their recycling programs and which includes the Stop Waste Partnership program which improves environmental performance for businesses and agencies; and
  - *Construction and Demolition Recycling*, 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 February 19, 2003, 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.

- *Watershed Improvement*. The City of Oakland, by implementing the Watershed Improvement Program has made environmental protection of creeks a priority. The City of Oakland, along with the other cities in the county, is a member of the Alameda Countywide Clean Water Program (ACCWP). ACCWP acts to limit stormwater runoff pollution and to keep creeks and San Francisco Bay healthy.

- *Healthy Food Systems*. The Mayor's office, working with graduate students from the University of California, developed a resolution authorizing an initial food systems assessment study. The study, authorized by the City Council on January 17, 2006 through Resolution No. 79680 C.M.S., examines current trends in Oakland's food system and recommends programs and policies that promote a sustainable food system for Oakland. One of the goals of the Healthy Food Systems program is the utilization and support of local agricultural as a potential means to reducing truck miles necessary to distribute food locally, which contributes to GHG emissions.

- *Community Gardens and Farmer's Markets*. Community Garden locations include Arroyo Viejo, Bella Vista, Bushrod Park, Golden Gate, Lakeside Horticultural Center, Marston Campbell Park, Temescal, and Verdese Carter. Weekly Farmer's Markets at the Jack London Square, and in the Old Oakland, Grand Lake, Mandela, and Temescal districts. Both efforts promote and facilitate the principal of growing and purchasing locally, which effects reductions in truck and vehicle use and GHG emissions.

Physical Setting for GHG Emissions and Climate Change

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 (USEPA, 2000), in much the same way as glass in a greenhouse. While many studies show evidence of warming over the last century and predict future global warming, the causes of such warming and its potential effects are far less certain.[5] In its "natural" condition, the greenhouse effect is responsible for maintaining a habitable climate on Earth, but human activity has caused increased concentrations of these gases in the atmosphere, thereby contributing to an increase in global temperatures.

USEPA has recently concluded that scientists know *with virtual certainty*, that:

- "Human activities are changing the composition of Earth's atmosphere. Increasing levels of GHGs like CO_2 in the atmosphere since pre-industrial times are well-documented and understood.

- The atmospheric buildup of CO_2 and other GHGs is largely the result of human activities such as the burning of fossil fuels.

5 "Global climate change" is a broader term used to describe any worldwide, long-term change in the earth's climate. "Global warming" is more specific and refers to a general increase in temperatures across the earth, although it can cause other climatic changes, such as a shift in the frequency and intensity of weather events and even cooler temperatures even though the world, on average, is warmer.

- A warming trend of approximately 0.7 to 1.5°F occurred during the 20th century. Warming occurred in both the northern and southern hemispheres, and over the oceans.

- The major GHGs emitted by human activities remain in the atmosphere for periods ranging from decades to centuries. It is therefore virtually certain that atmospheric concentrations of GHGs will continue to rise over the next few decades.

- Increasing GHG concentrations tend to warm the planet."(USEPA, 2000).

At the same time, there is much uncertainty concerning the magnitude and rate of the warming. Specifically, the USEPA notes that "important scientific questions remain about how much warming will occur; how fast it will occur; and how the warming will affect the rest of the climate system, including precipitation patterns and storms. Answering these questions will require advances in scientific knowledge in a number of areas:

- Improving understanding of natural climatic variations, changes in the sun's energy, land-use changes, the warming or cooling effects of pollutant aerosols, and the impacts of changing humidity, and cloud cover.

- Determining the relative contribution to climate change of human activities and natural causes.

- Projecting future greenhouse emissions and how the climate system will respond within a narrow range.

- Improving understanding of the potential for rapid or abrupt climate change." (USEPA, 2000).

Greenhouse Gases

Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and water vapor (H_2O) are the principal GHGs, and when concentrations of these gases exceed the natural concentrations in the atmosphere, the greenhouse effect may be enhanced. Without these GHGs, Earth's temperature would be too cold for life to exist. CO_2, CH_4, and N_2O occur naturally as well as through human activity. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely byproducts of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills. Man-made GHGs – with much greater heat-absorption potential than CO_2 – include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6), which are byproducts of certain industrial processes.

Potential Effects of Human Activity on GHG Emissions

As mentioned above, the primary GHG generated by human activity is CO_2. Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions (and thus substantial increases in atmospheric concentrations). In 1994, atmospheric CO_2 concentrations were found to have increased by nearly 30 percent above pre-industrial (circa 1860) concentrations.

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) [6], 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).

Global Emissions

Worldwide emissions of GHGs in 2004 were 30 billion tons of CO_2e per year (UNFCCC, 2007) (including both ongoing emissions from industrial and agricultural sources, but excluding emissions from land-use changes).

U.S. Emissions

In 2004, the United States emitted about 8 billion tons of CO_2e or about 25 tons/year/person. Of the four major sectors nationwide —residential, commercial, industrial and transportation — transportation accounts for the highest fraction of GHG emissions (approximately 35 to 40 percent); these emissions are entirely generated from direct fossil fuel combustion (USEPA, 2007b).

State of California Emissions

In 2004, California emitted approximately 550 million tons of CO_2e, or about 6 percent of U.S. emissions. This large number is due primarily to the sheer size of California compared to other states. By contrast, California has one of 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 (CEC, 2007). Another factor that has reduced California's fuel use and GHG emissions is its mild climate as compared to that of many other states.

The CalEPA Climate Action Team reported in its March 2006 report that California's emissions were as follows:

- CO_2 accounted for 83.3 percent;
- CH_4 accounted for 6.4 percent;
- N_2O accounted for 6.8 percent; and
- Fluorinated gases (HFCs, PFC, and SF_6) accounted for 3.5 percent (CalEPA, 2006).

The CEC found that transportation is the source of approximately 38 percent of the state's GHG emissions, followed by electricity generation (both in-state and out-of-state) at 23 percent, and industrial sources at 13 percent. Agriculture and forestry are the source of approximately 8.3 percent of the state's GHG emissions, as a the source categorized as "other," which includes residential and commercial activities (CEC, 2007).

[6] The potential of a gas or aerosol to trap heat in the atmosphere.

Bay Area Emissions

In the Bay Area, fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the greatest source of the Bay Area's GHG emissions, accounting for approximately 40.6 percent of the Bay Area's 102.6 million metric tons of GHG emissions in 2007. Industrial and commercial sources were the second largest contributors of GHG emissions with about 34 percent of total emissions. The other contributors in descending order include electricity and co-generation (14.8 percent), residential fuel usage (6.6 percent), off-road equipment (2.8 percent), and agriculture and farming (1.1 percent) (BAAQMD, 2008b).

City of Oakland Emissions

Oakland, in partnership with the Local Governments for Sustainability (ICLEI), has prepared the *Baseline Greenhouse Gas Emissions Inventory Report* to determine the community-wide levels of GHG emissions that the City of Oakland emits in its base year, 2005 (ICLEI, 2006). The community-wide levels reflect all the energy used and waste produced within the Oakland city limits. As shown in **Table 4.1-7**, Oakland emitted approximately 2.4 million tons of CO_2e in 2005 from all major sources, nearly half of which were from transportation. The analysis shows that the City's emissions increased by approximately 5 percent to 6 percent in each year since 2003.

TABLE 4.1-7
OAKLAND COMMUNITY-WIDE GHG EMISSIONS SUMMARY – 2005

Potential Source	Tons of Carbon Dioxide Equivalent (CO_2e)	Percent of Total
Transportation	1,138,767	47%
Commercial/Industrial	709,199	29%
Residential	580,710	24%
TOTAL	**2,428,676**	**100**

SOURCE: ICLEI, 2006.

The inventory report also estimated emissions from municipal government activities, which constitute approximately 1.5 percent of total community-wide emissions.

The report also forecasts future community-wide emissions for 2010 and 2020. From 2005, emissions are forecasted to increase by 12 percent by 2010 (to 2.5 million tons of CO_2e), and 19.5 percent (to 2.7 million tons CO_2e) by 2020, assuming continued GHG emissions at or above current rates into the future.

Construction and Development Emissions

The construction and occupation of residential developments, such as the proposed project, cause GHG emissions. GHG emissions occur in connection with many activities associated with development, including use of construction equipment and building materials, vegetation

clearing, natural gas usage, electrical usage (since electricity generation by conventional means is a major contributor of GHG emissions, discussed below), water use (which in California is heavily reliant on electricity), 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 even 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.

Potential Effects of Human Activity on Climate Change

Global Change

Globally, climate change has the potential to impact numerous environmental resources through potential, 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 could be taking place, including substantial ice loss in the Arctic (IPCC, 2007).

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 by the International Panel on Climate Change (IPCC), namely "Climate Change 2001, The Scientific Basis"(IPCC, 2001).[7]

The IPCC devised a set of six "emission scenarios" which mix and match various assumptions about the rates of economic development, population growth, and technological advancement over the course of the next century (IPCC, 2000). These scenarios acknowledge 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 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

[7] 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.

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 (IPCC, 2007):

- 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.
- 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 the sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

State of California and Climate Change

According to 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 high ozone days, more large forest fires, and more drought years (CARB, 2006). Several recent studies have attempted to explore the possible negative consequences that climate change, if 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 coarse a scale to make accurate regional assessments (Kiparsky, 2003).

Below is a summary of some of the potential effects reported by 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 (USEPA, 2006). 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 (CCCC, 2006).

- *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 (Brekke, 2004).

  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 Delta. Although the report projects that "[c]limate change will likely have a significant effect on California's future water resources . . . [and] future water demand," it also reports that "much uncertainty about future water demand [remains], especially [for] 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" (DWR, 2006). DWR adds that "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future" (DWR, 2006). 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 (Kiparsky, 2003; Cayan, 2006).

  Water purveyors are required by state law to prepare Urban Water Management Plans (UWMPs) that consider climatic variations and corresponding impacts on long-term water supplies (California Water Code, Section 10631(c)). For those purveyors who receive water from SWP, DWR has published a 2005 SWP Delivery Reliability Report, which presents information from computer simulations of SWP operations based on historical data over a 73-year period (1922–1994). DWR has confirmed that the results of those model studies "represent the best available assessment of the delivery capability of the SWP." In addition, DWR is continuing to update its studies and analysis of water supplies. Water purveyors incorporate this information from DWR in their continuing updates of UWMPs, and information from individual UWMPs can be incorporated into Water Supply Assessments (WSAs) and Water Verifications prepared for certain development projects in accordance with California Water Code Section 10910, et seq. and California Government Code Section 66473.7, et seq.

- *Hydrology* – As discussed above, climate changes could potentially affect 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 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 edge 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.

- *Agriculture* – California has a $30 billion agricultural industry that produces half the country's fruits and vegetables. The California Climate Change Center (CCCC) notes that higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thus affect their quality (CCCC, 2006).

- *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. (Parmesan, 2004) 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.

4.1.4 Impacts and Mitigation Measures for GHG Emissions

GHG Emissions Significance Criteria

As identified in Section 15064(a) of the CEQA Guidelines, "determining whether a project may have a significant effect plays a critical role in the CEQA process." In addition, as outlined in Sections 15064(h) and 15130 of the CEQA Guidelines, an EIR is required to evaluate cumulative impacts when they can be determined to be "cumulatively considerable." However, the CEQA Guidelines and the CEQA Initial Study Checklist do not contain any provisions that specifically set forth requirements for analysis of global climate change impacts in an EIR. As stated in Section 15064(b) of the State CEQA Guidelines, "The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data." Additionally, CEQA Guidelines Section 15145 states, "If, after thorough investigation, a Lead Agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact."

However, as previously discussed, OPR drafted proposed amendments to the CEQA Guidelines that are awaiting adoption by the Secretary for Natural Resources, and based on those Draft amendments, in the City of Oakland the proposed project would be considered to have a significant cumulative impact regarding GHG emissions if it would:

1. Exceed adopted numeric thresholds of an appropriate regulatory agency that, either directly or indirectly, that may have a significant impact on the environment; or

2. Conflict with any applicable plan, policy or regulation of an appropriate regulatory agency adopted for the purpose of reducing greenhouse gas emissions.

The December 2009 BAAQMD *Draft Air Quality Guidelines* identify a project specific threshold of 1,100 metric tons per year as resulting in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change. These criteria are analyzed below under Impact AIR-6.

Approach to CEQA Analysis of GHG Emissions and Climate Change Impacts in this EIR

This EIR does discuss, for consideration by decision makers, estimated GHG emissions of the proposed project, project-related activities that could contribute to the generation of increased GHG emissions, the project design features that would avoid or minimize those emissions, and the approaches to further reduce those emissions.

The approach employed in this EIR is to use both a quantitative and a qualitative approach. The quantitative approach is used to answer the first of the OPR proposed revisions to the CEQA Guidelines identified above (i.e., will the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment). The quantifiable threshold to be used is the 1,100 metric tons per year of CO_2e proposed by BAAQMD, whose jurisdiction includes the project site.

If a project does not exceed the quantifiable threshold in the first of the OPR proposed revisions, the qualitative approach addresses the second of the OPR proposed revisions to the CEQA Guidelines identified above (i.e., will the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs). Theoretically, if a project implements reduction strategies identified in AB 32, the Governor's Executive Order S-3-05, or other strategies to help toward reducing GHGs to the level proposed by the governor and targeted by the City of Oakland, it could reasonably follow that the project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Alternatively, a project could reduce a potential cumulative contribution to GHG emissions through energy efficiency features, density and locale (e.g., compact development near transit and activity nodes of work or shopping) and by contributing to available mitigation programs, such as reforestation, tree planting, or carbon trading.

However, the analysis in this EIR considers that, because the quantifiable threshold established in the Draft BAAQMD Guidelines was formulated based on AB 32 reduction strategies, a project cannot exceed the numeric threshold and fully comply with the second of the OPR proposed revisions and not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs. Therefore, if the proposed project does not meet the first threshold and therefore results in a significant cumulative impact because it exceeds the numeric threshold, the project would also result in a significant cumulative impact under the second

threshold, even though the project may incorporate measures and have features that would reduce its contribution to cumulative GHG emissions.

Since the project site is located in an area that would not be subject to coastal or other flooding resulting from climate change, the potential effects of climate change on the proposed project are not discussed in this EIR.

GHG Emissions Impacts and Mitigation Measures Discussion

Impact AIR-6: Construction and operation of the project would not result in a cumulatively considerable increase in greenhouse gas emissions. (Significant if proposed BAAQMD Thresholds are adopted)

As also previously discussed, the construction and operation of the proposed residential project would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during operation. Typically, more than 80 percent of the total energy consumption takes place during the use of buildings and less than 20 percent is consumed during construction (UNEP, 2007).

Overall, the following activities associated with a typical residential development could contribute to the generation of GHG emissions:

- *Removal of Vegetation* – The net removal of vegetation for construction results in a loss of the carbon sequestration in plants. Alternately, planting of additional vegetation would result in additional carbon sequestration and lower the carbon footprint of the project.

- *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.

- *Gas, Electric and Water Use* – Gas use results in the emissions of two GHGs: methane (the major component of natural gas) and carbon dioxide from the combustion of natural gas. Methane is released prior to initiation of combustion of 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. California's water conveyance system is energy intensive. Preliminary estimates indicate that total energy used to pump and treat this water exceeds 15,000 GWh per year, or at least 6.5 percent of the total electricity used in the state per year (CEC, 2004).

- *Motor Vehicle Use* – Transportation associated with the proposed project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips. However, these emissions would not be "new" since drivers are likely relocated from another area.

While the proposed project and all developments of similar land use would generate GHG emissions as described above, the City of Oakland's ongoing implementation of its Sustainability Community Development Initiative (which includes an array of programs and measures, discussed previously under *Regulatory Context for GHG Emissions and Climate Change*) will collectively reduce the levels of GHG emissions and contributions to global climate change attributable to activities throughout Oakland.

Estimated GHG Emissions from the Proposed Project

In light of the considerations outlined above, the following estimate of the proposed project's emissions is provided to allow a comparison with the City's baseline (approximately 2.4 million tons of CO_2e in 2005 (see Table 4.1-7), and to compare to the BAAQMD draft threshold of 1,100 MT/year of CO_2 equivalents.

Project GHG emissions during construction for a worse-case year (2011) would be approximately 405 metric tons CO_2e. These construction emissions represent approximately 0.017 percent of the City's baseline GHGs emitted in 2005. In regards to project operations, GHG emissions would result from increases in motor vehicle trips resulting from the proposed project, as well as from area sources (such as natural gas combustion), indirect electricity production (including electricity required for water and wastewater conveyance), and solid waste generation by future occupants of proposed residences**. Table 4.1-8** presents the GHG emissions that would result from proposed project operations.

TABLE 4.1-8
ESTIMATED EMISSIONS OF GREENHOUSE GASES FROM PROPOSED PROJECT OPERATIONS AND CITYWIDE

	Emissions (metric tons CO_2e per year)			
Emission Source	**CO_2**	**CH_4**	**N_2O**	**Total CO_2e**
Motor Vehicle Trips	1,552	5	97	1,654
Area Sources (i.e., Space Heating, Landscape maintenance, etc)	463	22	3	488
Indirect Electricity Generation	554	<1	1	556
Solid Waste Generation	---	344	---	344
Total Operational GHG Emissions from Project	2,569	372	101	**3,042**
BAAQMD Proposed GHG Threshold				*1,100*
Total Citywide 2005 GHG Emissions				*2.4 million*
Project percentage of Total Citywide 2005 GHG Emissions				*0.13 %*

SOURCE: ESA, 2009

GHG emissions associated with the proposed project were calculated using CARB's URBEMIS 2007 Version 9.2.4 model and trip generation data from the project traffic analysis.[8] Because URBEMIS 2007 only estimates CO_2, scaling factors derived from the State of California Inventory of GHG Emissions were used to determine the relative emissions of methane (CH_4) and nitrous oxide (N_20) in order to generate emissions of GHG as carbon dioxide equivalents (CO_2e).

The URBEMIS2007 model also estimates CO_2 emissions from natural gas combustion for space and water heating and fuel combustion for landscape maintenance, based on land use size (number of dwelling units). Again, the appropriate scaling factors from the State GHG Inventory were used to determine the relative amounts of NH_4 and N_2O emitted from residential fuel combustion. Emissions of GHG from solid waste generation associated with the project were determined using an emission factor from USEPA.

CO_2 emissions represent more than 80 percent of the project's contribution of GHG emissions. There are no federal, state, or local emissions thresholds established for GHGs such as CO_2. However, the BAAQMD has proposed a GHG operational emission threshold of 1,100 MT/year of CO_2 equivalents, which the project would exceed. As a comparison, the entire state generated approximately 2.2 billion (2,197,992,329) lbs/day of CO_2 in 2004. The estimate provides an indication of the order of magnitude of potential project emissions compared to estimated statewide emissions. GHG emissions from the proposed project could vary based on several factors, such as the size of the project, the type and extent of energy efficiency measures that might be incorporated into each design of the project buildings, and the type and size of appliances installed in the project buildings. This level of detail is not yet known for the project. In addition, the estimated CO_2 emissions from vehicle trips associated with the project are likely much greater than what would actually occur. Although the future CO_2 emission levels reflect reductions resulting from the increased efficiency of future vehicle models, it does not take into account reductions in vehicle emissions that may occur with implementation of AB 1493 (discussed above under *Regulatory Context for GHG Emissions and Climate Change*).

Further, the methodology applied here assumes that all emission sources linked to the project would be new sources that would combine with existing conditions. For this assessment, it is not possible to predict whether emission sources (residents) associated with the project would move from outside the air basin (and thus generate "new" emissions within the air basin), or whether they are sources that already exist and are merely relocated within the air basin. Because the effects of GHGs are global, if the project merely shifts the location of the GHG-emitting activities (locations of residences and businesses and where people drive), there would not be a net new increase of emissions. It also cannot be determined until buildout of the project whether residents of the proposed development would, as a result of moving to the project, have shorter commute distances, require fewer vehicle trips, walk, bike, or use public transit more often, instead of driving, or overall use less energy by virtue of the project's characteristics. If these types of changes occur, overall vehicle miles traveled could be reduced and it may be that in reality the project would result in a potential net reduction in GHG emissions, locally and globally.

[8] Consistent with the trip generation estimated for the traffic analysis in this EIR, no credit is taken for emissions (i.e., trips) from the existing parking lot. Thus, the estimated emissions can be considered conservative.

Conclusion

Since the project would generate GHG emissions that would exceed the BAAQMD draft thresholds, it would be considered significant without mitigation if these thresholds are adopted. The following design features and mitigation measures have been included in the project to reduce the amount of GHG emissions generated during construction and operation. These are provided below.

Project Design Features that Would Reduce GHGs

- *City of Oakland* – According to the Pedestrian Master Plan, the City of Oakland has the highest walking rates for all cities in the nine-county San Francisco Bay Region. It is noted that these high pedestrian trips are likely because the neighborhoods are densely populated and well-served by transit, including BART, AC Transit, Amtrak, and the Alameda Ferry. By virtue of its location in a dense urban environment close to multiple transportation modes and local businesses, the project would promote pedestrian activity and transit use. As such, the project would reduce transportation-related GHG emissions compared to emissions from the same level of development elsewhere in the outer Bay Area.

- *Energy Efficiency* – The proposed project would be required to comply with all applicable local, state, and federal regulations associated with the generation of GHG emissions and energy conservation. In particular, construction of the proposed project would also be required to meet California Title 24 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 the project's contribution to regional GHG emissions. The project would also use reduced-emission or zero-emission energy alternatives, reducing energy demand through conservation or improved energy efficiencies to the greatest extent feasible.

- *Construction Waste* – The proposed project would be required to comply with the Construction and Waste Reduction Ordinance and submit a Construction and Demolition Waster Reduction Plan for review and approval. As a result, construction-related truck traffic, which primarily includes diesel fueled engines, would be reduced since demolition debris hauled off site would be reused on site. In addition, reuse of concrete, asphalt, and other debris would reduce the amount of material introduced to area landfills.

- *Urban Infill Location* – The project would be a Transit Oriented Development (TOD), developing high-density housing in a central area of Oakland. As such, the project would reduce transportation-related GHG emissions compared to emissions from the same amount of population and employment growth elsewhere in the outer Bay Area. Because transit service is generally less available in most areas of the outlying areas than in the central area of Oakland (and in particular at the project site near BART and multiple transit services), development in those locations would likely result in increased peak-hour vehicle trips of relatively long distances, and often in single-occupant vehicles, compared to development at the project site.

- *Proximity to Multiple Transit Modes* – The project would develop high-density housing within several blocks of BART and International Boulevard, a primary transit corridor, and within an area developed with pedestrian facilities and proposed enhancements to bicycle facilities. Therefore, the project would facilitate walking and other non-vehicular travel more viably than would be the case for similar population and employment growth in outlying areas away from transit. In addition, high-density development would include a

greater number of potential residents that could potentially utilize or engage in alternative modes of travel than in a lower density development on the project site.

- *Building and Site Design* – The project applicant will work with the City to develop specific sustainable building and site design, construction, and operational methods and standards that could be incorporated with the project. These include specific sustainable construction and operational and standards that would be appropriate for the project and that support goals to increase energy efficiency. The project applicant, in collaboration with the City, will incorporate methods to the greatest extent feasible, as outlined in existing programs, such as the *GreenPoint* Rated (a program of Build It Green, sponsored by a number of Bay Area public agencies and jurisdictions) or LEED standards (Leadership in Energy and Environmental Design Green Building Rating System™, the nationally accepted benchmark for the design, construction, and operation of high performance green buildings). These include

  - Use of exceptionally durable and/or reused materials;
  - Materials that avoid toxic emissions;
  - Equipment and fixtures that conserve energy;
  - Maximizing efficient and natural lighting and ventilation; and
  - Maximizing on-site landscaping, including above-grade.

Mitigation Measures

Mitigation Measure AIR-6: The applicant shall be required to develop a GHG Reduction Plan for City review and approval, which shall reduce GHG emissions to the maximum extent feasible. Items in this plan may include:

- Free transit passes for all residents;
- Electrically powered landscape equipment;
- Plant shade trees within 40 feet of the south side or within 60 feet of the west side of the property;
- Require cool roof materials (albedo >= 30);
- Require smart meters and programmable thermostats;
- Install solar water heaters;
- Install solar panels on residential buildings; and
- HVAC duct sealing.

Significance after Implementation of Project Design Features and Mitigation Measures

In addition to the project design features and mitigation measures described above, emissions would also be reduced because the project would be subject to all the regulatory requirements, mitigation measures, and Standard Conditions of Approval in this EIR that would reduce GHG emissions of the project. These include, for example, Standard Conditions of Approval for transportation management to address cumulative air quality impacts, adherence to best management construction practices and equipment use, and maximizing standards regulating post

construction storm-water. Although these criteria would reduce GHG emissions, the project would still result in a significant impact after mitigation. As shown in Table 4.1-8, GHG emissions from mobile sources alone, which already account for trip reduction assumptions based on walking, bicycling, and transit use, would exceed the BAAQMD draft threshold for GHGs. This cumulative impact would be significant and unavoidable if the draft BAAQMD threshold is adopted.

Significance after Implementation of Project Design Features and Mitigation Measures: Significant and Unavoidable if the draft BAAQMD Threshold is adopted.

Impact AIR-7: The project would conflict with an applicable plan, policy or regulation of an appropriate regulatory agency adopted for the purpose of reducing greenhouse gas emissions. (Significant if proposed BAAQMD Thresholds are adopted)

There are many project characteristics, location and design features that help implement reduction strategies identified in AB 32, and the Governor's EO S-3-05 have been included in the project and would reduce the amount of GHG emissions generated during construction and operation. These are discussed under Impact AIR-6, above.

An Oakland Energy and Climate Action Plan (ECAP) is being developed to identify, evaluate and recommend prioritized actions to reduce energy consumption and GHG emissions in Oakland. The ECAP will identify energy and climate goals, clarify policy direction, and identify priority actions for reducing energy use and GHG emissions. On July 7, 2009, the Oakland City Council directed staff to develop the draft Oakland ECAP using a preliminary planning GHG reduction target equivalent to 36 percent below 2005 GHG emissions by 2020 (City of Oakland, 2009). Since the City has not fully developed the ECAP at this time, it is unknown if the project would conflict with policies and actions that may be included. However, the project does not appear to conflict with the current City Sustainability Programs or General Plan policies regarding GHG reductions.

The project's GHG emissions generated during construction and operation would be minimized by virtue of the project design features, including it being a TOD, consistent with the aforementioned Smart Growth concepts, Oakland General Plan policies relevant to GHG emissions and Climate Change, as previously discussed. In addition, the project is subject to all the regulatory requirements including the City's Standard Conditions of Approval, which would reduce GHG emissions of the project. These include conditions to address adherence to best management construction practices and equipment use (see City's Dust Control and Construction Emissions Standard Conditions of Approval AIR-1 and AIR-2) and to minimize post construction stormwater runoff that could affect the ability to accommodate potentially increased storms and flooding within existing floodplains and infrastructure systems. Overall, the project would entail implementing reduction strategies identified in AB 32, the Governor's EO S-3-05, and other strategies to help reduce GHGs to the level proposed by the governor and targeted by the City of Oakland.

As discussed previously in this section, because the proposed project would exceed the numeric threshold of 1,100 CO_2e per year (Impact AIR-6), it is also considered to impair attainment of GHG reduction goals by levels proposed by the governor and targeted by the City of Oakland. The cumulative impact would be significant and unavoidable. Standard Conditions AIR-1 and AIR-2 shall apply. In addition the following mitigation shall apply:

Mitigation Measure AIR-7: Implement Mitigation Measure AIR-6.

Significance after Mitigation: Significant and Unavoidable.

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4.2 Noise

This section addresses noise impacts associated with the proposed project. It analyzes potential noise impacts caused both during the construction and operational phases of the proposed project on the ambient noise environment. It also analyzes the compatibility of the proposed noise-sensitive uses such as residences with the existing noise environment. Background information on environmental acoustics, including definitions of terms commonly used in noise analysis, is provided below. This section identifies any potentially significant noise impacts and, if necessary, appropriate mitigation measures or standard conditions of approval. Pursuant to the City's amendment to the Oakland General Plan (City of Oakland, 2005), as well as Section 15358(b) of the CEQA Guidelines, mitigation measures are proposed only to address physical impacts that may result from the project.

4.2.1 Environmental Setting

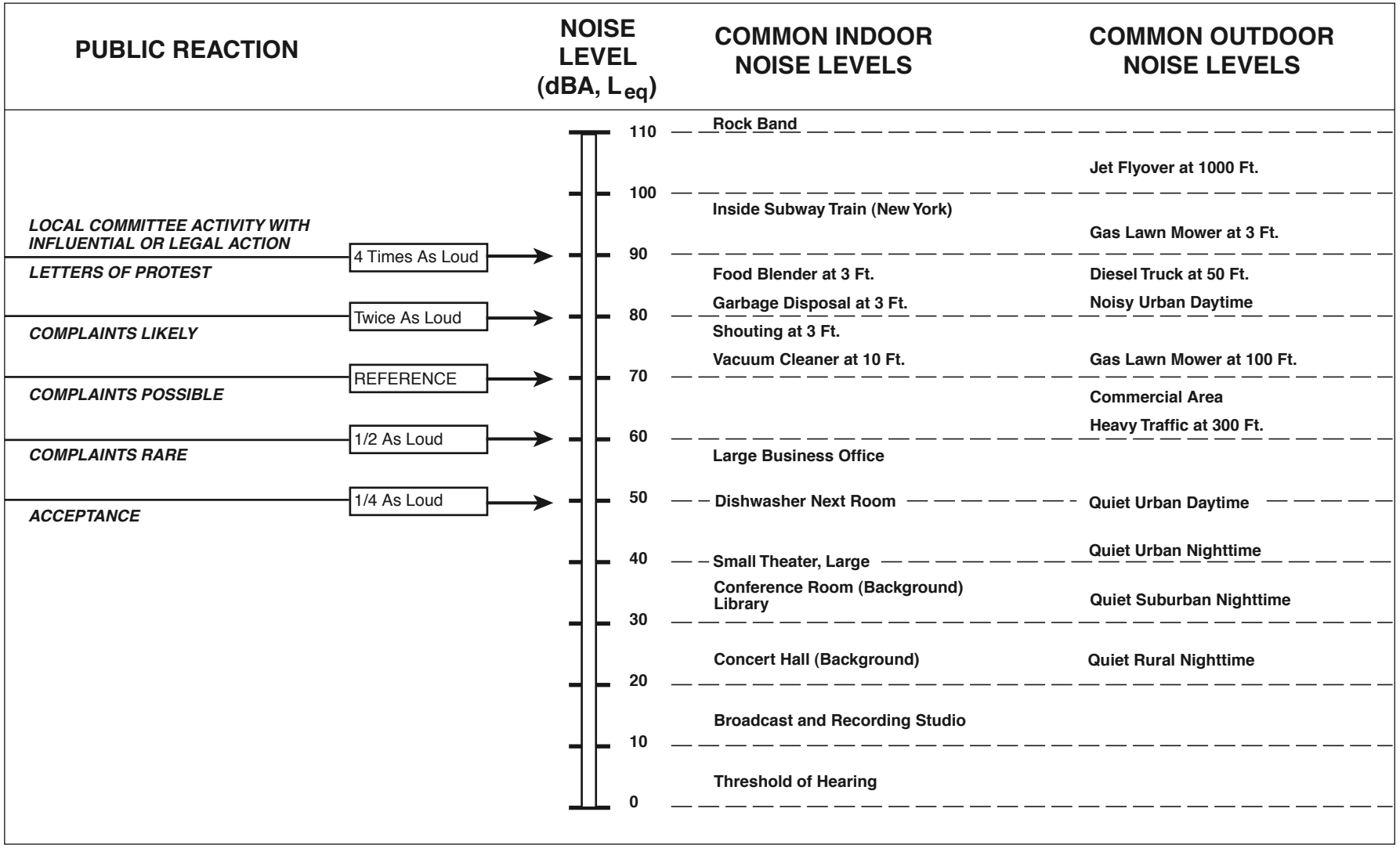
Technical Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).[1] Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements. Some representative noise sources and their corresponding A-weighted noise levels are shown in **Figure 4.2-1**.

[1] All noise levels reported herein reflect A-weighted decibels unless otherwise stated.



SOURCE: ESA, 2009

Figure 4.2-1
Effect of Noise on People

Noise Exposure and Community Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. However, noise levels rarely persist consistently over a long period of time. Rather, community noise varies continuously with time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. What makes community noise constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment varies the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

Leq: The equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The Leq is the constant sound level, which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

Lmax: The instantaneous maximum noise level measured during the measurement period of interest.

Lmin: The instantaneous minimum noise level measured during the measurement period of interest.

Lx: The sound level that is equaled or exceeded x percent of a specified time period. L50 represents the median sound level.

DNL: Also termed the Ldn, the DNL is the energy average of the A-weighted sound levels occurring during a 24-hour period, and which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 PM and 7:00 AM is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.

CNEL: Similar to the DNL, the Community Noise Equivalent Level (CNEL) adds a 5-dBA "penalty" for the evening hours between 7:00 PM and 10:00 PM in addition to a 10-dBA penalty between the hours of 10:00 PM and 7:00 AM

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- Subjective effects of annoyance, nuisance, dissatisfaction;

- Interference with activities such as speech, sleep, learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants generally experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver such as parking lots or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such at traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans, 1998).

Noise Sources and Levels

Transportation sources, such as automobiles, trucks, trains, and aircraft, are the principal sources of noise in the urban environment. Along major transportation corridors, noise levels can reach 80 DNL, while along arterial streets, noise levels typically range from 65 to 70 DNL. Industrial and commercial equipment and operations also contribute to the ambient noise environment in their vicinities.

The noise environment in the project vicinity is dominated by BART trains and by traffic on major streets, including East 12th Street. The Fruitvale BART Station is located adjacent to the project site. On a typical weekday, as many as 203 train trips take place from this station to other stations in the BART system. The frequency of freight trains on the Union Pacific Railroad (UPRR) tracks is lower and since they operate as line-haul vehicles with lower speeds in the range of 20 to 25 miles per hour (mph), the associated maximum noise level is also lower. A typical UPRR train traveling at 25 mph may produce noise levels that exceed 95 dBA at 100 feet, while noise from train horns may approach 110 dBA (Illingworth & Rodkin, 2004). Brakes, coupling impacts, and crossing guard warnings are additional common sources of noise along a railroad corridor. BART trains achieve a maximum speed of 80 mph, and travel at an average of 33 mph between stations. A typical BART train produces 85 dBA noise level at a distance of 100 feet from the tracks (Illingworth & Rodkin, 2004). Noise levels are lower in the immediate vicinity of the project site, due to the slower speeds of approaching and departing BART trains at the Fruitvale Station.

To establish the environmental baseline against which to evaluate the potential effects of the project on the existing noise environment, ESA conducted noise measurements at the project site shown in **Table 4.2-1**. Two long-term (24-hour) measurements were taken on a weekday at two on-site locations (see **Figure 4.2-2**). The first measurement, LT-1, was taken along the northern boundary of the project site along East 12th Street between 36th Avenue and 37th Avenue, approximately 50 feet from the edge of the road. The second measurement, LT-2, was taken along the southern boundary of the project site adjacent to the BART tracks. At both locations, noise from BART and traffic on East 12th Street was a prominent component of the ambient noise environment.

TABLE 4.2-1
EXISTING NOISE ENVIRONMENTS AT PROPOSED ACTION LOCATION

Location	24 Hour CNEL	Leq (decibels)	Noise Sources
Site LT-1: 50 feet from E 12th Street	Monday 7/27/09 72	Hourly Average Leq's ranged from: 65, 69	Unattended noise measurements do not specifically identify noise sources. However, noise measurements would include traffic along E 12th Street.
Site LT-2: 50 feet from BART tracks	Monday 7/27/09 78	Hourly Average Leq's ranged from: 71, 74	Unattended noise measurements do not specifically identify noise sources. However, noise measurements would include noise associated with BART trains.

SOURCE: ESA, 2009.

SOURCE: GlobeXplorer; ESA

Fruitvale Transit Village Phase 2 . 208475

Figure 4.2-2
Noise Measurement Locations

Vibration

Ground vibration from passing trains consists of rapidly fluctuating motions or waves, which are also measured in decibels. The abbreviation "VdB" is used in this document for vibration decibels to avoid confusion with sound decibels. Construction activities, train operations, and street traffic are some of the most common external sources of vibration that can be perceptible inside residences. As vibrations travel outward from the source, they excite the particles of rock and soil through which they pass and cause them to oscillate by a few ten-thousandths to a few thousandths of an inch. Differences in subsurface geologic conditions and distance from the source of vibration will result in different vibration levels characterized by different frequencies and intensities. In all cases, vibration amplitudes will decrease with increasing distance. High frequency vibrations reduce much more rapidly than low frequencies; therefore, low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also affect the amplitude of vibration over long distances. When vibration encounters a building, a ground-to-foundation coupling loss will usually reduce the overall vibration level, however, under certain circumstances, the ground-to-foundation coupling may also amplify the vibration level due to the structural resonances of the building's floors and walls.

Human response to vibration is difficult to quantify. Vibration can be felt or heard well below the levels that produce any damage to structures. The duration of the event has an effect on human response, as does frequency. Generally, as the duration and vibration frequency increase, the potential for adverse human response increases. While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings may be perceived as the motion of building surfaces or rattling of windows, items on shelves, and pictures hanging on walls. Vibration of building components can also take the form of an audible low-frequency rumbling noise, which is referred to as ground-borne noise. Ground-borne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when the structure and the source of vibration are connected by foundations or utilities, such as sewer and water pipes. **Table 4.2-2** lists some typical levels of vibration from various vibration sources.

Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication; physiological and psychological stress; and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive. The nearest sensitive receptors to the project site are residents approximately 100 feet to the south on San Leandro Street, residences approximately 100 feet to the north across East 12th Street, and Fruitvale Transit Village Phase 1 located approximately 50 feet across 35th Avenue.

TABLE 4.2-2
TYPICAL LEVELS OF GROUNDBORNE VIBRATION

Human/Structural Response	Velocity Level (VdB)	Typical Events (50 foot setback)
Threshold, minor cosmetic damage	100	Blasting, pile driving, vibratory compaction equipment
	95	Heavy tracked vehicles (bulldozers, cranes, drill rigs)
Difficulty with tasks such as reading television subtitles or computer screen	90	
	85	Commuter rail, upper range
Residential annoyance, infrequent events	80	Rapid transit, upper range
Residential annoyance, frequent events	75	Commuter rail, typical Bus or truck over bump or on rough roads
	70	Rapid transit, typical
Approximate human threshold of perception to vibration	65	Buses, trucks and heavy street traffic
	60	
	55	Background vibration in residential settings in the absence of activity
Lower limit for equipment ultra-sensitive to vibration	50	

"Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems. "Frequent Event" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.

SOURCE: U.S. Department of Transportation, Federal Transit Administration, 2006.

4.2.2 Regulatory Setting

Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans; local noise ordinances establish standards and procedures for addressing specific noise sources and activities. Noise issues relevant to the proposed project are addressed in Title 24 of the *California Code of Regulations*, City of Oakland General Plan policies, and the Oakland Noise Ordinance standards.

Federal

Federal Transit Administration Vibration Guidelines

Transit systems, including light and heavy rail, are potential sources of substantial ground vibration depending on distance, the type and speed of trains, and the type of track. The Federal Transit Administration (FTA) of the U.S Department of Transportation has developed vibration impact assessment criteria for evaluating vibration impacts associated with rapid transit projects. The FTA vibration standards for uses proposed by the project are listed in **Table 4.2-3**.

TABLE 4.2-3
FTA GROUNDBORNE VIBRATION IMPACT CRITERIA

Land Use Category	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category I: Buildings where vibration would interfere with interior operations	65 VdB[d]	65 VdB[d]	65 VdB[d]
Category II: Residences and buildings where people normally sleep	72 VdB	75 VdB	80 VdB
Category III: Institutional land uses with primarily daytime use	75 VdB	78 VdB	83 VdB

[a] More than 70 vibration events of the same source per day.
[b] Between 30 and 70 vibration events of the same source per day.
[c] Less than 30 vibration events of the same source per day.
[d] This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research should always require detailed evaluation to define the acceptable vibration levels. Ensuring low vibration levels in a building requires special design of HVAC systems and stiffened floors.

SOURCE: U.S. Department of Transportation, Federal Transit Administration, 2006.

State of California

California Code and Regulations

State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are collectively known as the California Noise Insulation Standards and are found in *California Code of Regulations*, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor ceiling assemblies must block or absorb sound. For limiting noise from exterior sources, the noise insulation standards set forth an interior standard of DNL 45 dBA in any habitable room and, where such units are proposed in areas subject to noise levels greater than DNL 60 dBA, require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard. If the interior noise level depends upon windows being closed, the design for the structure must also specify a ventilation or air-conditioning system to provide a habitable interior environment. In Oakland, as in most jurisdictions, Title 24 standards are enforced through the building permit application, review, and inspection process.

County

Alameda County Airport Land Use Commission and the Federal Aviation Administration

The Alameda County Airport Land Use Plan (ALUP), developed by the Airport Land Use Commission of Alameda County, has adopted Noise Impact Zones for the Oakland International Airport. Noise Impact Zones are areas where exposure to aircraft noise would be above the levels

acceptable pursuant to state noise guidelines for judging the land use compatibility of a site. Noise Impact Zones ensure that new development in the vicinity of an airport would be compatible with existing and projected noise from airport operations. The project site would be located outside the 65-dBA contour for the Oakland International Airport and would therefore not be located within the Airport's Noise Impact Zone.

Local

Oakland General Plan Noise Element

The Oakland General Plan contains guidelines for determining the compatibility of various land uses with different noise environments (City of Oakland, 2005). The Noise Element recognizes that some land uses are more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. The City uses state noise guidelines for judging the compatibility between various land uses and their noise environments (City of Oakland, 2005). For multifamily residential land uses, the guidelines indicate that a noise environment of DNL 60 dBA or less is "normally acceptable," while a noise environment between DNL 60 and 70 dBA is considered "conditionally acceptable" and DNL 70 to 75 dBA is "normally unacceptable." Noise environments of DNL greater than 75 dBA are considered "clearly unacceptable" for residential uses.

In this context, "normally acceptable" is defined as satisfactory for the specific land use, assuming that normal conventional construction is used in buildings. "Conditionally acceptable" means that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh-air supply systems or air conditioning, will normally suffice. "Normally unacceptable" means that new construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

The Noise Element of the General Plan contains the following goals, which the City desires to achieve by implementing the Noise Element:

- To protect Oakland's quality of life and the physical and mental well-being of residents and others in the City by reducing the community's exposure to noise; and
- To safeguard Oakland's economic welfare by mitigating noise incompatibilities among commercial, industrial and residential land uses.

Goals form the basis for policies, which are less general than goals, and identify specific areas in which the City will direct efforts in order to attain its goals. Noise-related policies are listed below:

Policy 1: Ensure the compatibility of existing and, especially, of proposed development projects not only with neighboring land uses but also with their surrounding noise environment.

Policy 2: Protect the noise environment by controlling the generation of noise by both stationary and mobile noise sources.

Policy 3: Reduce the community's exposure to noise by minimizing the noise levels that are *received* by Oakland residents and others in the City. (This policy addresses the *reception* of noise whereas Policy 2 addresses the *generation* of noise.)

Oakland Noise Ordinance

The City of Oakland also regulates noise through enforcement of its Noise Ordinance, which is found in Section 17.120 of the Oakland Planning Code. The Noise Ordinance regulates only operational noise from stationary sources. Transportation noise is regulated at the state and federal level by noise limits placed on vehicle manufacturers. **Table 4.2-4** presents maximum allowable receiving noise standards applicable to long-term exposure for residential and civic land uses. The Noise Ordinance states that if the measured ambient noise level exceeds the applicable noise level standard in any category, then the stated applicable noise level shall be adjusted so as to equal the ambient noise level. **Table 4.2-5** presents noise level standards that apply to temporary exposure to short- and long-term construction noise. In this context, short-term refers to construction activity lasting less than 10 days, while long-term refers to construction activities lasting greater than 10 days.

City of Oakland Standard Conditions of Approval and Uniformly Applied Development Standards Imposed as Standard Conditions of Approval

The City's Standard Conditions of Approval relevant to noise are listed below for reference. If the proposed project is approved by the City, then all applicable Standard Conditions of Approval would be adopted as conditions of approval and required of the project to help ensure less-than-significant noise impacts. The Standard Conditions of Approval are incorporated and required as part of the project, so they are not listed as mitigation measures. Standard Conditions of Approval applicable to potential noise impacts due to the project include:

NOI-1: Days/Hours of Construction Operation

Ongoing throughout demolition, grading, and/or construction. The project applicant shall require construction contractors to limit standard construction activities as follows:

a) Construction activities are limited to between 7:00 AM and 7:00 PM Monday through Friday, except that pile driving and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 AM and 4:00 PM Monday through Friday.

b) Any construction activity proposed to occur outside of the standard hours of 7:00 AM to 7:00 PM Monday through Friday for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the

TABLE 4.2-4
CITY OF OAKLAND OPERATIONAL NOISE STANDARD AT RECEIVING PROPERTY LINE, dBA[a]

Receiving Land Use	Cumulative Number of Minutes in One-Hour Time Period[b]	Maximum Allowable Noise Level (dBA)	
		Daytime 7:00 AM to 10:00 PM	Nighttime 10:00 PM to 7:00 AM
Residential, School, Child Care, Health Care, or Nursing Home, and Public Open Space, or similar sensitive land use	20	60	45
	10	65	50
	5	70	55
	1	75	60
	0	80	65
		Anytime	
Commercial	20	65	
	10	70	
	5	75	
	1	80	
	0	85	
		Anytime	
Manufacturing, Mining, and Quarrying	20	70	
	10	75	
	5	80	
	1	85	
	0	90	

[a] These standards are reduced 5 dBA for simple tone noise, noise consisting primarily of speech or music, or recurring impact noise. If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.

[b] Lx represents the noise level that is exceeded X percent of a given period. Lmax is the maximum instantaneous noise level. For example, "20 minutes in an hour" is equivalent to $L_{33.3}$, which is a noise descriptor identifying the noise level exceeded one-third (33.3 percent) of the time. Likewise, "10 minutes in an hour," "5 minutes in an hour," and "1 minute in an hour" are equivalent to $L_{16.7}$, $L_{8.3}$, and $L_{1.7}$, respectively. L_{max}, or maximum noise level, represents the standard defined in terms of "0 minutes in an hour."

SOURCE: Oakland Noise Ordinance No. 11895, 1996.

TABLE 4.2-5
CITY OF OAKLAND CONSTRUCTION NOISE STANDARDS AT RECEIVING PROPERTY LINE, dBA[a]

Receiving Land Use	Maximum Allowable Noise Level (dBA)	
	Weekdays 7:00 AM to 7:00 PM	Weekends 9:00 AM to 8:00 PM
Short-Term Operation (less than 10 days)		
Residential	80	65
Commercial, Industrial	85	70
Long-Term Operation (more than 10 days)		
Residential	65	55
Commercial, Industrial	70	60

[a] If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.

SOURCE: Oakland Noise Ordinance No. 11895, 1996.

overall duration of construction is shortened and such construction activities shall only be allowed with the prior written authorization of the Building Services Division.

c) Construction activity shall not occur on Saturdays, with the following possible exceptions:

   i. Prior to the building being enclosed, requests for Saturday construction for special activities (such as concrete pouring which may require more continuous amounts of time), shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened. Such construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division.

   ii. After the building is enclosed, requests for Saturday construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division, and only then within the interior of the building with the doors and windows closed.

d) No extreme noise generating activities (greater than 90 dBA) shall be allowed on Saturdays, with no exceptions.

e) No construction activity shall take place on Sundays or Federal holidays.

f) Construction activities include but are not limited to: truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.

g) Applicant shall use temporary power poles instead of generators where feasible.

NOI-2: Noise Control

Ongoing throughout demolition, grading, and/or construction. To reduce noise impacts due to construction, the project applicant shall require construction contractors to implement a site-specific noise reduction program, subject to the Planning and Zoning Division and the Building Services Division review and approval, which includes the following measures:

a) Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).

b) Except as provided herein, Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.

c) Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate

insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction.

d) The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.

NOI-3: Noise Complaint Procedures

Ongoing throughout demolition, grading, and/or construction. Prior to the issuance of each building permit, along with the submission of construction documents, the project applicant shall submit to the Building Services Division a list of measures to respond to and track complaints pertaining to construction noise. These measures shall include:

a) A procedure and phone numbers for notifying the Building Services Division staff and Oakland Police Department (during regular construction hours and off-hours);

b) A sign posted on-site pertaining to permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign shall also include a listing of both the City and construction contractor's telephone numbers (during regular construction hours and off-hours);

c) The designation of an on-site construction complaint and enforcement manager for the project;

d) Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity; and

e) A preconstruction meeting shall be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed.

NOI-4: Interior Noise

Prior to issuance of a building permit and Certificate of Occupancy. If necessary to comply with the interior noise requirements of the City of Oakland's General Plan Noise Element and achieve an acceptable interior noise level, noise reduction in the form of sound-rated assemblies (i.e., windows, exterior doors, and walls), and/or other appropriate features/measures, shall be incorporated into project building design, based upon recommendations of a qualified acoustical engineer and submitted to the Building Services Division for review and approval prior to issuance of building permit. Final recommendations for sound-rated assemblies, and/or other appropriate features/measures, will depend on the specific building designs and layout of buildings on the site and shall be determined during the design phases. Written confirmation by the acoustical consultant, HVAC or HERS specialist, shall be submitted for City review and approval, prior to Certificate of Occupancy (or equivalent) that:

a) Quality control was exercised during construction to ensure all air-gaps and penetrations of the building shell are controlled and sealed; and

b) Demonstrates compliance with interior noise standards based upon performance testing of a sample unit.

c) Inclusion of a Statement of Disclosure Notice in the CC&R's on the lease or title to all new tenants or owners of the units acknowledging the noise generating activity. Potential features/measures to reduce interior noise could include, but are not limited to, the following:

   i. Installation of an alternative form of ventilation in all units identified in the acoustical analysis as not being able to meet the interior noise requirements due to adjacency to a noise generating activity, filtration of ambient make-up air in each unit and analysis of ventilation noise if ventilation is included in the recommendations by the acoustical analysis.

   ii. Prohibition of Z-duct construction.

NOI-5: 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.

NOI-6: Vibration

Prior to issuance of a building permit. A qualified acoustical consultant shall be retained by the project applicant during the design phase of the project to comment on structural design as it relates to reducing groundborne vibration at the project site. If required in order to reduce groundborne vibration to acceptable levels, the project applicant shall incorporate special building methods to reduce groundborne vibration being transmitted into project structures. The City shall review and approve the recommendations of the acoustical consultant and the plans implementing such recommendations. Applicant shall implement the approved plans. Potential methods include the following:

a) Isolation of foundation and footings using resilient elements such as rubber bearing pads or springs, such as a "spring isolation" system that consists of resilient spring supports that can support the podium or residential foundations. The specific system shall be selected so that it can properly support the structural loads, and provide adequate filtering of ground-borne vibration to the residences above.

b) Trenching, which involves excavating soil between the railway/freeway and the project so that the vibration path is interrupted, thereby reducing the vibration levels before they enter the project's structures. Since the reduction in vibration level is based on a ratio between trench depth and vibration wavelength, additional measurements shall be conducted to determine the vibration wavelengths affecting the project. Based on the resulting measurement findings, an adequate trench depth and, if required, suitable fill shall be identified (such as foamed styrene packing pellets (i.e., Styrofoam) or low-density polyethylene).

4.2.3 Impacts and Mitigation Measures

Significance Criteria

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

1. Expose persons to or generate noise levels in excess of standards established in the Oakland General Plan or applicable standards of other agencies (e.g., OSHA);

2. Violate the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding operational noise (shown in Table 4.2-3);

3. Violate the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding construction noise, except if an acoustical analysis is performed (shown in Table 4.2-4). During the hours of 7 PM to 7 AM on weekdays and 8 PM to 9 AM on weekends and federal holidays, noise levels received by any land use from construction or demolition shall not exceed the applicable nighttime operational noise level standard;

4. Violate the City of Oakland Noise Ordinance (Oakland Municipal Code Section 8.18.020) regarding nuisance of persistent construction-related noise;

5. Create a vibration not associated with motor vehicles, trains, or temporary construction or demolition work which is perceptible without instruments by the average person at or beyond any lot line containing the vibration-causing activity, except vibration-causing activities located in the M-40 zone or in the M-30 zone more than 400 feet from any legally occupied residential property (Oakland Planning Code Section 17.120.060);

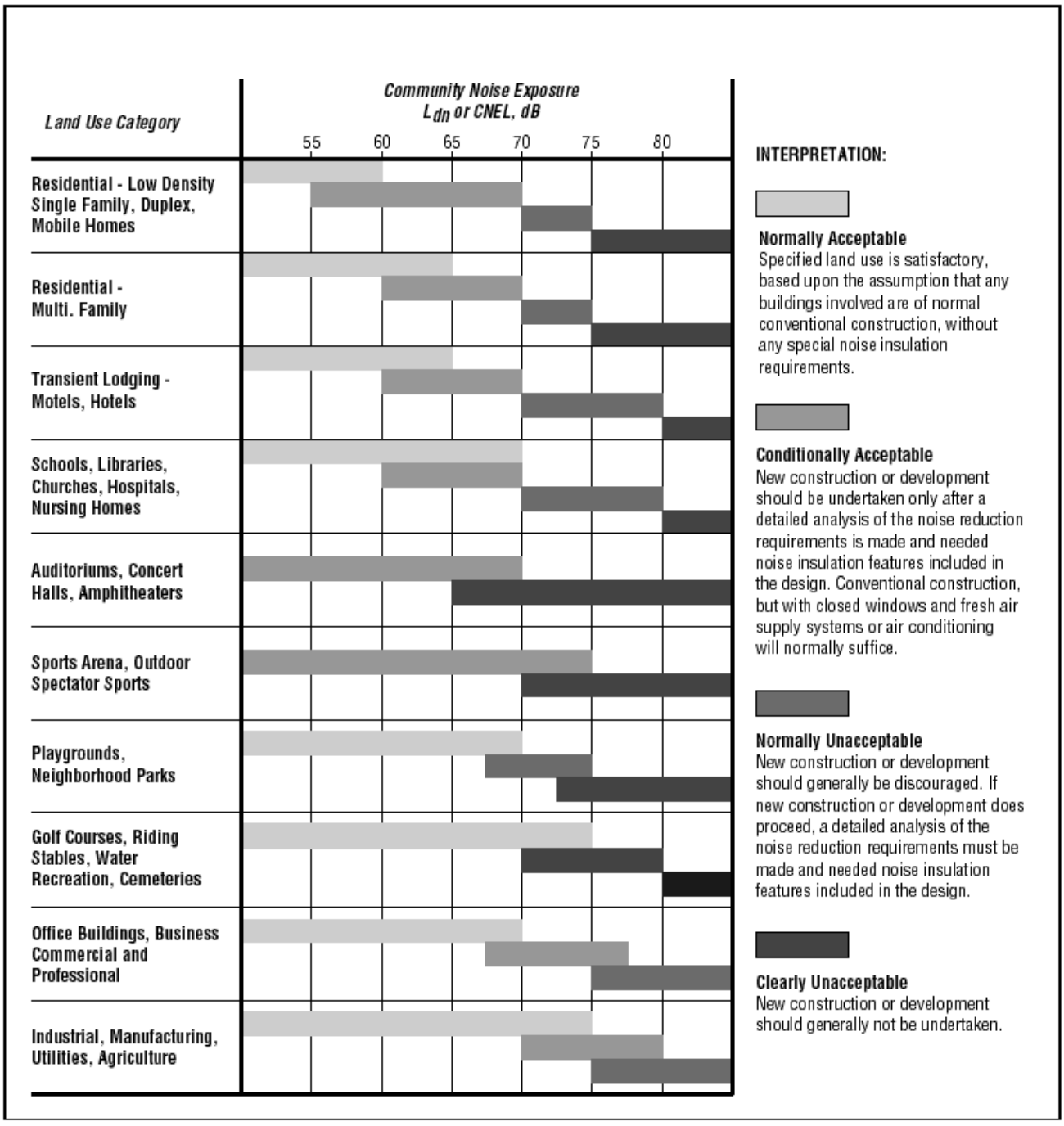
6. Expose persons to or generate rail-related groundborne vibration in excess of standards established by the Federal Transit Administration (FTA) (shown in Table 4.2-5);

7. Generate interior Ldn or CNEL greater than 45 dBA for multi-family dwellings, hotels, motels, dormitories and long-term care facilities (and may be extended by local legislative action to include single family dwellings) per California Noise Insulation Standards (CCR Part 2, Title 24);

8. Result in a 5 dBA permanent increase in ambient noise levels in the project vicinity above levels existing without the project. If the cumulative increase in noise results in a 5dBA permanent increase in ambient noise levels in the project vicinity above existing levels without the project (i.e., cumulative conditions including the proposed project compared to existing conditions), the project's contribution to the cumulative increase would be cumulatively considerable, and significant if it results in a 3dBA permanent increase attributable to the project (i.e., cumulative conditions including the proposed project compared to cumulative conditions without the proposed project)[2];

9. Conflict with land use compatibility guidelines for all specified land uses for determination of acceptability of noise (see **Figure 4.2-3** below) after incorporation of all applicable Standard Conditions of Approval;

[2] Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference, as discussed in this Section, under *Effects of Noise on People*, therefore, 3 dBA is considered an appropriate additional screening criterion to determine if project related noise increases are cumulative considerable.



Fruitvale Transit Village Phase 2 . 208475

SOURCE: City of Oakland

Figure 4.2-3
Land Use Compatibility Guidelines for Acceptability of Noise

10. Be located within an airport land use plan and would expose people residing or working in the project area to excessive noise levels; or

11. Be located within the vicinity of a private airstrip, and would expose people residing or working in the project area to excessive noise levels.

Impacts and Mitigation Measures

Construction Noise

Impact NOI-1: Construction activities would intermittently and temporarily generate noise levels above existing ambient levels in the project vicinity. (Potentially Significant)

Construction-related activities would increase ambient noise levels in the project vicinity over the duration of construction. Construction-related noise levels at and near locations on the project site would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. The effect of construction noise would depend upon the level of construction activity on a given day and the related noise generated by that activity, the distance between construction activities and the nearest noise-sensitive uses, and the existing noise levels at those uses.

Table 4.2-6 shows typical ranges of noise levels generated by construction. **Table 4.2-7** shows noise levels generated by individual construction equipment. As shown in Table 4.2-6, the noisiest phase of a typical construction project would be during pile driving, which could generate noise levels of approximately 101 Leq at 50 feet. However, pile driving would not be required as part of construction of the project.

As noted above, noise from construction activity generally attenuates (decreases) at a rate of 6 dBA to 7.5 dBA per doubling of distance. Construction associated with the project could take place as close as 100 feet from the nearest existing sensitive receptors along East 12th Street and San Leandro Street. It is assumed that noise-generating construction activities could occur anywhere on the site.

Table 4.2-8 shows noise levels at receptors adjacent to the project site during the loudest phases of construction (excavation or finishing). These predicted noise levels would exceed the standards of the Oakland Noise Ordinance, which states that, for residential receptors, the maximum allowable receiving noise for weekday (Monday through Friday, 7:00 AM to 7:00 PM) construction activity of greater than ten days duration is 65 dBA. For construction activity of ten days or less, the residential receiving standard is 80 dBA. Consequently, the noisiest phases of construction would have the potential to exceed the construction noise standard of the City of Oakland's Noise Ordinance. Without mitigation, this impact, though temporary, would be considered significant. As construction activities would be likely to occur during daytime hours, construction noise would also be disruptive to local businesses. However, the analysis focuses on impacts to nearest residential uses as they are considered to be more sensitive to noise than other commercial and industrial uses surrounding the project site.

TABLE 4.2-6
TYPICAL CONSTRUCTION NOISE LEVELS

Construction Phase	Noise Level (dBA, Leq)[a]
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

[a] Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

SOURCE: U.S. Environmental Protection Agency, 1971.

TABLE 4.2-7
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Phase	Noise Level (dBA, Leq)[a]
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Jack Hammer	88
Dozer	87
Paver	89
Generator	76
Backhoe Finishing	85
Pile Driver	101

SOURCE: Cunniff, 1977.

TABLE 4.2-8
ESTIMATED CONSTRUCTION NOISE LEVELS AT ADJACENT USES

Location	Distance (feet)	Excavation or Finishing	
		No Barrier (dBA)	With 10′ Barrier (dBA)
Residential – Across East 12th Street	100	83	73
Residential – South of site on San Leandro	100	83	73
Fruitvale Transit Village Phase 1 – Across 35th Ave.	50	89	79

SOURCE: ESA, 2009.

The proposed project would be subject to the City of Oakland's Standard Conditions of Approval throughout the duration of construction activity. Based on the significance criteria used by the City of Oakland, compliance with the Noise Ordinance is achieved if Standard Conditions of Approval NOI-1, *Days/Hours of Construction Operation*, and NOI-3, *Noise Control* are implemented. NOI-1 and NOI-3 include the limitation of construction between daytime hours, and never on Sundays and federal holidays; equipment and trucks to utilize the best available nose control techniques, impact tools used are to be hydraulically or electrically powered wherever possible;, stationary sources are to be located as far from adjacent receptors as possible; if feasible, the noisiest phases of construction shall be limited to less than ten days at a time, and other measures to the extent feasible. Implementation of these Standard Conditions of Approval would also reduce impacts to onsite receptors during construction, and as a result, project construction impacts related to noise would be considered less than significant.

Significance after Implementation of Standard Conditions of Approval: Less than Significant.

Project Operational Noise

Impact NOI-2: Noise from project-generated traffic and other operational noise sources, such as mechanical equipment, truck loading/unloading, etc., would not exceed the Oakland Noise Ordinance standards and impact nearby sensitive receptors. (Less than Significant)

Operational activities associated with the proposed project that would generate noise include increased vehicular circulation on the local roadway network, and the operation of mechanical equipment such as HVAC equipment.

Most of the noise generated by the project would be traffic-generated noise. The proposed project would contribute to an increase in local traffic volumes, resulting in higher noise levels along local roadways. Using a spreadsheet based upon algorithms from the Federal Highway Administration's Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and the project traffic study provided by Dowling Associates, traffic noise levels were analyzed. The segments analyzed and results of the modeling are shown in **Table 4.2-9**. As depicted in Table 4.2-9, vehicle traffic would not result in a significant increase from the Existing to Existing Plus Project conditions because the increase does not exceed the applicable significance thresholds, and therefore, traffic noise associated with the project would be less than significant.

Once operational, the use of the heating, ventilation and air conditioning (HVAC) systems of the project buildings would generate noise. Operation of HVAC equipment would be subject to the Noise Ordinance standards shown in Table 4.2-3. Air handling equipment is mounted on the rooftops of many buildings in Oakland and operates without noise impacts to adjacent buildings. The equipment for the proposed project is anticipated to be of recent manufacture and must comply with the operational restrictions of the Oakland Noise Ordinance. 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

TABLE 4.2-9
TRAFFIC NOISE INCREASES ALONG LOCAL ROADWAYS IN THE PROJECT AREA

	Modeled Noise Level at 50 Feet From Roadway Centerline[a]								
Street Segment	**Existing**	**Existing + Project**	**Difference between Existing + Project and Existing**	**Significant Project Impact**	**Cumulative without Project (2035)**	**Cumulative + Project (2035)**	**Difference between Cumulative + Project and Existing**	**Difference between Cumulative + Project and Cumulative without Project**	**Significant Project Contribution to Cumulative Impact**
E. 12th Street									
East of 35th Avenue	63.7	63.8	0.1	No	66.7	66.8	3.1	0.1	No
West of 35th Avenue	64.2	64.2	0	No	68.7	68.7	4.5	0	No
East of 37th Avenue	63.2	63.6	0.4	No	66.6	66.6	3.4	0	No
West of 37th Avenue	63.1	63.5	0.2	No	66.8	66.9	3.8	0.1	No
35th Street									
North of E. 12th Street	65.3	65.4	0.1	No	69.1	69.1	3.8	0	No
South of E. 12th Street	64.3	64.4	0.1	No	68.2	68.2	3.9	0	No
37th Street									
North of E. 12th Street	58.5	58.7	0.2	No	59.6	59.8	1.3	0.2	No
South of E. 12th Street	61.3	61.6	0.3	No	66.7	66.8	5.5	0.1	No

[a] Noise levels are estimated at a distance of 50 feet from roadway centerline. Data based on PM Peak Hour. Ldn is approximately equal to the Leq peak hour under normal traffic conditions (Caltrans, 1998).

SOURCE: Dowling Associates, 2009, ESA 2009.

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. The applicable design standard would be 45 dBA at adjacent sensitive land uses. Because the mechanical equipment must be designed and used in a manner that complies with those standards, the related noise impact to project residences and adjacent land uses would not be significant. For these reasons, noise from HVAC equipment would not be expected to significantly affect the noise environment at nearby land uses. This would be a less than significant impact without mitigation.

Mitigation: None required.

Impact NOI-3: The project would place noise-sensitive multifamily residential uses in a noise environment characterized as "normally unacceptable" for such uses by the City of Oakland. (Potentially Significant)

The noise environment in the project vicinity is dominated by BART trains and by traffic on major streets, including East 12th Street. As seen in Table 4.2-1, noise measurements were taken at the project site to establish the environmental baseline. Based on the noise measurements conducted at the project site, the residents would be exposed to exterior noise levels ranging from 71 to 74 dBA Leq at 50 feet from BART, and 65 to 69 dBA Leq at 50 feet from East 12th Street. As shown in Figure 4.2-3 above, the City of Oakland states that land use compatibility for multifamily residential is normally unacceptable between 70 and 75 dBA. The levels in the area would also exceed the City's goal for indoor noise exposure. The residences would be subject to Title 24 of the *California Code of Regulations*, which requires an interior noise level of DNL 45 dBA in any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard. To allow the project to meet the City and state interior noise requirement of 45 dBA, DNL in habitable rooms of residential dwellings, sound-rated assemblies would be required at the exterior facades of project buildings. The project would be required to implement Standard Condition of Approval NOI-4, *Interior Noise* to reduce indoor noise exposure to within City and state standards. Implementation would ensure that interior noise levels would be reduced to 45 dB and are less than significant.

Significance after Implementation of Standard Condition of Approval: Less than Significant.

Impact NOI-4: The project would expose sensitive residential uses to groundborne vibration from trains passing by on the UPRR tracks. (Potentially Significant)

The 2006 FTA *Guidelines* regarding transit noise and vibration state that the ground velocity due to vibration at residential land uses should not exceed 72 VdB, independent of the number of daily train pass-bys (Table 4.2-5). In addition, according to the FTA, the threshold of human perception to

vibration is approximately 65 VdB, while 72 VdB is "barely perceptible," and 80 VdB is "distinctly perceptible." The guideline levels identified by the FTA also include adjustment for vibration propagating from the ground surface, through the building, and into residential floors.

Based on the measurements taken by Charles M Salter Associates Inc. on a similar project site (Fruitvale Gateway Village), the maximum vibration level during BART pass-by would be approximately 67 VdBA at 60 feet from the centerline of the tracks. These vibration levels would be below the FTA's standard for residential uses of 72 VdB and would therefore result in a less than significant impact. Nonetheless, the project will be subject to Standard Condition of Approval NOI-6, Vibration will be included to further reduce vibratory impacts from the BART line.

Significance after Implementation of Standard Condition of Approval: Less than Significant.

Cumulative Impacts

Impact NOI-5: The proposed project, together with past, present, existing, approved, pending, and reasonably foreseeable future development included in the area, could result in long-term traffic increases that could cumulatively increase noise levels in the project area. (Less than Significant)

The geographic area relevant to cumulative noise impacts is the area in close proximity to the project site, including areas of Oakland that encompass the projects included in the City of Oakland's Major Projects List and listed below. In addition, since area traffic contributes to local roadway noise near the project site, incorporated are projects in the ACCMA travel demand model upon which the cumulative traffic analysis in Section 4.3 is based (and on which the noise analysis relies).

Project Name	Components
Fruitvale Point Project 880 Fruitvale Avenue	• 47 residential units • 49 live/work units • 4,000 s.f. commercial
Wattling Street Project 3927 Wattling Street	• 18 condominium units • 61 townhome units
St. Joseph's Project 2647 International Boulevard	• Rehabilitation of the historic building • 80 units of senior housing • 15,000 s.f. office
2985 Ford Street Project	• 56 condominium units • 15 live/work units
Gateway Community Development Project East 12th Street between 25th Avenue and Derby Street	• 810 residential units • 26,000 s.f. commercial
Ford Street Lofts 3041, 3061 and 3065 Ford Street	• 81 condominium units

Project Name	Components
Cotton Mills Studios 1091 Calcot Place	• 74 unit live/work conversion
Glascock Residential Project "The Estuary" 2893 Glascock	• 100 residential units

Table 4.2-9 shows the future noise levels resulting from cumulative traffic *without* the project compared to existing conditions, which would exceed the significance threshold along one roadway segment (37th Street, South of E. 12th Street) (5.5 dBA compared to the threshold of 5.0 dBA). As detailed under the *Significance Thresholds* for determining significant cumulative noise impacts, a 3.0 dBA change in noise level is considered a just-perceivable difference and is therefore applied as an additional screening criterion to determine whether project related noise increases are cumulative considerable. For this assessment, Table 4.2-9 then compares the future cumulative traffic noise with the project to future cumulative traffic noise *without* the project to determine whether the project's contribution to the cumulative increase of 5.5 dBA is considerable and thus significant. As indicated in Table 4.2-9, the proposed project's contribution would not be cumulatively considerable because the increase attributable to the project is 0.1 dBA, which does not exceed 3.0 dBA. Thus, traffic associated with the proposed project in the Cumulative plus Project (year 2035) scenario would not result in a cumulatively significant noise impact along local roadways.

Mitigation: None required.

References – Noise

Airport Land Use Commission of Alameda County, *Alameda County Airport Land Use Policy Plan*, July 16, 1986.

Caltrans, *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*, October 1998.

Charles M. Salter & Associates, Inc., *Fruitvale Gateway Project - Environmental Noise and Vibration Feasibility Study*, June 2005.

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Charles M. Salter & Associates, Inc., *Gateway Community Groundborne Vibration Analysis*, July 2007.

City of Oakland, *City of Oakland General Plan - Noise Element*, June 2005.

City of Oakland, Municipal Code, http://library.municode.com/index.aspx?clientId=16308&stateId=5&stateName=California, accessed December 29, 2009

City of Oakland, Planning Code, http://library.municode.com/index.aspx?clientId=16490&stateId=5&stateName=California, accessed December 29, 2009

City of Oakland, *Standard Conditions of Approval*, September 17, 2008.

Dowling Associates, Inc., *Fruitvale Transit Village II, Transportation Impact Analysis*, December 2009 (provided as Appendix E.1).

Federal Interagency Committee on Noise (FICON), *Federal Agency Review of Selected Airport Noise Analysis Issues*,1992

Illingworth & Rodkin, *City of Oakland Noise Element Update Environmental Noise Background Report*, December 16, 2004.

U.S. Department of Transportation, Federal Transit Administration, Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06, May 2006.

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

4.3 Transportation, Circulation and Parking[1]

This section describes the transportation, circulation, and parking conditions, including transit services and pedestrian and bicycle facilities at the project site and in its vicinity, and provides an analysis of the proposed project's potential impacts to these conditions and facilities. The analysis evaluates the traffic-related impacts of the proposed project during both the weekday morning and evening peak hours. The analysis was conducted in compliance with City of Oakland and Alameda County Congestion Management Agency (ACCMA) guidelines.

Traffic conditions are assessed at 18 critical intersections and two project driveways in the study area for the following six scenarios:

- **Existing** – Represents existing conditions with volumes obtained from recent traffic counts and the existing roadway system.
- **Existing With Project** – Existing conditions plus the proposed project.
- **2015 Baseline** – Future conditions, which includes existing and forecasted population and employment growth, and planned transportation system improvements, excluding the proposed project, for 2015. Traffic projections were developed using the Alameda Countywide Travel Demand Model provided by ACCMA (ACCMA Model) and the City's Traffic Impact Study (TIS) Technical Guidelines.
- **2015 With Project** – Future conditions for 2015, as defined above for the 2015 Baseline scenario, plus the proposed project.
- **2035 Baseline –** Future conditions, which includes existing and forecasted population and employment growth, and planned transportation system improvements, excluding the proposed project, for 2035. Traffic projections were developed using the ACCMA Model and the City's TIS Technical Guidelines.
- **2035 With Project –** Future conditions for the year 2035, defined above for the 2035 Baseline scenario, plus the proposed project.

This section identifies any potentially significant traffic, circulation and parking impacts and, if necessary, appropriate mitigation measures and/or standard conditions of approval. Pursuant to an amendment to the Oakland General Plan LUTE (effective June 21, 2005 [2007a]), as well as Section 15358(b) of the CEQA Guidelines, mitigation measures are proposed only to address physical impacts that may result from the project.

[1] This EIR section was prepared on the basis of information, analysis and findings contained in *Fruitvale Transit Village II, Transportation Impact Analysis*, prepared by Dowling Associates, Inc. (December 2009). This technical report is provided as Appendix E.1 of this Draft EIR.

4.3.1 Existing Setting

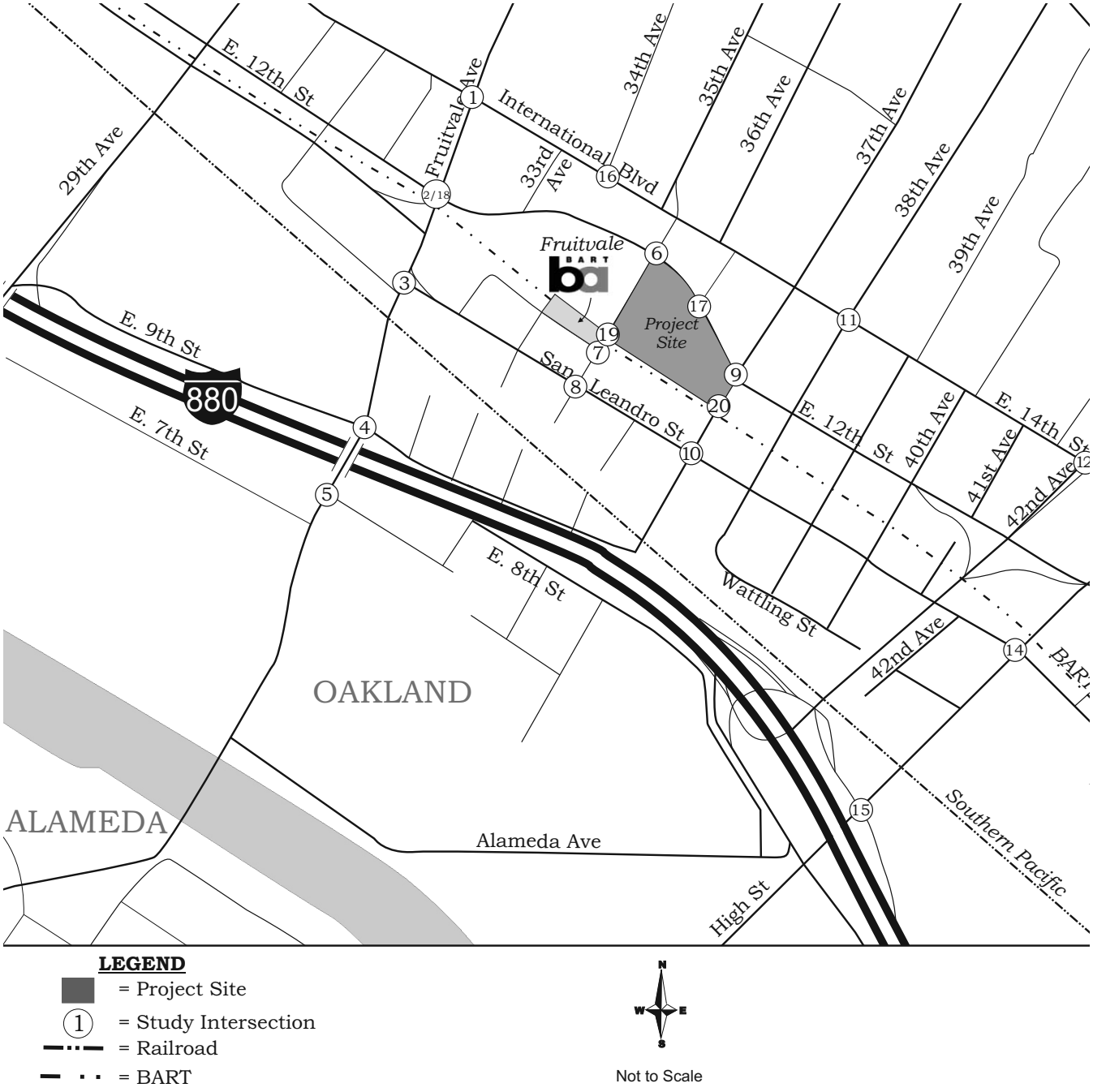
Figure 4.3-1 illustrates the location of the proposed project and the local and regional street system. The existing transportation-related context in which the proposed project would be constructed is described in detail below, beginning with a description of the study area and the street network that serves the project site. Existing transit service, bicycle and pedestrian facilities, and on- and off-street parking in the vicinity of the project site are also described. Intersection and roadway levels of service are then defined and current conditions for roadways and intersections in the project vicinity are summarized. This subsection also describes planned transportation improvements in the project vicinity as well as the applicable planning policies.

Study Area

A set of local intersections and freeway segments and ramp areas were selected for analysis based upon the anticipated volumes and distributional patterns of project traffic. This selection was made in collaboration with City of Oakland staff and took into consideration comments received during the Notice of Preparation process. Operations at 18 intersections and 2 project driveways in the vicinity of the project site (listed below, and shown on Figure 4.3-1) were evaluated during the weekday morning (AM) and evening (PM) peak periods for Existing, 2015 and 2035 conditions. The analysis includes peak-hour operations at five freeway mainline segments and five ramp merge/diverge/weave areas. These intersections, freeway mainline segments, and freeway merge/diverge/weave areas are listed below. All of the intersections, mainline segments, and freeway merge/diverge/weave areas are all located within Oakland.

Intersections

1. Fruitvale Avenue / International Boulevard
2. Fruitvale Avenue / East 12th Street (north)
3. Fruitvale Avenue / East 10th Street -San Leandro Street
4. Fruitvale Avenue / East 9th Street
5. Fruitvale Avenue / East 8th Street
6. 35th Avenue / East 12th Street
7. 35th Avenue / BART bus-passenger drop-off driveway
8. 35th Avenue / San Leandro Street
9. 37th Avenue / East 12th Street
10. 37th Avenue / San Leandro Street
11. 38th Avenue / International Boulevard
12. 42nd Avenue / International Boulevard
13. High Street / International Boulevard
14. High Street / San Leandro Street
15. High Street / Coliseum Way
16. 34th Avenue / International Boulevard
17. 36th Avenue / East 12th Street
18. Fruitvale Avenue / East 12th Street (south)
19. 35th Avenue / Project Driveway (*With Project scenario only*)
20. 37th Avenue / Project Driveway (*With Project scenario only*)



SOURCE: Dowling Associates, Inc.

Fruitvale Transit Village Phase 2 . 208475

Figure 4.3-1
Study Intersections

Freeway Mainline Segments

I-880 northbound south of High Street
I-880 northbound between 29th and 42nd Avenues
I-880 northbound north of Fruitvale
I-880 southbound north of Fruitvale Avenue
I-880 southbound south of High Street

Freeway Merge/Diverge/Weave Areas

I-880 northbound off-ramp to High Street
I-880 northbound on-ramp from 42nd Street
I-880 northbound weave between Fruitvale/29th Avenues on-ramp and 23rd Avenue off-ramp
I-880 southbound weave between 29th Avenue on-ramp and Fruitvale Avenue off-ramp
I-880 southbound on-ramp from High Street

Existing Roadway Network

Regional Roadways

Regional vehicular access to the project site is provided primarily by Interstate 880 (I-880), a freeway facility located approximately one-quarter mile south of the project site. Access to and from I-880 is provided at the High Street, Fruitvale Avenue, and 29th Avenue interchanges. In the project vicinity, I-880 is an eight-lane freeway. The average annual daily traffic volume in the project area is about 220,000 vehicles (Caltrans, 2009a).

Local Roadways

Local access is provided by a modified grid network of arterial and collector streets and local roads. In the study area streets are generally oriented in a north-south direction while avenues generally indicate an east-west direction. These roadways are described below.

- **International Boulevard** is a generally east-west four-lane arterial roadway that extends from downtown Oakland east towards the City of San Leandro. In the project area, International Boulevard is primarily a divided roadway separated by a center median. However, a center two-way left turn lane is provided between 36th and 37th Avenue. International Boulevard serves the Fruitvale area's major commercial district. Near the project site, the intersections with Fruitvale Avenue, 33rd Avenue, 35th Avenue, 38th Avenue, 42nd Avenue and High Street are signalized.

- **East 12th Street** is an east-west two-lane roadway between 35th Avenue and 40th Avenue parallel to and south of International Boulevard. Between 40th Avenue and 44th Avenue, it becomes an eastbound one-way street. The intersections with Fruitvale Avenue, 35th Avenue and High Street are signalized. East 12th Street provides the northern boundary of the project site. In the project vicinity, East 12th Street provides access to I-880 at the 42nd Avenue / High Street interchange.

- **San Leandro Street** is an east-west four-lane arterial roadway that extends from Fruitvale Avenue to the City of San Leandro. The intersections with Fruitvale Avenue, 33rd Avenue, 35th Avenue, 37th Avenue and High Street are signalized. Other side streets are stop sign controlled. San Leandro Street is identified as a through truck route.

- **East 9th Street** is an east-west frontage road that runs parallel to and north of I-880. The two-lane roadway provides access to I-880 northbound via the Lisbon / 29th Avenues on-ramp. In the project vicinity, it curves northward and becomes 37th Avenue north of San Leandro Street.

- **East 8th Street** is an east-west frontage road that runs parallel to and south of I-880. East of Fruitvale Avenue, it is a one-way road that provides access from the I-880 southbound off-ramp.

- **Fruitvale Avenue** is a north-south arterial providing access to the City of Alameda. This four-lane roadway is signalized at all major intersections, including San Leandro Street, adequate East 12th Street, International Boulevard, East 8th Street and East 9th Street. Two sets of railroad tracks cross Fruitvale Avenue just south of the Fruitvale Avenue / San Leandro Street intersection.

- **35th Avenue** is a north-south two-lane roadway that directly serves the BART station and provides access to points north. Two driveways along 35th Avenue provide access to the station curb for transit buses and kiss-and-ride BART patrons. The project access along 35th Avenue allows right-in/right-out movements only.

- **36th Avenue** is a north-south two-lane roadway that is discontinuous south of East 12th Street at the existing parking lot.

- **37th Avenue** is a north-south two-lane roadway running from East 9th Street to Foothill Boulevard. A full access project driveway is provided on this road. Railroad tracks cross 37th Avenue south of its intersection with San Leandro Street.

- **High Street** is a north-south arterial that connects the City of Alameda with I-580 and areas north of I-580. In the project vicinity, it has four travel lanes. Railroad tracks cross High Street north of the High Street / Coliseum Way intersection.

Existing Transit Service

The site is located north of and adjacent to the Fruitvale BART station. Transit services in the project vicinity are provided by the Alameda-Contra Costa Counties Transit District (AC Transit) and the Bay Area Regional Transit District (BART).

Alameda-Contra Costa Counties Transit District (AC Transit)

The Fruitvale BART station functions as a transfer station for AC Transit buses. Most of the buses serve as feeder lines to the BART station from points north and from Alameda to the south. The nearest bus stops are located in the Fruitvale BART station and along 35th Avenue north of East 12th Street and International Boulevard at 34th Avenue. AC Transit plans to implement a Bus Rapid Transit (BRT) system between the cities of Berkeley and San Leandro. The planned alignment includes International Boulevard near the project site. **Table 4.3-1** shows the frequency of service of AC Transit routes at stops nearest to the project site (AC Transit, 2010); maximum load factors are also shown (Der, 2009). Load factor is defined as the ratio of occupied seats to the number of seats on the bus. A load factor of 100 percent or more indicates that the bus operates at or above its seated capacity.

TABLE 4.3-1
AC TRANSIT BUS SERVICE

Line	Route	Service Hours	Frequency (in minutes)		Load Factor (near Project Site)[a]
			Weekday	Weekend	
1	Bay Fair BART to Berkeley BART via International Boulevard	5 AM to 12 midnight	15 to 20	20	118%
1R	Bay Fair BART to Berkley BART via International Blvd (Rapid Transit)	6 AM to 7 PM	12	15	125%
14	Fruitvale BART to MacArthur BART via High Street and International Boulevard	5 AM to 8 PM	15 to 30	30	84%
19	Fruitvale BART to Berkeley BART via Fruitvale Avenue and the City of Alameda	6 AM to 10:30 PM	30	30	68%
47	Fruitvale BART to Mills College via International Boulevard	6 AM to 7 PM	30	No service	30%
50	Fruitvale BART to Bay Fair BART via East 12th Street	5 AM to 12 midnight	15	30	59%
53	Fruitvale BART to Dimond District via Fruitvale Avenue	5 AM to 12 midnight	15	15	64%
54	Fruitvale BART to Merritt College via 35th Avenue	6 AM to 10 PM	10-15	30	44%
62	Fruitvale BART to West Oakland BART via East 12th Street	5:30 AM to 12 midnight	20	30	53%
63	Fruitvale BART to Oakland old town via the City of Alameda	5:30 AM to 12 midnight	30	30	71%
654	Fruitvale BART to Skyline High School via 35th Avenue	6:30 AM to 7 PM	60	No service	NA
655	Fruitvale BART to Skyline High School and Montera Middle School via 35th Avenue	1 AM bus and 1 PM bus only	NA	No service	NA
801	Fremont BART to Oakland downtown via Fruitvale BART	11:30 PM to 7 AM	60	60	28%

[a] Load Factor is defined as the ratio of occupied seats to the number of seats on the bus.

SOURCE: AC Transit, Maps and Schedules (actransit.org/maps), accessed January 6, 2001; and maximum load and typical vehicle assignment data from Howard Der (AC Transit), June 10, 2009.

Bay Area Rapid Transit (BART)

BART provides regional rail service throughout the East Bay and across San Francisco Bay to San Francisco and the Peninsula. The Fruitvale station is served by three lines: Fremont/ Richmond, Pleasanton/Millbrae, and Fremont/Daly City lines, between 4:00 AM and midnight Monday through Friday; 6:00 AM to midnight on Saturdays; and 8:00 AM to midnight on Sundays and major holidays. The trains run at 15-minute intervals.

Existing Bicycle / Pedestrian Network

Bicycle and pedestrian facilities can be classified into several types, including:

- **Class I Paths** – These facilities are located off-street and can serve both bicyclists and pedestrians. Recreational trails can be considered Class I facilities. Class I paths are typically 8 to 10 feet wide excluding shoulders and are generally paved.

- **Class II Bicycle Lanes** – These facilities provide a dedicated area for bicyclists within the paved street width through the use of striping and appropriate signage. These facilities are typically 5 to 6 feet wide.

- **Class III Bicycle Routes** – These facilities are found along streets that do not provide sufficient width for dedicated bicycle lanes. The street is then designated as a bicycle route through the use of signage informing drivers to expect bicyclists.

  - ***Class IIIA Arterial Bicycle Routes*** – These facilities are found along some arterial streets where bicycle lanes are not feasible and parallel streets do not provide adequate connectivity. Speed limits as low as 25 miles per hour (mph), shared lane bicycle stencils, wide curb lanes, and signage are used to encourage shared use.
  - ***Class IIIB Bicycle Boulevards*** – These facilities are found along residential streets with low traffic volumes. Assignment of right-of-way to the route, traffic calming measures and bicycle traffic signal actuation are used to prioritize through-trips for bicycles.

- **Sidewalks** – The exclusive realm of pedestrians, sidewalks provide pedestrian access and circulation. Sidewalks can vary in width from about 5 to 20 feet; wider sidewalks are typically found in heavily urbanized and downtown areas.

Pedestrian Facilities

The *City of Oakland 2002 Pedestrian Master Plan (PMP)*, November 12, 2002, developed the following four types of sidewalk facilities and routing designations with design guidelines for each type: City, District, Neighborhood, and Walkway. The study area contains the first three sidewalk types, which are described as follows:

- **City Routes** are generally streets that have a variety of destination types, access to transit, and connect multiple districts. In the study area, International Boulevard, Fruitvale Avenue, and San Leandro Street are City Routes.

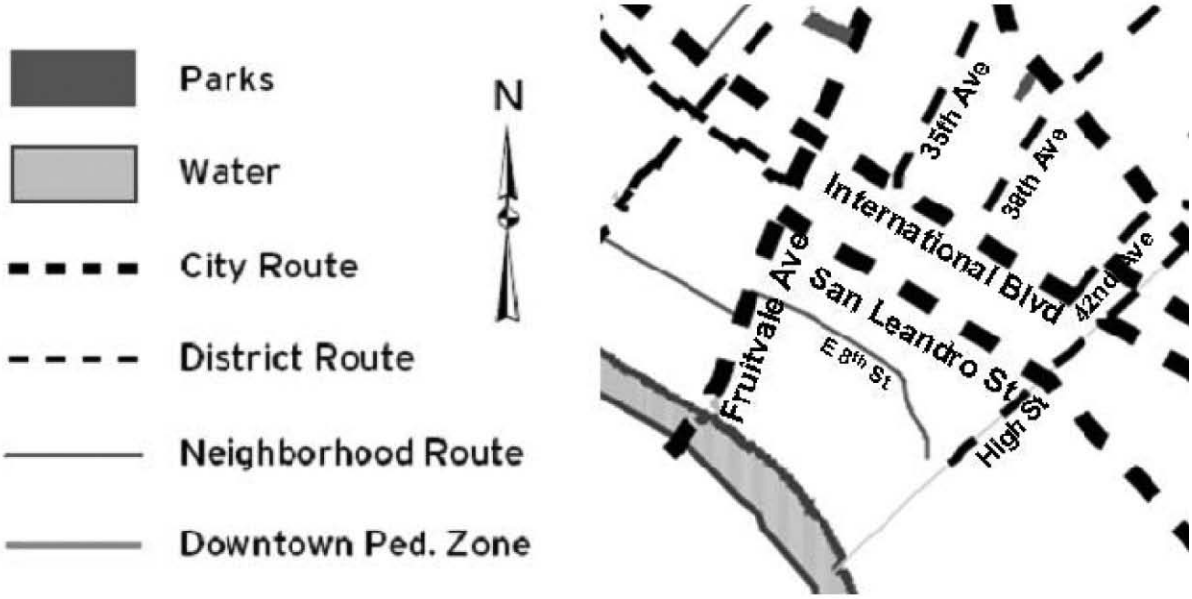
- **District Routes** are streets that provide access to district destinations, such as schools, community centers, and small-scale retail. In the study area, 35th Avenue, 38th Avenue, 42nd Avenue, and High Street are District Routes.

- **Neighborhood Routes** are local streets that provide access to schools, parks, recreational centers, and libraries. In the study area, East 8th Street is a Neighborhood Route.

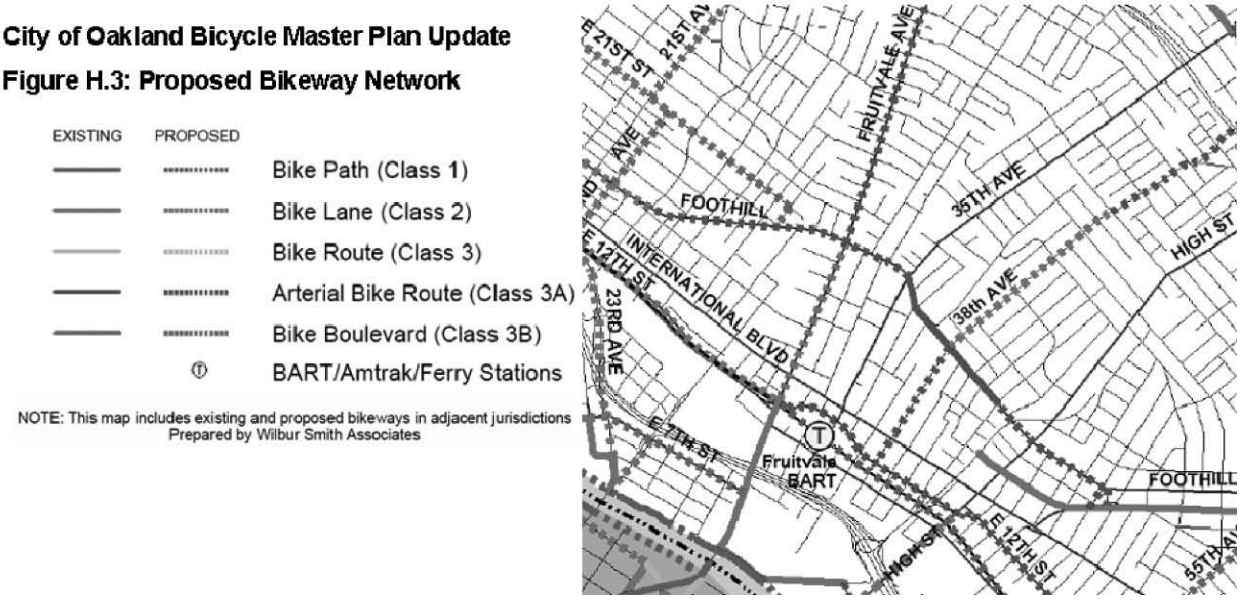
The Pedestrian Route Network in the study area is shown in **Figure 4.3-2**.

Sidewalks, ranging from 5 feet to 12 feet (along International Boulevard), are generally provided through the project area. All traffic signals have pedestrian heads with an audio warning device

Pedestrian Route Network in Study Area



Existing and Proposed Bikeways



Fruitvale Transit Village Phase 2 . 208475

SOURCE: Dowling Associates, Inc.

Figure 4.3-2

Pedestrian Routes and Existing and Proposed Bikeways

and push button activation system to serve this high foot-traffic area. Curb ramps are also generally available at most intersections.

Pedestrian counts were collected at the study intersections during the AM and PM peak hours. Summing the AM and PM counts, the highest numbers of pedestrian crossings were found at the intersections of 34th Avenue and International Boulevard (1,014 pedestrians), 35th Avenue and East 12th Street (565 pedestrians), and Fruitvale Avenue and International Boulevard (552 pedestrians). A summary of the pedestrian intersection crossing counts is provided in the background Transportation Analysis (**Appendix E.1** of this EIR).

Bicycle Facilities and Circulation

Based on the City of Oakland's 2007 *Bicycle Master Plan* (BMP), the existing and planned bicycle facilities in the project vicinity are shown on Figure 4.3-2. The BMP contains goals and policies, analysis of existing conditions, future bikeway network, prioritization of projects, and coordination with neighboring municipalities to provide a supportive bicycling environment. Current mode shares for commuting bicyclists by residential census tract is 0.5 percent to 2.0 percent in most of the study area and 2.0 percent to 3.5 percent in the area near the International Boulevard / Fruitvale Avenue intersection, according to a summary of the 2000 U.S. Census data contained in the BMP. Oakland's average mode share for journey-to-work by bicycle is 1.2 percent.

Existing bikeways in the study area include bike lanes on Fruitvale Avenue, south of East 12th Street. The BMP includes plans to add or extend the following bikeways in the study area:

- Class 1 Trail under BART elevated tracks east of Fruitvale Avenue
- Class 2 Bike lanes on Fruitvale Avenue north of East 12th Street
- Class 2 Bike lanes on High Street south of East 12th Street
- Class 2 Bike lanes on East 12th Street west of Fruitvale Avenue
- Class 3A Arterial bike route on East 12th Street east of Fruitvale Avenue
- Class 3A Arterial bike route on 38th Avenue north of East 12th Street

The Fruitvale Bike Station, located near the BART station fare gates, can house up to 200 parked bicycles; on-street bicycle parking is found on International Boulevard in the study area. Existing and proposed bikeways are shown in Figure 4.3-2.

Existing Parking Characteristics

Data was collected to assess current on-street parking conditions in the study area. Restricted and unrestricted on-street parallel parking is located throughout the project area. Unrestricted parking includes spaces that are free of charge and do not have any time restriction except during street cleaning, which generally occurs on Wednesday or Thursday between 9:00 AM and noon.

Unrestricted parking is located along the south side of East 12th Street between 35th and 38th Avenues, the west side of 35th Avenue between East 12th Street and San Leandro Avenue, the east side of 35th Avenue between the BART tracks and San Leandro Avenue, the east side of

37th Avenue between International Boulevard and San Leandro Avenue, the west side of 37th Avenue between East 12th Street and San Leandro Avenue, and along most of San Leandro Avenue and its side streets. No parking is allowed along the north side of East 12th Street between 35th and 37th Avenues and the eastside of 35th Avenue between International Boulevard and San Leandro Avenue except where noted above. Unmetered, 1- or 2-hour limit restricted parking is generally located along other street segments in the project area except on International Boulevard and Fruitvale Avenue, where metered parking is provided.

Two on-street parking surveys were conducted. A mid-morning (10:15 AM to 11:15 AM) parking occupancy survey was performed on Wednesday, April 22, 2009. The survey found that the occupancy rates at the unrestricted locations and at unmetered but time-restricted locations was generally close to 100 percent during the weekday mid-morning timeframe. At metered stalls on International Boulevard and Fruitvale Avenue, the occupancy rates were about 50 percent and 25 percent respectively.

An evening on-street parking occupancy survey within a two-block radius of the project site was conducted on Tuesday, June 9, 2009 (between 7:00 PM and 7:30 PM). Parking occupancy varied greatly between streets. The side streets south of San Leandro Avenue, between 35th and 37th Avenues; and East 12th Street, east of 37th Avenue, were approximately 90 percent occupied. There was considerably more parking available within one to two blocks of the project site along International Boulevard, East 12th Street, 37th Avenue and San Leandro Avenue. Surveyed occupancy rates in this area ranged from 0 percent (no parked vehicles) to 40 percent of on-street parking occupied.

Existing Traffic Conditions

Weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period intersection traffic counts (vehicle turning movements, as well as pedestrian and bicycle volumes) were conducted at the study intersections on April 21 and April 29, 2009, while area schools were in normal session. (See **Appendix E.1** of this EIR for the peak-hour volumes, existing intersection lane configurations and traffic control devices.) Traffic signal timing data for all of the signalized study intersections was obtained from the City of Oakland Transportation Services Division.

Analysis Methods

Intersection operations are described using the term “Level of Service” (LOS). LOS is a qualitative description of traffic operations from the vehicle driver perspective and consists of the delay experienced by the driver at an intersection. It ranges from LOS A, with no congestion and little delay, to LOS F, with excessive congestion and delays. Different methods, as described below, are used to assess signalized and unsignalized (stop-controlled) intersections, as well as freeway mainline segments, and ramp merge/diverge/weave areas.

Signalized Intersections

Signalized intersection operations are evaluated using methods provided in the 2000 *Highway Capacity Manual* (HCM) (TRB, 2000) and the Synchro traffic analysis software program. These

methods evaluate average control delays and then assign an LOS. Control delay is defined as the delay associated with deceleration, stopping, moving up in the queue, and acceleration experienced by drivers at an intersection. Descriptions of various LOS and the corresponding ranges of delays for signalized intersections are provided in **Table 4.3-2**.

TABLE 4.3-2
DEFINITIONS FOR INTERSECTION LEVEL OF SERVICE

Unsignalized Intersections		Level of Service Grade	Signalized Intersections	
Description	**Average Total Vehicle Delay (Seconds)**		**Average Control Vehicle Delay (Seconds)**	**Description**
No delay for stop-controlled approaches.	≤10.0	A	≤10.0	*Free Flow or Insignificant Delays*: Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not stop at all.
Operations with minor delay.	>10.0 and ≤15.0	B	>10.0 and ≤20.0	*Stable Operation or Minimal Delays*: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay. An occasional approach phase is fully utilized.
Operations with moderate delays.	>15.0 and ≤25.0	C	>20.0 and ≤35.0	*Stable Operation or Acceptable Delays*: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Most drivers feel somewhat restricted.
Operations with increasingly unacceptable delays.	>25.0 and ≤35.0	D	>35.0 and ≤55.0	*Approaching Unstable or Tolerable Delays*: Influence of congestion becomes more noticeable. Longer delays result from unfavorable signal progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop. Drivers may have to wait through more than one red light. Queues may develop, but dissipate rapidly, without excessive delays.
Operations with high delays, and long queues.	>35.0 and ≤50.0	E	>55.0 and ≤80.0	*Unstable Operation or Significant Delays*: Considered to be the limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
Operations with extreme congestion, and with very high delays and long queues unacceptable to most drivers.	>50.0	F	>80.0	*Forced Flow or Excessive Delays*: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.

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

Unsignalized Intersections

Unsignalized intersection LOS are also analyzed using the 2000 HCM and Synchro software. Delay is calculated for movements that are controlled by a stop sign or that must yield the right-of-way. The movement or approach with the highest delay is reported. The LOS ranges for unsignalized intersections are shown in Table 4.3-2. They are lower than the delay ranges for signalized intersections because drivers will tolerate more delay at signals.

It is not unusual for some of the minor street movements to have an LOS D, E or F condition while the major street movements have LOS A, B or C conditions. In such a case, the minor street traffic experiences delays that can be substantial for individual minor street vehicles, but the majority of vehicles using the intersection have very little delay. Often, the minor street traffic volumes are relatively low. If the minor street volume is large enough, improvements to reduce the minor street delay may be justified, such as channelization, widening, or signalization.

The potential need for traffic signals at the unsignalized intersections is evaluated in accordance with the *California Manual on Uniform Traffic Control Devices* (Caltrans, 2006). As stated in the California MUTCD, "An engineering study of traffic condition, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location." The investigation of the need for a traffic control signal shall include an analysis of the applicable factors contained in the following traffic signal warrants and other factors related to existing operation and safety at the study location:

- Warrant 1: Eight-Hour Vehicular Volume;
- Warrant 2: Four-Hour Vehicular Volume;
- Warrant 3: Peak Hour;
- Warrant 4: Pedestrian Volume;
- Warrant 5: School Crossing;
- Warrant 6: Coordinated Signal System;
- Warrant 7: Crash Experience; and/or
- Warrant 8: Roadway Network."

The analysis provided herein focused on Warrant 3: Peak Hour, which is used as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. However, the satisfaction of a traffic signal warrant or warrants would not in itself require the installation of a traffic control signal. Intersections that exceed the peak-hour warrant are considered to be likely to meet one or more of the other signal warrants (such as the four-hour or eight-hour warrants).

Freeway Mainline Segments

The 2000 HCM procedures were used to calculate average peak-hour capacities for each LOS threshold from LOS A to LOS F for freeway mainline segments. The LOS was determined using vehicle density given an estimated free-flow speed of 70 miles per hour for all of the freeway segments, which is the base free-flow speed for urban areas from the HCM. Density is the number of passenger cars per mile per lane (pc/mi/ln) using a transportation facility. **Table 4.3-3** contains the density thresholds.

TABLE 4.3-3
LEVEL OF SERVICE (LOS) AND DENSITY FOR FREEWAY SEGMENTS
(FREE-FLOW SPEED AT 70 MPH)

LOS	Maximum Density (pc/mi/ln)
A	11
B	18
C	26
D	35
E	45

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

Freeway Merge/Diverge Areas

The 2000 HCM procedures were used to analyze the freeway ramp merge/diverge areas. Freeway ramp operating conditions are dependent upon traffic volumes and the ramp characteristics. These characteristics include the length and type of acceleration/deceleration lanes; free-flow speed of the ramps; number of lanes; grade; and types of facilities that the ramps interconnect. **Table 4.3-4** contains the density thresholds for freeway merge/diverge areas.

TABLE 4.3-4
LEVEL OF SERVICE (LOS) AND DENSITY FOR
FREEWAY RAMP MERGE/DIVERGE AREAS

LOS	Maximum Density (pc/mi/ln)
A	10
B	20
C	28
D	35
E	>35
F	Demand exceeds capacity

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

As shown in Table 4.3-4, the basic criterion used to determine Freeway Ramp LOS is vehicle density in the merge or diverge area. Note that the 2000 HCM requires that several additional criteria be considered so that LOS F is automatically attained for a ramp if:

At an on-ramp, volume exceeds capacity in:

- The segment of a freeway downstream, or
- The merge-area defined by the on-ramp and the two adjacent freeway lanes.

At an off-ramp, volume exceeds capacity in:

- The segment of a freeway upstream or downstream,
- The off-ramp itself, or
- The diverge-area defined by the two adjacent freeway lanes approaching the ramp.

Freeway Weaving Analysis

Freeway weaving segments were analyzed using the Leisch Method as described in the Caltrans *Highway Design Manual* (Caltrans, 2009b). Freeway weaving conditions are dependent upon traffic volumes and the weaving length between the interchanges; lane configurations; and the free-flow speed of the freeway segment. Weaving analysis is typically applicable for freeway segments where the distance between an on-ramp and a downstream off-ramp is less than 2,500 feet.

Existing Intersection Operations

Existing operations were evaluated for the weekday AM and PM peak hours at the study intersections. Existing vehicle and pedestrian volumes were used with the existing lane configurations and signal timing parameters as inputs into the LOS calculations to evaluate current operations. **Table 4.3-5** shows the LOS results for the study intersections at the existing traffic volume levels. Detailed intersection LOS calculation worksheets are on-file and available for review at the City of Oakland Community and Economic Development Agency.

The analysis shows that the intersection of Fruitvale Avenue and East 9th Street is currently operating at LOS E during the PM peak hour; while the remaining study intersections are operating at an acceptable LOS D or better. However, field observations had shown that the southbound queue on Fruitvale Avenue at the East 9th Street intersection spilled back north to the San Leandro Street intersection with Fruitvale Avenue. Consequently, through traffic could not proceed through the intersection even during a green signal phase. This situation persisted for most of the PM peak hour. The queue north of San Leandro Street is generally contained within the same block and does not extend beyond East 12th Street.

The analysis also indicates that signal warrants are not met at any of the unsignalized intersections during the AM or the PM peak hour. Detailed signal warrant worksheets are provided in the background Transportation Analysis (**Appendix E.1** of this DEIR).

Existing Freeway Mainline Operations

Five mainline segments on I-880 were evaluated. Existing volumes were obtained from Caltrans. The existing mainline operations are shown in **Table 4.3-6**. The results indicate that the study segments operate at LOS E or better during both peak hours.

The ACCMA conducts periodic monitoring of the freeways and major roadways in Alameda County. The most recent report (*2008 Level of Service Monitoring on the Congestion Management Program Roadway Network* or ACCMA Monitoring Report) was released in September 2008 (ACCMA, 2008). The ACCMA monitoring report assesses existing freeway operations through "floating car" travel time surveys during the PM peak hours, and on selected freeway segments during the AM peak hours, rather than analyzing volume-to-capacity ratios, which is how future operating conditions are assessed. Based on the results of these surveys, ACCMA assigns a LOS grade to each segment according to the method described in the 1985 *Highway Capacity Manual* (TRB, 1985). According to the ACCMA, any segment with an

TABLE 4.3-5
EXISTING INTERSECTION LEVEL OF SERVICE (LOS) SUMMARY

	Intersection	Traffic Control	AM Peak		PM Peak	
			LOS	Delay[a]	LOS	Delay[a]
1	Fruitvale Ave. / International Blvd	Signal	B	17.3	B	17.3
2	Fruitvale Ave. / East 12th St. (north)[b]	Signal	C	22.7	C	24.1
3	Fruitvale Avenue / San Leandro Street	Signal	C	21.7	C	26.1
4	Fruitvale Avenue / East 9th Street	Signal	D	44.7	***E***	***70.1***
5	Fruitvale Avenue / East 8th Street	Signal	C	20.3	C	22.1
6	35th Avenue / East 12th Street	Signal	B	12.4	C	24.9
7	35th Avenue / BART Access[c]	One-way stop	A (A)	1.2 (9.9)	A (B)	1.4 (13.5)
8	San Leandro Street / 35th Avenue	Signal	A	9.6	B	11.5
9	37th Avenue / East 12th Street	All-way stop	A	9.8	B	11.3
10	San Leandro Street / 37th Avenue	Signal	A	9.1	B	12.6
11	International Blvd / 38th Avenue	Signal	B	11.5	A	7.4
12	International Blvd / 42nd Avenue	Signal	D	50.8	D	53.3
13	International Blvd / High Street	Signal	C	22.4	C	22.7
14	San Leandro Street / High Street	Signal	B	17.1	B	18.7
15	High Street / Coliseum Way	Signal	C	24.1	D	48.0
16	International Blvd / 34th Avenue	Signal	A	7.2	A	6.9
17	East 12th Street / 36th Avenue	All-way stop	A	9.9	A	9.7
18	Fruitvale Ave. / East 12th St. (south)[b]	Signal	A	3.3	A	4.7

[a] Delay = Average vehicle delay in seconds
[b] The Fruitvale Avenue / East 12th Street intersection is analyzed as two separate intersections because the eastbound right-turn movement is signal controlled and operate independently from other movements.
[c] At one-way stop controlled intersection, the LOS and average vehicle delay for the worst approach are shown in parentheses ().

SOURCE: Dowling Associates, 2009.

TABLE 4.3-6
EXISTING FREEWAY MAINLINE LEVEL OF SERVICE (LOS)

Location	AM Peak Hour			PM Peak Hour		
	Volume	Density[a]	LOS	Volume	Density[a]	LOS
Northbound I-880						
South of High Street	7,118	24.8	C	7,474	26.1	D
Between 42nd Avenue / 29th Avenue	7,230	38.0	E	7,324	38.7	E
North of Fruitvale Avenue	7,574	40.8	E	7,231	38.0	E
Southbound I-880						
North of Fruitvale Avenue	7,074	36.8	E	7,583	40.9	E
South of High Street	7,117	32.8	D	6,863	31.0	D

[a] Density = passenger cars per mile per lane

SOURCE: Dowling Associates, 2009.

average speed less than 30 mph is assigned LOS F. Freeway interchanges with speeds below 50 percent of free flow speed are assigned LOS F.

The ACCMA monitoring report indicates that there are no deficient (LOS F) freeway or major road segments within the study area for this project with an LOS F. For information purposes, and to comply with ACCMA evaluation and reporting requirements, conditions beyond the immediate study area for this project are also presented herein (2008 monitoring results are presented below, and evaluation of conditions in 2015 and 2035, using analysis methods prescribed by the ACCMA, are presented on pages 4.3-52 to 4.3-60).

The travel time surveys concluded that 35 freeway segments within Alameda County operate at LOS F during the PM peak hours, including the following nine freeway segments in the City of Oakland:

- I-80 eastbound: Toll Plaza to I-580 southbound merge (PM Peak Hour);
- I-80 westbound: I-580 split to toll plaza (AM Peak Hour);
- I-80 westbound: toll plaza to San Francisco county line (AM Peak Hour);
- I-580 eastbound: I-80 to I-980 (PM Peak Hour);
- I-580 eastbound: Harrison Street to Lakeshore Drive (PM Peak Hour);
- I-580 westbound: SR 13 off-ramp to Fruitvale Avenue (AM Peak Hour);
- I-580 westbound: SR 24 on-ramp to I-80 / I-580 split (AM Peak Hour);
- I-880 southbound: Hegenberger Road to SR 112 (PM Peak Hour);
- SR 13 southbound: Redwood Road to I-580 eastbound merge (PM Peak Hour);
- SR 24 eastbound: I-580 to Broadway / SR 13 (PM Peak Hour);
- SR 24 eastbound: Broadway / SR 13 to Caldecott tunnel (AM and PM Peak Hours);
- SR 13 / SR 24 Interchange: SR 13 northbound to SR 24 eastbound (AM and PM Peak Hours); and
- I-880 / SR 260 Connection: SR 260 eastbound to I-880 northbound (AM and PM Peak Hours).

Five of these segments (I-580 eastbound from I-80 to I-980; I-880 southbound from Hegenberger Road to SR 112; SR 24 eastbound from I-580 to Broadway / SR 13; SR 24 from Broadway / SR 13 to the Caldecott tunnel; and the SR 13 / SR 24 Interchange from SR 13 northbound to SR 24 eastbound) operated at LOS F during the initial ACCMA data collection effort in 1991, and are therefore "grandfathered," meaning that they are exempt from LOS standards.

Existing Freeway Interchange Operations

Three freeway interchange locations were selected for evaluation. Existing volumes at the freeway weaving and merge areas were obtained from Caltrans. The results, shown in **Table 4.3-7**, indicate that the weave area between the Fruitvale Avenue / 29th Street on-ramp and the 23rd Avenue off-ramp in the northbound direction operate at LOS F during both peak hours, and the weave area between the 29th Avenue on-ramp and Fruitvale Avenue off-ramp in the southbound direction operates at LOS E and LOS F in the AM and PM peak hours, respectively.

TABLE 4.3-7
EXISTING FREEWAY INTERCHANGE LEVEL OF SERVICE (LOS)

Location	Analysis Type[a]	AM Peak Hour		PM Peak Hour	
		Ramp or Weaving Volume	LOS	Ramp or Weaving Volume	LOS
Interstate 880					
Northbound Off-ramp to High Street	Diverge	787	C	1,031	D
Northbound On-ramp from 42nd Avenue	Merge	899	D	881	D
Northbound Weave between Fruitvale/29th Avenues on-ramp and 23rd Ave off-ramp	Weave	1,249	F	1,218	F
Southbound Weave between 29th Avenue on-ramp and Fruitvale Avenue off-ramp	Weave	740	E	1,130	F
Southbound On-ramp from High Street	Merge	1,239	D	904	D

[a] Weave analysis is based on Leisch method, and merging analysis based on HCM2000.

SOURCE: Dowling Associates, Inc., 2009.

Collision Characteristics

Collision data was gathered for major roadways in the project's vicinity for the area bordered by International Boulevard, Fruitvale Avenue, San Leandro Street and 39th Avenue. This data contained all reported collisions occurring from October 1, 2005 to September 30, 2008, during which a total of 258 collisions were reported. Approximately 221 (86 percent) of the collisions were intersection-related and 37 (14 percent) were mid-block collisions. There were 82 people injured and one killed as a result of those collisions.

Collision Locations

Intersections. Generally, intersection-related collisions differ from those of mid-block collisions in terms of primary factors and potential solutions to reduce the numbers of collisions. Reporting officers on the scene of the crash determined whether or not a collision was intersection-related. The highest number of collisions occurred at intersections along International Boulevard, with a total of 152 (69 percent of the total intersection collisions). The highest number of collisions at a single intersection was found at Fruitvale Avenue and International Boulevard, with a total of 35 of the 221 reported intersection collisions (16 percent). Data for vehicle-vehicle, vehicle-bicycle, and vehicle-pedestrian collisions are summarized in tables and figures provided in the background Transportation Analysis (**Appendix E.1** of this DEIR).

Mid-Block Locations. Mid-block collisions are organized by the primary road on which the collisions occurred and the closest intersection. The highest number of mid-block collisions was found on International Boulevard, with 15 of the 37 reported collisions (41 percent); five occurred in proximity to Fruitvale Avenue.

Collision Types

The distribution of collisions based on the transportation mode indicates that overall, 17 (7 percent) of motor-vehicle collisions involved pedestrians, 6 (2 percent) involved bicycles, 23 (9 percent) involved parked vehicles, 14 (5 percent) involved fixed objects, and the remaining 198 (77 percent) involved motor vehicles only.

Pedestrian-Motor Vehicle. Of the 17 reported collisions involving pedestrians, 14 resulted in injuries to 17 people and one collision resulted in a death. Pedestrian right-of-way violations (59 percent) and pedestrian violations (12 percent) were the most common primary collision factors. The majority (82 percent) of pedestrian-motor vehicle collisions occurred at intersections along International Boulevard. Most collisions occurred between 8:00 AM and 11:00 PM, with the majority occurring after noon.

Bicycle-Motor Vehicle. Of the six reported collisions involving bicycles, five occurred between 4:00 PM and 8:00 PM. Wrong side of the road was cited as the most common primary collision factor (50 percent).

Parked Vehicle-Motor Vehicle. Of the 23 reported collisions involving parked vehicles, improper turning was cited as the most common and primary collision factor (61 percent). Parked vehicle collisions occurred most frequently around International Boulevard near 33rd Avenue, Fruitvale Avenue, and 38th Avenue. Most collisions occurred between 8:00 AM and 10:30 PM.

Fixed Object-Motor Vehicle. Of the 14 reported collisions involving fixed objects, improper turning was the most common and primary collision factor (71 percent). Fixed object collisions occurred most frequently at locations around International Boulevard. About half of the collisions occurred between midnight and 5:00 AM, and ten (71 percent) occurred during times of day with dark or dusky lighting conditions.

Motor-Vehicle Only. Of the 198 reported collisions involving only motor vehicles, 173 (87 percent) occurred at intersections. The three most common contributing factors for motor-vehicle-only collisions were unsafe speed, automobile right-of-way violations, and improper turning. About two-thirds of the intersection-related collisions occurred at or near International Boulevard; at its intersection with Fruitvale Avenue having the highest number of collisions (29), followed by its intersection with 35th Avenue (23) and 38th Avenue (17). Twenty-five motor vehicle-only collisions occurred in mid-block locations. It was found that almost half of motor vehicle collisions occurred on International Boulevard (12) with the highest number of collisions at or near Fruitvale Avenue (4) and 35th Avenue (3). Fruitvale Avenue had a total of five mid-block collisions, with three at or near East 12th Street.

Rail Crossings

There are three at-grade rail crossing locations in the general vicinity of the proposed project:

- Fruitvale Avenue;
- 37th Avenue; and
- High Street.

All three crossings have signage that is consistent with California MUTCD recommendations and have automated arm gates.

Based on the Statewide Integrated Traffic Record System (SWITRS) data provided by the City of Oakland, there were 22 collisions reported over the ten-year period between October 1, 1998 and September 30, 2008, within roughly 100 feet of the at-grade railroad track crossings on Fruitvale Avenue, East 9th Street / 37th Avenue, and High Street in the study area. Two of the collisions involved a motor vehicle and a train, and both of these collisions occurred during daylight hours at the High Street railroad crossing. Traffic signals and signs were cited as the primary collision factor. One collision took place in 1999, which resulted in a death, while the other was in 2006 with no injuries or deaths.

The three most common factors for collisions at or near the railroad tracks were improper turning, unsafe speed, and unsafe starting and backing up. Detailed rail crossing data is provided in the Transportation Impact Analysis prepared for this proposed project (see **Appendix E.1** of this DEIR).

Additional data were obtained from the California Public Utility Commission for train-related collisions that occurred after September 2008. Three additional motor vehicle-train collisions occurred at the Fruitvale Avenue crossing, one when a motorist allegedly drove a vehicle around or through the crossing gate and the vehicle was hit by a passenger train on the northbound direction (the motorist fled the scene in the vehicle and the injury status of the driver is unknown), and one when a pickup truck was hit by a northbound passenger train when it was unable to clear the track in congested traffic (the driver was not injured). The latest collision occurred on December 1, 2009 when a motorist drove his vehicle around the crossing gate and the vehicle was hit by a passenger train on the northbound direction (the motorist was killed in the collision).

4.3.2 Applicable Plans and Policies[2]

Regional Plans and Policies and Other Regulations

The project is reviewed for compliance with the following regional plans and policies:

- AC Transit Short-Range Transit Plan
- BART Strategic Plan

AC Transit Short-Range Transit Plan and Strategic Vision

AC Transit, the provider of bus transit service in the project study area, has established goals related to transit service. These goals are documented in its *Short Range Transit Plan – Fiscal Year (FY) 2003 to FY 2012* (AC Transit, 2003). Relevant major goals of AC Transit include:

[2] Other sections of this DEIR address the regulatory framework. However, when addressing traffic issues, the regulatory framework determines the existing setting. As a result, in this section only, "applicable plans and policies" replaces the "regulatory framework" identified in other sections of Chapter 4.

- *Goal 1*: Provide High Quality, Useful Transit Service for Customers in the East Bay.
- *Goal 4*: Plan and Advocate for the Funding and Implementation of Future Projects.
  - Work with City and Local agencies to make transit usage as safe, secure, reliable, and quick as possible and to promote transit usage in the planning process.
  - Promote "Transit First" development practices and increased funding for transit through transit mitigation funding for new developments.

AC Transit has also established a *Strategic Vision* to provide fast, frequent, reliable service on a wide variety of routes with attractive vehicles and an easy-to-use, affordable fare structure (AC Transit, 2002). Key elements of the AC Transit *Strategic Vision* include: increased frequency of buses to reduce wait time; greater frequency of service during midday, evening and owl travel times; an easy-to-use, integrated fare system; flexible routes; adequate around-the-clock service; a redesigned network that matches travel patterns and helps meet demand in the high-density urban core; gradual transition to "Bus Rapid Transit" in the highest ridership corridors; and bus stop improvements including realtime display of arrival times.

BART Strategic Plan

BART, the provider of rail transit service in the project study area, has established strategies, projects and programs related to transit service. These goals are documented in the BART Strategic Plan, adopted in October 2008. Some of the relevant elements of the BART Strategic Plan include:

- *Station Access Strategy*: Develop alliances with our transit partners and the community to maximize connectivity and to facilitate multi-modal access including transit, bicycling and walking.
- *Projects and Programs*: Station Access Program: Develop a package of programs and projects to improve access to our stations by modes other than single occupant vehicles.
- *Station Wayfinding Program*: Implement wayfinding signage to and from BART station and within the station, to aid the customer in navigating the BART system and in making connections to other transit and local destinations.
- *Partnerships for Financial Health Strategy*: Protect the Bay Area's investment in rail transit through long-term capital planning, strategic partnerships and outreach with elected and community leaders, the media and the public.
- *Projects and Programs: Employer Transit Forum*: Recognize and cultivate a closer relationship with the employers we serve.

Local Plans and Policies

This project is reviewed for compliance with the following local plans:

- General Plan LUTE
- City of Oakland Pedestrian Master Plan

- City of Oakland Bicycle Master Plan
- City of Oakland Bicycle Parking Ordinance
- City of Oakland Standard Conditions of Approval

City of Oakland General Plan LUTE

The Oakland General Plan is comprised of numerous elements, and those containing policies relevant to transportation resources primarily are contained in the LUTE. The goals and policies contained in the various General Plan Elements are often competing. In reviewing a project for conformity with the General Plan, the City is required to 'balance' the competing goals and policies. Case law has determined that a project "need not be in perfect conformity with each and every policy" and that "no project could completely satisfy every policy stated in the General Plan, and that state law does not impose such a requirement" (*Sequoyah Hills Homeowners Association v. City of Oakland*, 1993).

The following polices regarding alternative transportation modes are included in the LUTE:

> *LUTE Policy Framework*. Encouraging Alternative Means of Transportation. A key challenge for Oakland is to encourage commuters to carpool or use alternative modes of transportation, including bicycling or walking. The Policy Framework proposes that congestion be lessened by promoting alternative means of transportation, such as transit, biking, and walking, providing facilities that support alternative modes, and implementing street improvements. The City will continue to work closely with local and regional transit providers to increase accessibility to transit and improve intermodal transportation connections and facilities. Additionally, policies support the introduction of light rail and trolley buses along appropriate arterials in heavily traveled corridors, and expanded use of ferries in the bay and estuary.
>
> *Policy T3.5, Including Bikeways and Pedestrian Walks*. The City should include bikeways and pedestrian walks in the planning of new, reconstructed, or realized streets, wherever possible.
>
> *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.

City of Oakland Pedestrian Master Plan

In November 2002, the Pedestrian Master Plan (PMP) was adopted by the City Council and incorporated into the General Plan. The PMP identifies policies and implementation measures that promote a walkable City. In the study area, the PMP designates a Pedestrian Route Network throughout Oakland and identifies a "City Route" on Fruitvale Avenue, International Boulevard and San Leandro Street, and a "District Route" on 35th Avenue, 38th Avenue and 42nd Avenue, north of International Boulevard and a "Neighborhood Route" on East 8th Street between Fruitvale Avenue and High Street.

The *PMP* includes the following relevant policies and actions:

Policy 1.1. Crossing Safety: Improve pedestrian crossings in areas of high pedestrian activity where safety is an issue.

Action 1.1.1. Consider the full range of design elements – including bulbouts and refuge islands – to improve pedestrian safety.

Policy 1.2: Traffic Signals: Use traffic signals and their associated features to improve pedestrian safety at dangerous intersections.

Action 1.2.7. Consider using crossing enhancement technologies like countdown pedestrian signals at the highest pedestrian volume locations.

Policy 1.3. Sidewalk Safety: Strive to maintain a complete sidewalk network free of broken or missing sidewalks or curb ramps.

Action 1.3.7. Conduct a survey of all street intersections to identify corners with missing, damaged, or non-compliant curb ramps and create a plan for completing their installation.

Policy 2.1: Route Network: Create and maintain a pedestrian route network that provides direct connections between activity centers.

Action 2.1.8. To the maximum extent possible, make walkway accessible to people with physical disabilities.

Policy 2.3: Safe Routes to Transit: Implement pedestrian improvements along major AC Transit lines and at BART stations to strengthen connections to transit.

Action 2.3.1. Develop and implement street designs (like bus bulbouts) that improve pedestrian/bus connections.

Action 2.3.3. Prioritize the implementation of street furniture (including bus shelters) at the most heavily used transit stops.

Action 2.3.4. Improve pedestrian wayfinding by providing local area maps and directional signage at major AC Transit stops and BART stations.

Policy 3.2. Land Use: Promote land uses and site designs that make walking convenient and enjoyable.

Action 3.2.4. Require contractors to provide safe, convenient, and accessible pedestrian rights-of-way along construction sites that require sidewalk closure.

Action 3.2.8. Discourage motor vehicle parking facilities that create blank walls, unscreened edges along sidewalks, and/or gaps between sidewalks and building entrances.

City of Oakland Bicycle Master Plan

The Oakland City Council adopted the Oakland Bicycle Master Plan Update in December 2007. The adopted plan includes the following policies and supporting actions that are applicable to the proposed project:

Policy 1A: Bikeway Network: Develop and improve Oakland's bikeway network.

Action 1A.1 – Bicycle Lanes (Class 2): Install bicycle lanes where feasible as the preferred bikeway type for all streets on the proposed bikeway network (except for the bicycle boulevards proposed for local streets with low traffic volumes and speeds).

Action 1A.3 – Bicycle Boulevards (Class 3B): Enhance bicycle routes on local streets by developing bicycle boulevards with signage, striping, and intersection modifications to prioritize bicycle travel.

Action 1A.6 – Dedicated Right Turn Lanes and "Slip Turns": Where feasible, avoid the use of dedicated right turn lanes on streets included in the bikeway network. Where infeasible, consider a bicycle through lane to the left of the turn lane or a combined bicycle lane/right turn lane.

Policy 1B: Routine Accommodation: Address bicycle safety and access in the design and maintenance of all streets.

Action 1B.2 – Traffic Signals: Include bicycle-sensitive detectors, bicycle detector pavement markings, and adequate yellow time for cyclists with all new traffic signals and in the modernization of all existing signals.

Policy 1C – Safe Routes to Transit: Improve bicycle access to transit, bicycle parking at transit facilities, and bicycle access on transit vehicles.

Action 1C.1 – Bikeways to Transit Stations: Prioritize bicycle access to major transit facilities from four directions, integrating bicycle access into the station design and connecting the station to the surrounding neighborhoods.

Policy 1D – Parking and Support Facilities: Promote secure and conveniently located bicycle parking at destinations throughout Oakland.

Action 1D.6 – Bicycle Parking Ordinance: Adopt an ordinance as part of the City's Planning Code that would require new development to include short and long-term bicycle parking.

Action 1D.7 – Development Incentives: Consider reduced automobile parking requirements in exchange for bicycle facilities as part of transportation demand management strategies in new development.

City of Oakland Bicycle Parking Ordinance

The Oakland City Council adopted a Bicycle Parking Ordinance in 2008. The ordinance is contained in Municipal Code Chapter 17.117, and requires new development to provide both short-term (i.e., bicycle racks) and long-term bicycle parking (i.e., lockers or indoor storage) for bicycles. As a multi-family development, without private garages, one long-term bicycle parking

space would be required for each four dwelling units, and one short-term bicycle parking space would be required for each 20 dwelling units.

City of Oakland Standard Conditions of Approval and Uniformly Applied Development Standards Imposed as Standard Conditions of Approval

The City's Standard Conditions of Approval relevant for transportation, circulation, and parking are listed below for reference. If the proposed project is approved by the City, then all applicable Standard Conditions of Approval would be adopted as conditions of approval and required of the project to help ensure less-than-significant impacts to transportation, circulation, and parking. The Standard Conditions of Approval are incorporated and would be required as part of the proposed project, so they are not listed as mitigation measures. Standard Conditions of Approval applicable to potential transportation, circulation, and parking impacts due to the project include:

TRANS-1: Construction Traffic and Parking

Prior to the issuance of a demolition, grading or building permit. The project applicant and construction contractor shall meet with appropriate City of Oakland agencies to determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion and the effects of parking demand by construction workers during construction of this project and other nearby projects that could be simultaneously under construction. The project applicant shall develop a construction management plan for review and approval by the Planning and Zoning Division, the Building Services Division, and the Transportation Services Division. The plan shall include at least the following items and requirements:

a. A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes.

b. Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur.

c. Location of construction staging areas for materials, equipment, and vehicles at an approved location.

d. A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an on-site complaint manager. The manager shall determine the cause of the complaints and shall take prompt action to correct the problem. Planning and Zoning shall be informed who the Manager is prior to the issuance of the first permit issued by Building Services.

e. Provision for accommodation of pedestrian flow.

Major Project Cases:

a. Provision for parking management and spaces for all construction workers to ensure that construction workers do not park in on-street spaces.

b. Any damage to the street caused by heavy equipment, or as a result of this construction, shall be repaired, at the applicant's expense, within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to issuance of a final inspection of the building permit. All damage that is a threat to public health or safety shall be repaired

immediately. The street shall be restored to its condition prior to the new construction as established by the City Building Inspector and/or photo documentation, at the applicant's expense, before the issuance of a Certificate of Occupancy.

c. Any heavy equipment brought to the construction site shall be transported by truck, where feasible.

d. No materials or equipment shall be stored on the traveled roadway at any time.

e. Prior to construction, a portable toilet facility and a debris box shall be installed on the site, and properly maintained through project completion.

f. All equipment shall be equipped with mufflers.

g. Prior to the end of each work day during construction, the contractor or contractors shall pick up and properly dispose of all litter resulting from or related to the project, whether located on the property, within the public rights-of-way, or properties of adjacent or nearby neighbors.

4.3.3 Project Transportation Characteristics

Project Description

The proposed project is expected to be completed over the course of approximately four years (tentatively scheduled to be constructed between 2011–2015). To provide a conservative assessment of project impacts, the analysis considers impacts under buildout conditions for all project scenarios. The detailed project description is provided in Chapter 3, Project Description, with the site plans (see Figure 3-1).

Project Trip Generation

Project trip generation refers to the process for estimating the amount of vehicular traffic a project would add to the surrounding roadway system. First, estimates of the total amount of traffic entering and exiting the project driveways are calculated for an average weekday. Separate estimates are created for the peak one-hour period during the morning and evening commute periods when traffic volumes on the surrounding streets are highest.

The trip generation was estimated using Institute of Transportation Engineers' (ITE's) average trip rates for Residential Condominium/Townhouse (Code 230) (ITE, 2008). The standard ITE rates are based primarily on suburban development where almost all trips are made by automobile.

The project's trip generation was adjusted to account for the nature of transit-oriented development (TOD) and its urban location where some trips are made by transit, bike, or on foot. The peak-hour mode choice adjustment for residential trips was determined to be 24 percent to include transit, bike, and walk modes. The adjustment was based on the ACCMA travel demand model for residential uses in the traffic analysis zone (TAZ) where the project is located and supported by TOD research[3] and U.S. Census journey-to-work information. The ACCMA model indicates that

[3] Transportation Research Board, Transit Cooperative Research Program (TCRP) Report 128, Arrington, G.B., Robert Cerero, PhD, et al., *Effects of TOD on Housing, Parking and Travel*, 2008.

20 percent of the work-related trips from the project area are made by transit, 2 percent by bicycle and 4 percent on foot. Approximately 13 percent of all trips are made by transit, 2 percent by bicycle and 13 percent on foot. The adjusted trip generation for the project is shown in **Table 4.3-8**. The proposed project would generate an estimated 1,179 daily trips, 88 AM peak-hour trips, and 105 PM peak-hour trips. **Figure 4.3-3** shows the traffic volumes at the study intersections that can be attributed to the project.

TABLE 4.3-8
ESTIMATED PROJECT VEHICLE TRIP GENERATION

Land Use	Size	Units	Daily	AM Peak Total	AM Peak In	AM Peak Out	PM Peak Total	PM Peak In	PM Peak Out
Trip Generation Rates									
Residential Condo/Townhouse	1	DU	5.64	0.42	0.07	0.35	0.50	0.34	0.17
Trip Generation									
Residential Condo/Townhouse	275	DU	1551	116	20	96	138	92	45
Mode Adjustment (-24%)			-372	-28	-5	-23	-33	-22	-11
TOTAL PROJECT TRIPS			**1,179**	**88**	**15**	**73**	**105**	**70**	**34**

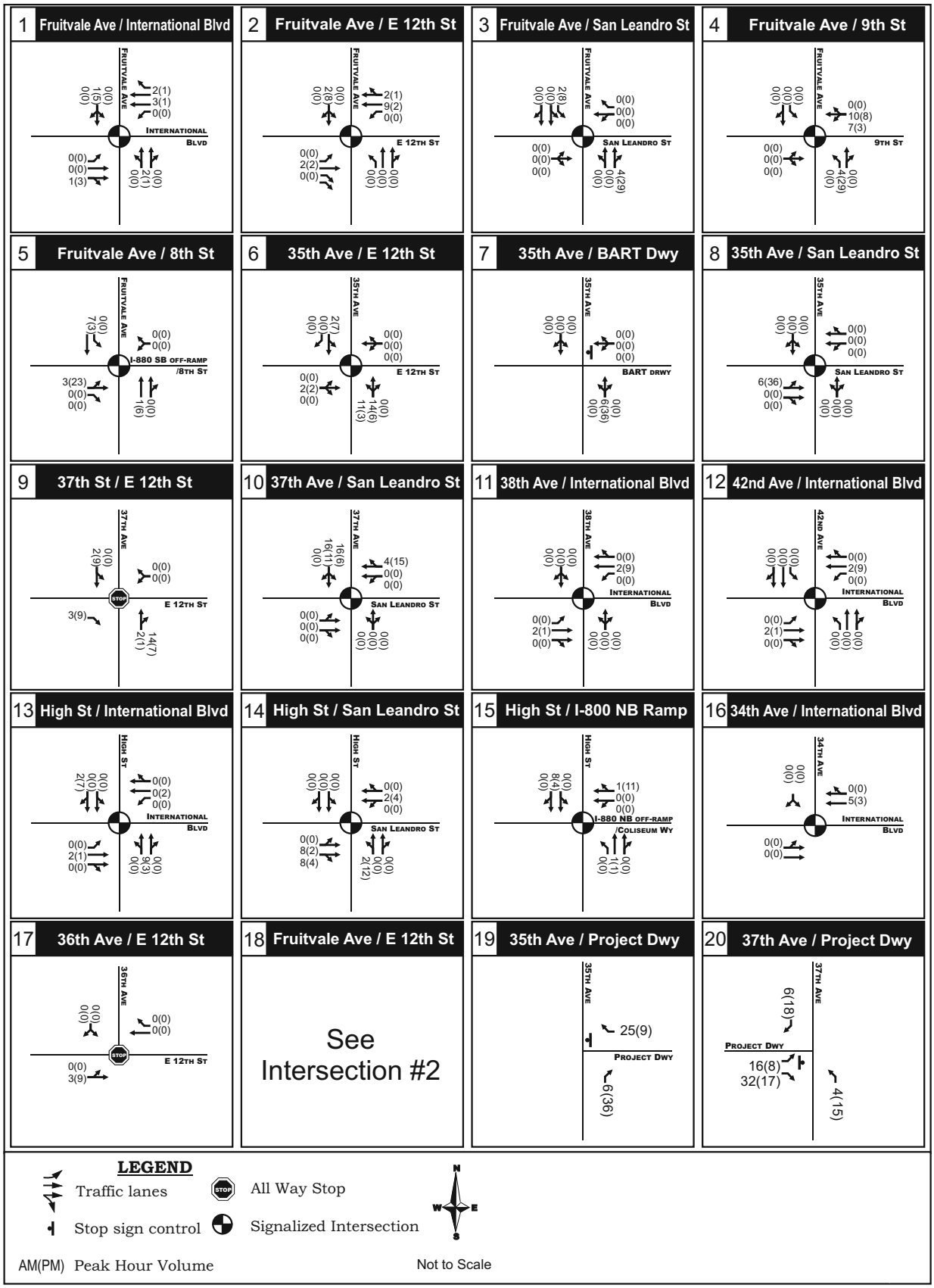
NOTES: DU = dwelling units

SOURCE: Dowling Associates, Inc, 2009, based on ITE, *Trip Generation*, 8th Edition.

With the exception of the surface parking lot driveway at East 12th Street / 36th Avenue, no adjustment was made to the existing background levels of traffic to account for the vehicles that would be displaced from the existing parking lot if the project is constructed. However, all trips coming in and out of the East 12th Street driveway related to the parking lot were removed for analysis under the "with project" scenarios.

Trip Distribution and Assignment

The distribution pattern of project generated trips was derived from the ACCMA model, existing travel patterns and proposed access points associated with the proposed project. The model zone within which the project is located was isolated and its peak-hour trips were assigned to the network. From this selected zone assignment, the distribution of inbound and outbound trips was estimated. Local gateways based on the analysis intersections were identified and used to describe where project trips would be distributed. These gateways, along with the corresponding trip distribution percentages that were applied to the AM and PM peak-hour trips for the project land use and the project trips to and from these gateways, are shown in **Figure 4.3-4**. The project trips were assigned to the surrounding roadways based on existing travel patterns in the area. Distance and existing roadway conditions were also considered.

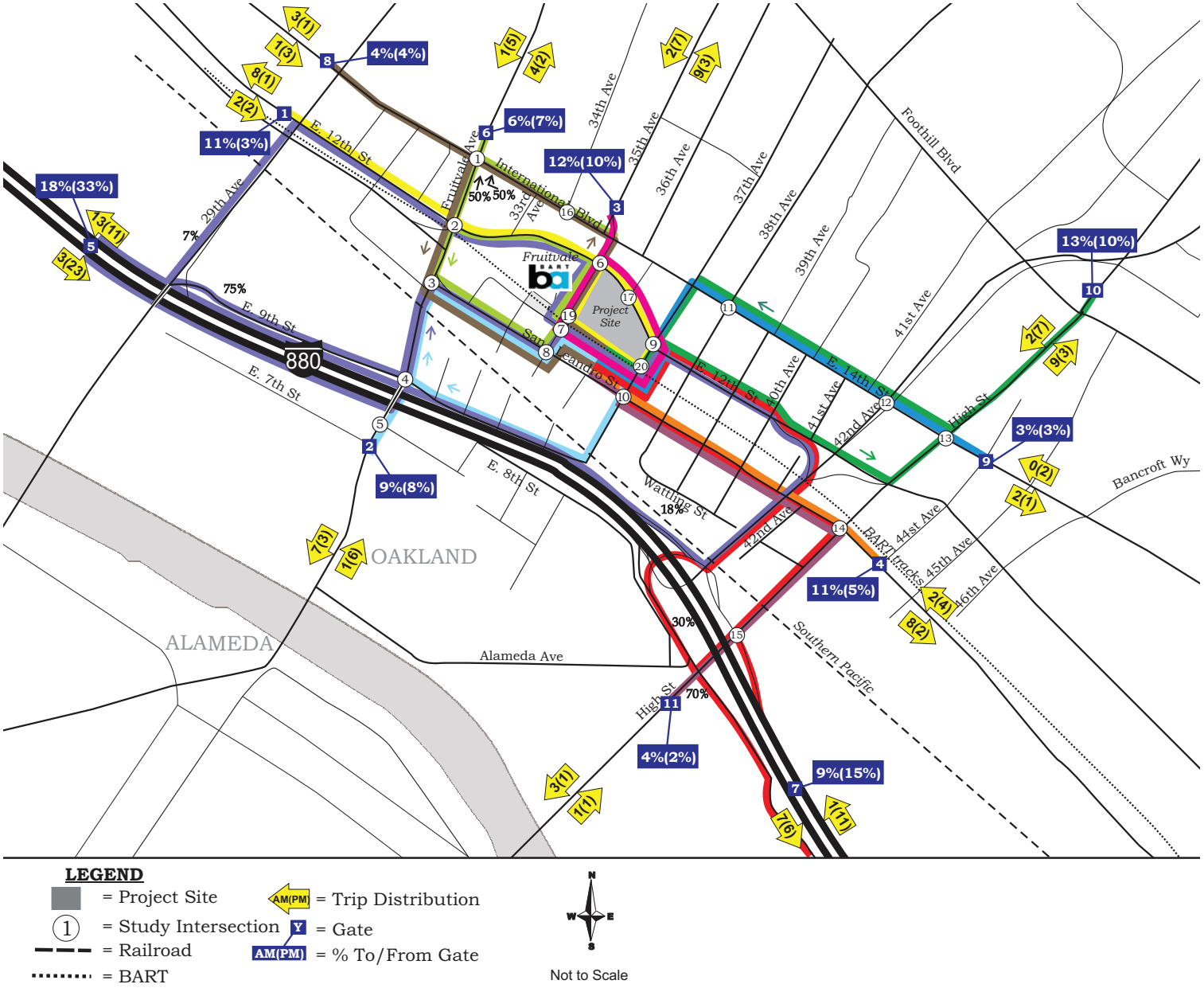


Fruitvale Transit Village Phase 2 . 208475

SOURCE: Dowling Associates, Inc.

Figure 4.3-3

Project Generated Traffic Volumes



SOURCE: Dowling Associates, Inc.

Fruitvale Transit Village Phase 2 . 208475

Figure 4.3-4

Distribution and Assignment

Parking Generation

Parking demand for the proposed project was estimated based on data from ITE's *Parking Generation* (3rd Edition). The parking data were primarily based on suburban sites with a demand range of 1.04 to 1.96 vehicles per dwelling unit. The single urban site published in the ITE data has a parking demand of 0.85 vehicles per dwelling units. ITE acknowledges that parking demand at urban sites differs from that at suburban sites. Based on the above rates, it is reasonable to estimate that the proposed 275 dwelling units, which are located in a designated Transit Oriented Development Zone (S-15), would generate a parking demand in the range of 234 parking spaces (based on the urban survey site) to 286 parking spaces (based on the low end of suburban data).

Site Access and Circulation

Vehicular access to and from the project site would be provided from 35th Avenue and 37th Avenue via a private alley along the southern edge of the site (see Figure 3-3, Project Description). The alley would allow emergency vehicles access to the south side of the development. Pedestrian access would be provided along East 12th Street at 36th Avenue and at 37th Avenue, and along 35th Avenue at East 12th Street and from the alley.

The on-site parking garage would be accessible via the private two-way alley along the southern border of the project site from both 35th Avenue and 37th Avenue. There would be two garage access driveways. The eastern driveway, located about 260 feet from 37th Avenue would provide access to the upper garage levels. The western driveway, located about 140 feet from 35th Avenue would provide access to 41 ground level parking spaces.

4.3.4 Impacts and Mitigation Measures

This section evaluates the project's potential adverse effects related to transportation, circulation and parking, and it considers vehicles, bicycles and pedestrians. As described on page 4.3-1, traffic impacts associated with the project are assessed at 20 intersections in the study area in the context of Existing, 2015 and 2035 conditions.

Following the intersection analysis, the project's potential effects on freeway operations; construction; vehicle, pedestrian and bicycle safety; emergency access; and consistence with local plans is presented. An assessment of non-CEQA issues, i.e., planning issues that do not constitute physical environmental impacts under CEQA, such as parking and transit, is also provided.

Significance Criteria

Transportation-Related Impacts

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

1. Cause an increase in traffic which is substantial in relation to the traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio (v/c) on roads, or congestion at intersections), or change

the condition of an existing street (e.g., street closures, changing direction of travel) in a manner that would substantially impact access or traffic load and capacity of the street system, as defined below:

- at a study, signalized intersection which is located *outside the Downtown*[4] area, the project would cause the LOS to degrade to worse than LOS D (i.e., LOS E);
- at a study, signalized intersection which is located *within the Downtown* area, the project would cause the LOS to degrade to worse than LOS E (i.e., LOS F);
- at a study, signalized intersection *outside the Downtown* area where the level of service is LOS E, the project would cause the total intersection average vehicle delay to increase by four or more seconds, or degrade to worse than LOS E (i.e., LOS F);
- at a study, signalized intersection for *all areas* where the level of service is LOS E, the project would cause an increase in the average delay for any of the critical movements of six seconds or more, or degrade to worse than LOS E (i.e., LOS F);
- at a study, signalized intersection for *all areas* where the level of service is LOS F, the project would cause
  - The total intersection average vehicle delay to increase by two or more seconds, or
  - An increase in average delay for any of the critical movements of four seconds or more; or
  - The v/c ratio to increase by three percent (but only if the delay values cannot be measured accurately);
- at a study, unsignalized intersection for all areas, the project would add ten or more vehicles and after project completion satisfy the Caltrans peak-hour volume warrant;
- a project's contribution to cumulative impacts is considered "considerable" (i.e., significant) when the project exceeds at least one of the intersection-related thresholds listed above for years 2015 or 2035

2. Cause a roadway segment on the Metropolitan Transportation System to operate at LOS F or increase the v/c ratio by more than three percent for a roadway segment that would operate at LOS F without the project (for a Congestion Management Program [CMP] required analysis [i.e., projects that generate 100 or more PM peak-hour trips]);

3. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;

4. Substantially increase traffic hazards to motor vehicles, bicycles, or pedestrians due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

[4] Downtown is defined in the LUTE 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. None of the study intersections are located in the Downtown area.

5. Result in fewer 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;

6. Fundamentally conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle routes, pedestrian safety); or

7. Have a significant, though temporary, impact on the environment caused by construction traffic from the project, or if project construction would substantially affect traffic flow and circulation, parking, and pedestrian safety.

Traffic Control Devices

This transportation analysis evaluates the need for additional traffic control devices (e.g., traffic signals at intersections that are currently unsignalized) using the Caltrans *Manual on Uniform Traffic Control Devices* and applicable City standards.

Existing With Project Intersection Analysis

This section analyzes the transportation system with trips associated with the full buildout of the proposed project added to the existing traffic counts. Because the project buildout is expected to be completed no sooner than 2014, this analysis is presented for information only. This analysis presents the extent of project impacts relative to existing conditions.

Traffic Volumes

The traffic volumes for the Existing With Project scenario are provided in the background Transportation Analysis (**Appendix E.1** of this EIR). They include existing traffic volumes plus net added traffic volumes generated by the project.

Roadway Network

No roadway improvements were identified or assumed under Existing With Project conditions. The project access resulting intersections would be minor street stop controlled. No adjustments were made to optimize the traffic signal timings at the study intersections.

Existing With Project Intersection Operations

Intersection LOS calculations were completed with the traffic volumes and the existing lane configurations. As shown in **Table 4.3-9**, with the addition the proposed project, all study intersection would operate at acceptable levels of service during both AM and PM peak hours, except the signalized intersection of Fruitvale Avenue and East 9th Street, which would continue to operate at an unacceptable LOS E in the PM peak hour. Project traffic would cause the delay of the critical eastbound through movement to increase by more than six seconds (a significant impact).

TABLE 4.3-9
EXISTING WITH PROJECT INTERSECTION LEVEL OF SERVICE (LOS) SUMMARY

Intersection	Traffic Control	Existing				Existing with Project			
		AM Peak		PM Peak		AM Peak		PM Peak	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1 Fruitvale Ave & International Blvd	Signal	B	17.3	B	17.3	B	17.3	B	17.3
2 Fruitvale Ave & E 12th St (north)[a]	Signal	C	22.7	C	24.1	C	22.8	C	24.2
3 Fruitvale Ave & San Leandro St	Signal	C	21.7	C	26.1	C	21.7	C	26.3
4 Fruitvale Ave & East 9th St	Signal	D	44.7	E	70.1	D	46.2	E	70.7
Eastbound through					84.4				***90.6***
Mitigated (Modify Signal)									*88.1*
5 Fruitvale Ave & East 8th St	Signal	C	20.3	C	22.1	C	20.2	C	22.2
6 35th Ave & East 12th St	Signal	B	12.4	C	24.9	B	12.4	C	25.3
7 35th Ave & BART Access[b]	One-way stop	A (A)	1.2 (9.9)	A (B)	1.4 (13.5)	A (B)	1.2 (10)	A (B)	1.3 (13.9)
8 San Leandro St & 35th Ave	Signal	A	9.6	B	11.5	A	9.1	B	11.5
9 37th Ave & East 12th St	All-way stop	A	9.8	B	11.3	A	9.9	B	11.6
10 San Leandro St & 37th Ave	Signal	A	9.1	B	12.6	A	10.5	B	15.7
11 International Blvd & 38th Ave	Signal	B	11.5	A	7.4	B	11.6	A	7.4
12 International Blvd & 42nd Ave	Signal	D	50.8	D	53.3	D	50.8	D	53.3
13 International Blvd & High St	Signal	C	22.4	C	22.7	C	22.7	C	22.9
14 San Leandro St & High St	Signal	B	17.1	B	18.8	B	17.2	B	19.0
15 High St & Coliseum Way	Signal	C	24.1	D	48.0	C	24.2	D	49.8
16 International Blvd & 34th Ave	Signal	A	7.2	A	6.9	A	7.2	A	6.9
17 East 12th St & 36th Ave	Stop[c]	A	9.9	A	9.7	A	2.1	A	2.2
18 Fruitvale Ave & E 12th St (south)[a]	Signal	A	3.3	A	4.7	A	3.3	A	4.7
19 35th Ave & Project Driveway	One-way stop	N/A	N/A	N/A	N/A	A (A)	1.0 (9.7)	A (B)	0.3 (10.0)
20 37th Ave & Project Driveway	One-way stop	N/A	N/A	N/A	N/A	A (A)	1.5 (9.7)	A (A)	1.0 (9.7)

Delay = Average vehicle delay in seconds

Bold denotes a significant impact.

Critical movement delay is provided when it is needed to determine significance of impact; delay values for critical movements not relevant to impact determination are shown in the background Transportation Impact Analysis (**Appendix E.1** of this DEIR).

[a] The Fruitvale Avenue / East 12th Street intersection is analyzed as two separate intersections because the eastbound right-turn movement is signal controlled and operate independently from other movements.
[b] At one-way stop controlled intersection, the LOS and average vehicle delay for the worst approach are shown in parentheses ().
[c] The East 12th Street / 36th Avenue intersection has all-way stop control under No Project conditions and has one-way stop at 36th Avenue under project conditions.

SOURCE: Dowling Associates, 2009.

Existing With Project Impacts and Mitigations

Impact TRANS-1: Buildout of the proposed project would cause an increase in the average delay by more than six seconds during the PM peak hour for the critical eastbound (East 9th Street) through movement at *Intersection #4 Fruitvale Avenue / East 9th Street,* which currently operates at an unacceptable LOS E. (Significant)

Mitigation Measure TRANS-1: Modify the PM peak hour signal timing at the intersection of Fruitvale Avenue / East 9th Street to increase the green time for the eastbound and westbound (East 9th Street) approaches and decrease the green time for the northbound and southbound (Fruitvale Avenue) through movements.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below:
  - 2070L Type Controller;
  - GPS clock installation (if not already in the City's ITS Master Plan);
  - ADA-compliant curb ramps on all corners (if not already installed);
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons);
  - Countdown Pedestrian Signals; and
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet.
- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-1 would not result in an acceptable LOS during the PM peak hour at this intersection. The average delay for the critical eastbound (East 9th Street) through movement would increase by less than the six-second threshold of significance for intersections operating at LOS E.

Significance after Mitigation: Less than Significant.

Year 2015 Intersection Impacts

This section addresses the intersection impacts that would occur in 2015 (as defined on page 4.3-1) with the completion of the proposed project. The 2015 analysis studies the potential impacts of the full project, and this represents a reasonable worst-case analysis of project transportation impacts.

2015 Intersection Traffic Forecasts

Interim Cumulative Conditions (2015 Baseline and 2015 with Project) were analyzed to determine the effect of the project in combination with past, present and reasonably foreseeable future developments in the surrounding community. The 2015 Baseline traffic volumes were derived from the ACCMA Model as well as guidelines in the City's TIS Technical Guidelines and existing traffic counts. Traffic volumes for 2015 With Project conditions were developed by adding traffic generated by the proposed project to the 2015 Baseline scenario. The traffic volumes for the 2015 Baseline and 2015 With Project scenarios are provided in the background Transportation Analysis (**Appendix E.1** of this EIR).

Roadway Network

No changes were made to the ACCMA Model network or the study intersections. No adjustments were made to optimize any of the traffic signal timings at the study intersections.

2015 Intersection Operations

The forecasted 2015 intersection turning movement volumes in conjunction with the existing intersection lane configurations and traffic signal timings were used to evaluate intersection operations for the 2015 Baseline scenario. The 2015 With Project scenario was analyzed after adding trips generated by the project. The results are summarized in **Table 4.3-10**.

Nine signalized intersections are projected to operate at an unacceptable LOS in 2015 both with and without the project:

2. Fruitvale Avenue and East 12th Street (north) – LOS F (AM and PM peak hours)
3. Fruitvale Avenue and San Leandro Street – LOS F (AM and PM peak hours)
4. Fruitvale Avenue and East 9th Street – LOS F (PM peak hour)
6. 35th Avenue and East 12th Street – LOS E (PM peak hour)
8. San Leandro Street and 35th Avenue – LOS E (PM peak hour)
11. International Boulevard and 38th Avenue – LOS F (AM peak hour)
12. International Boulevard and 42nd Avenue – LOS F (AM and PM peak hours)
14. San Leandro Street and High Street – LOS E (AM peak hour), and LOS F (PM peak hour)
15. High Street and Coliseum Way – LOS E (AM peak hour), and LOS F (PM peak hour)

TABLE 4.3-10
2015 INTERSECTION LEVEL OF SERVICE (LOS) SUMMARY

Intersection	Traffic Control	2015 Baseline				2015 with Project			
		AM Peak		PM Peak		AM Peak		PM Peak	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1 Fruitvale Ave & International Blvd	Signal	D	35.7	C	27.0	D	36.0	C	27.2
2 Fruitvale Ave & East 12th St (north)[a]	Signal	F	127.2	E	62.4	F	126.8	E	62.5
3 Fruitvale Ave & San Leandro St	Signal	F	137.4	E	67.7	F	137.5	E	68.4
4 Fruitvale Ave & East 9th St	Signal	D	45.5	F	111.9	D	47.2	***F***	***114.8***
Mitigated (Modify Signal)								*F*	*96.3*
5 Fruitvale Ave & East 8th St	Signal	C	21.0	C	24.8	C	20.9	C	25.3
6 35th Ave & East 12th St	Signal	B	12.4	F	266.6	B	12.7	F	267.2
Eastbound through					650.7				***656.6***
Mitigated (Modify Signal)									*594.5*
7 35th Ave & BART Access[b]	One-way stop	A (B)	1.4 (11.4)	A (C)	1.9 (21.9)	A (B)	1.4 (11.5)	A (C)	1.9 (21.7)
8 San Leandro St & 35th Ave	Signal	B	10.6	D	48.8	A	10.0	***E***	***61.7***
Mitigated (Modify Signal)								*D*	*47.9*
9 37th Ave & East 12th St	All-way stop	A	9.6	C	22.3	A	9.7	C	24.3
10 San Leandro St & 37th Ave	Signal	A	9.8	A	8.6	B	11.7	B	10.9
11 International Blvd & 38th Ave	Signal	F	85.0	B	18.3	F	85.2	B	18.3
12 International Blvd & 42nd Ave	Signal	F	168.5	F	87.4	F	168.7	F	79.8
13 International Blvd & High St	Signal	D	39.1	C	33.9	D	40.3	D	35.2
14 San Leandro St & High St	Signal	E	57.0	F	122.7	E	58.9	***F***	***124.9***
Mitigated (Modify Signal)								*F*	*117.5*
15 High St & Coliseum Way	Signal	F	99.6	E	70.3	F	101.2	E	71.4
Southbound through			175.5		69.9		***179.9***		71.7
Mitigated (Modify Signal)							*165.3*		
16 International Blvd & 34th Ave	Signal	C	20.8	A	9.3	C	21.2	A	9.3
17 East 12th St & 36th Ave	Stop[c]	A	9.4	B	14.9	A	2.1	B	1.8
18 Fruitvale Ave & East 12th St (south)[a]	Signal	A	2.5	B	13.5	A	2.5	B	13.6
19 35th Ave & Project Driveway	One-way stop	N/A	N/A	N/A	N/A	A (B)	0.6 (11.2)	A (B)	0.2 (10.6)
20 37th Ave & Project Driveway	One-way stop	N/A	N/A	N/A	N/A	A (A)	1.4 (9.7)	A (A)	1.0 (9.8)

Delay = Average vehicle delay in seconds

Bold denotes significant impact

Critical movement delay is provided when it is needed to determine significance of impact; delay values for critical movements not relevant to impact determination are shown in the background Transportation Analysis (**Appendix E.1** of this EIR).

[a] The Fruitvale Avenue / East 12th Street intersection is analyzed as two separate intersections because the eastbound right-turn movement is signal controlled and operate independently from other movements.

[b] At one-way stop controlled intersection, the LOS and average vehicle delay for the worst approach are shown in parentheses ().

[c] The East 12th Street / 36th Avenue intersection has all-way stop control under Baseline conditions and has one-way stop at 36th Avenue under Project conditions.

SOURCE: Dowling Associates, 2009

The proposed project would not cause the increase in average delay to exceed the applicable thresholds of significance, and therefore would have a less-than-significant impact, at the following intersections:

2. Fruitvale Avenue and East 12th Street (north)
3. Fruitvale Avenue and San Leandro Street
11. International Boulevard and 38th Avenue
12. International Boulevard and 42nd Avenue

The analysis also indicates that signal warrants would not be met at any of the unsignalized intersections during the AM or the PM peak hour. Detailed signal warrant worksheets are provided in the background Transportation Analysis (**Appendix E.1** of this DEIR).

2015 With Project Impacts and Mitigations

Impact TRANS-2: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at *Intersection #4 - Fruitvale Avenue and East 9th Street,* which would operate at an unacceptable LOS F under 2015 Baseline conditions. (Significant)

Mitigation Measure TRANS-2: Modify the PM peak-hour signal phasing at the intersection of Fruitvale Avenue / East 9th Street to allow protected-permitted left-turn movements on the northbound and southbound (Fruitvale Avenue) through movements, and refine the signal phase time.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below:
  - 2070L Type Controller;
  - GPS clock installation (if not already in the City's ITS Master Plan);
  - ADA-compliant curb ramps on all corners (if not already installed);
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons);
  - Countdown Pedestrian Signals; and
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet.
- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-2 would not result in an acceptable LOS during the PM peak hour at this intersection. The overall intersection average delay would be reduced to less than the 2015 Baseline condition.

Significance after Mitigation: Less than Significant.

Impact TRANS-3: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the PM peak hour for the critical eastbound (East 12th Street) through movement at *Intersection #6 - 35th Avenue and East 12th Street,* which would operate at an unacceptable LOS F under 2015 Baseline conditions. (Significant)

Mitigation Measure TRANS-3: Modify the PM peak-hour traffic signal timing at the intersection of 35th Avenue / East 12th Street to provide increased green time for the east-west (East 12th Street) approach and decreased green time for the north-south (35th Avenue) approach.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below:
  - 2070L Type Controller;
  - GPS clock installation (if not already in the City's ITS Master Plan);
  - ADA-compliant curb ramps on all corners (if not already installed);
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons);
  - Countdown Pedestrian Signals; and
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet.
- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-3 would not result in an acceptable LOS during the PM peak hour at this intersection. The average delay for the critical eastbound through movement would be reduced to less than the 2015 Baseline condition.

Significance after Mitigation: Less than Significant.

Impact TRANS-4: Buildout of the proposed project would cause the PM peak-hour LOS to degrade from an acceptable LOS D under 2015 Baseline conditions to an unacceptable LOS E at *Intersection #8 - San Leandro Street and 35th Avenue*. (Significant)

Mitigation Measure TRANS-4: At the intersection of San Leandro Street / 35th Avenue, eliminate the protected left-turn signal phase for westbound San Leandro Street, and optimize the signal split during the PM peak-hour.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below:
  - 2070L Type Controller;
  - GPS clock installation (if not already in the City's ITS Master Plan);
  - ADA-compliant curb ramps on all corners (if not already installed);
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons);
  - Countdown Pedestrian Signals; and
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet.
- Signal timing plans for the signals in the coordination group.

The project applicant shall fund the cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-4 would result in an acceptable LOS D during the PM peak hour at this intersection.

Significance after Mitigation: Less than Significant.

Impact TRANS-5: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at *Intersection #14 - San Leandro Street and High Street,* which would operate at an unacceptable LOS F under 2015 Baseline conditions. (Significant)

Mitigation Measure TRANS-5: Modify the PM peak-hour traffic signal phasing at the intersection of San Leandro Street / High Street to provide increased green time for the east-west (San Leandro Street) approach and decreased green time for the north-south (High Street) approach.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below:
  - 2070L Type Controller;
  - GPS clock installation (if not already in the City's ITS Master Plan);
  - ADA-compliant curb ramps on all corners (if not already installed);
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons);
  - Countdown Pedestrian Signals; and
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet.
- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-5 would not result in an acceptable LOS during the PM peak hour at this intersection. The overall intersection average delay would be reduced to less than the 2015 Baseline condition.

Significance after Mitigation: Less than Significant.

Impact TRANS-6: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical southbound (High Street) through movement at *Intersection #15 - High Street and Coliseum Way*, which would operate at an unacceptable LOS F under 2015 Baseline conditions. (Significant)

Mitigation Measure TRANS-6: Modify the AM peak-hour traffic signal timing at the intersection of High Street / Coliseum Way to provide increased green time for the southbound (High Street) through movement and decreased green time for the northbound (High Street) left-turn movement.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below:
  - 2070L Type Controller;
  - GPS clock installation (if not already in the City's ITS Master Plan);
  - ADA-compliant curb ramps on all corners (if not already installed);
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons);
  - Countdown Pedestrian Signals; and
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet.
- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-6 would not result in an acceptable LOS during the AM peak hour at this intersection. The average delay for the critical southbound through movement would be reduced to less than 2015 Baseline condition.

Significance after Mitigation: Less than Significant.

Year 2035 Intersection Impacts

This section addresses the intersection impacts that would occur in 2035 (as defined on page 4.3-1) with the completion of the proposed project.

2035 Intersection Traffic Forecasts

As with Interim Cumulative Conditions (2015 Baseline and 2015 with Project), Cumulative (2035) Conditions (2035 Baseline and 2035 with Project) were analyzed to determine the effect of the project in combination with past, present and reasonably foreseeable future developments in the surrounding community. The 2035 Baseline intersection turning movement forecasts were developed using a procedure similar to that used to derive the 2015 Baseline forecasts. Traffic volumes for 2035 With Project conditions were developed by adding traffic generated by the proposed project to the 2035 Baseline scenario. The traffic volumes for the 2035 Baseline and 2035 With Project scenarios are provided in the background Transportation Analysis (**Appendix E.1** of this EIR).

Roadway Network

No changes were made to the ACCMA Model network or the study intersections. No adjustments were made to optimize any of the traffic signal timings at the study intersections.

2035 Intersection Operations

The forecasted 2035 intersection turning movement volumes in conjunction with the existing intersection lane configurations and traffic signal timings were used to evaluate intersection operations for the 2035 Baseline scenario. The 2035 With Project scenario was analyzed after adding trips generated by the project. The results are summarized in **Table 4.3-11**.

The following 13 intersections are projected to operate at an unacceptable LOS in 2035 both with and without the project:

1. Fruitvale Avenue and International Boulevard – LOS F (AM and PM peak hours)
2. Fruitvale Avenue and East 12th Street (north) – LOS F (AM and PM peak hours)
3. Fruitvale Avenue and San Leandro Street – LOS F (AM and PM peak hours)
4. Fruitvale Avenue and East 9th Street – LOS F (AM and PM peak hours)
6. 35th Avenue and East 12th Street – LOS F (AM and PM peak hours)
8. 35th Avenue and San Leandro Street – LOS F (AM and PM peak hours)
9. 37th Avenue and East 12th Street – LOS F (PM peak hour)
10. San Leandro Street and 37th Avenue – LOS F (AM and PM peak hours)
11. International Boulevard and 38th Avenue – LOS F (AM peak hour)
12. International Boulevard and 42nd Avenue – LOS F (AM and PM peak hours)
13. International Boulevard and High Street – LOS F (AM and PM peak hours)
14. San Leandro Street and High Street – LOS F (AM and PM peak hours)
15. High Street and Coliseum Way – LOS F (AM and PM peak hours)

The proposed project would not cause the increase in average delay to exceed the applicable thresholds of significance, and therefore would have a less-than-significant impact at the following intersection:

12. International Boulevard and 42nd Avenue.

TABLE 4.3-11
2035 INTERSECTION LEVEL OF SERVICE (LOS) SUMMARY

	Intersection	Traffic Control	2035 Baseline				2035 With Project			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	Fruitvale Ave & International Blvd	Signal	F	197.5	F	153.7	F	197.6	F	155.0
	Southbound through			62.2		466.5		62.6		***473.1***
	Mitigation (Modify Signal)									*458.4*
2	Fruitvale Ave & East 12th St (north)[a]	Signal	F	337.0	F	394.0	F	337.0	F	394.9
	Southbound through			541.1		271.8		543.6		***277.7***
	Mitigation (Modify Signal)									*271.2*
3	Fruitvale Ave & San Leandro St	Signal	F	326.8	F	193.0	F	325.8	F	190.0
	Northbound through			120.5		NC		***124.6***		NC
	Mitigation (Modify Signal)							*122.4*		
4	Fruitvale Ave & East 9th St	Signal	F	242.2	F	297.0	F	242.9	***F***	***302.7***
	Mitigation (Modify Signal)								*F*	*279.1*
	Eastbound through			139.9		144.6		***158.9***		***152.9***
	Mitigation (Modify Signal)							*141.8*		*134.1*
	Northbound through			76.4		290.9		78.1		***306.1***
	Mitigation (Modify Signal)									*287.0*
5	Fruitvale Ave & East 8th St	Signal	D	40.3	D	48.4	D	41.1	***E***	***56.4***
	Mitigation (Modify Signal)								*D*	*47.6*
6	35th Ave & East 12th St	Signal	F	118.8	F	467.8	***F***	***139.7***	F	469.2
	Mitigation (Restripe Lanes)						*D*	*39.8*		
	Northbound through			276.8		53.1		***336.9***		***61.5***
	Mitigation (Restripe Lanes)							*16.4*		*10.9*
7	35th Ave & BART Access[b]	One-way stop	A (C)	2.0 (15.5)	A (F)	7.4 (154.4)	A (C)	2.0 (15.6)	A (F)	6.2 (97.4)
8	San Leandro St & 35th Ave	Signal	F	158.3	F	238.4	F	158.5	***F***	***244.4***
	Mitigation (Restripe Lanes & Modify Signal)								*F*	*193.2*
9	37th Ave & East 12th St	All-way Stop	B	11.7	F	147.9	B	11.9	***F***	***157.0***
	Mitigation (Install Signal)								*D*	*41.3*
10	San Leandro St & 37th Ave	Signal	F	274.9	F	290.8	***F***	***306.9***	***F***	***293.7***
	Mitigation (Restripe Lanes)						*F*	*180.5*	*F*	*251.2*
	Westbound through			441.4		NC		***488.7***		NC
	Mitigation (Restripe Lanes)							*310.6*		
11	International Blvd & 38th Ave	Signal	F	127.7	D	54.5	F	127.9	***E***	***55.8***
	Mitigation (Modify Signal)								*D*	*49.0*
12	International Blvd & 42nd Ave	Signal	F	279.8	F	135.2	F	279.9	F	136.4
13	International Blvd & High St	Signal	F	345.9	F	381.9	***F***	***350.7***	F	383.8
	Mitigation (Modify Signal)						*F*	*177.9*		
	Southbound through			1019.6		NC		***1032.7***		NC
	Mitigation (Modify Signal)							*271.8*		
14	San Leandro St & High St	Signal	F	630.6	F	641.8	***F***	***633.4***	***F***	***645.9***
	Northbound through			NC		483.1		NC		***495.6***
15	High St & Coliseum Way	Signal	F	291.3	F	160.1	***F***	***293.6***	***F***	***162.2***
	Mitigation (Modify Signal)						*F*	*282.8*	*F*	*155.0*
	Southbound left			517.2		346.1		***523.1***		349.5
	Mitigation (Modify Signal)							*486.5*		
16	International Blvd & 34th Ave	Signal	E	68.9	C	30.2	E	69.6	C	30.5
17	East 12th St & 36th Ave	Stop[c]	B	10.2	F	73.2	A	3.1	A	1.9
18	Fruitvale Ave & East 12th St (north)[a]	Signal	A	7.3	A	8.5	A	7.3	A	13.2
19	35th Ave & Project Driveway	One-way stop	N/A	N/A	N/A	N/A	A (B)	0.5 (15.7)	A (B)	0.2 (14.9)
20	37th Ave & Project Driveway	One-way stop	N/A	N/A	N/A	N/A	A (B)	1.1 (10.9)	A (B)	0.7 (10.9)

Delay = Average vehicle delay in seconds

Bold denotes significant impact

Critical movement delay is provided when it is needed to determine significance of impact; delay values for critical movements not relevant to impact determination are shown in the background Transportation Impact Analysis (**Appendix E.1** of this EIR).

[a] The Fruitvale Avenue / East 12th Street intersection is analyzed as two separate intersections because the eastbound right-turn movement is signal controlled and operate independently from other movements.

[b] At one-way stop controlled intersection, the LOS and average vehicle delay for the worst approach are shown in parentheses ().

[c] The East 12th Street / 36th Avenue intersection has all-way stop control under Baseline conditions and has one-way stop at 36th Avenue under Project conditions.

SOURCE: Dowling Associates, 2009.

2035 With Project Impacts and Mitigations

Buildout of the proposed project would cause the following significant impacts and Table 4.3-11 summarizes the LOS results. Intersection mitigated LOS tables are provided in the background Transportation Analysis (**Appendix E.1** of this EIR).

Impact TRANS-7: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the PM peak hour for the critical southbound (Fruitvale Avenue) through movement at *Intersection #1 - Fruitvale Avenue / International Boulevard*, which would operate at LOS F under 2035 Baseline conditions. (Significant)

Mitigation Measure TRANS-7: Modify the PM peak-hour traffic signal timing at the intersection of Fruitvale Avenue / International Boulevard to provide increased green time for the north-south (Fruitvale Avenue) approaches and decreased green time for the east-west (International Boulevard) approaches.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below:
  - 2070L Type Controller
  - GPS clock installation (if not already in the City's ITS Master Plan)
  - ADA-compliant curb ramps on all corners (if not already installed)
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons)
  - Countdown Pedestrian Signals
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet
- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-7 would not result in an acceptable LOS during the PM peak hour at this intersection. The average delay for the critical southbound through movement would be reduced to less than the 2035 Baseline condition.

Significance after Mitigation: Less than Significant.

Impact TRANS-8: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the PM peak hour for the critical southbound (Fruitvale Avenue) through movement at *Intersection #2 - Fruitvale Avenue / East 12th Street,* which would operate at LOS F under 2035 Baseline conditions. (Significant)

Mitigation Measure TRANS-8: Modify the PM peak-hour signal phasing at the intersection of Fruitvale Avenue / East 12th Street to provide protected-permissive left-turn phasing for eastbound and westbound (East 12th Street) and to provide increased green time for southbound (Fruitvale Avenue) and decreased green time for eastbound (East 12th Street).

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below:
  - 2070L Type Controller;
  - GPS clock installation (if not already in the City's ITS Master Plan);
  - ADA-compliant curb ramps on all corners (if not already installed);
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons);
  - Countdown Pedestrian Signals; and
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet.
- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-8 would not result in an acceptable LOS during the PM peak hour at this intersection. The average delay for the critical southbound through movement would be reduced to less than the 2035 Baseline condition.

Significance after Mitigation: Less than Significant.

Impact TRANS-9: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical northbound (Fruitvale Avenue) through movement at *Intersection #3 - Fruitvale Avenue / San Leandro Street,* which would operate at LOS F under 2035 Baseline conditions. (Significant)

Mitigation Measure TRANS-9: Modify the AM peak-hour traffic signal timing at the intersection of Fruitvale Avenue / San Leandro Street to provide increased green time for the north-south (Fruitvale Avenue) approaches and decreased green time for the east-west (San Leandro Street) approaches.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below:
  - 2070L Type Controller;
  - GPS clock installation (if not already in the City's ITS Master Plan);
  - ADA-compliant curb ramps on all corners (if not already installed);
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons);
  - Countdown Pedestrian Signals; and
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet.
- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-9 would not result in an acceptable LOS during the PM peak hour at this intersection. The average delay for the critical southbound through movement would be reduced to less than the 2035 Baseline condition.

Significance after Mitigation: Less than Significant.

Impact TRANS-10: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at *Intersection #4 - Fruitvale Avenue and East 9th Street,* which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical eastbound (East 9th Street) through movement. (Significant)

Mitigation Measure TRANS-10: Modify the PM peak-hour signal phasing at the intersection of Fruitvale Avenue / East 9th Street to provide protected-permissive left-turn phasing for northbound and southbound (Fruitvale Avenue) and to provide increased green time for the east-west (East 9th Street) approaches and decreased green time for the north-south (Fruitvale Avenue) approaches.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below:
  - 2070L Type Controller;
  - GPS clock installation (if not already in the City's ITS Master Plan);
  - ADA-compliant curb ramps on all corners (if not already installed);
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons);
  - Countdown Pedestrian Signals; and
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet.
- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-10 would not result in an acceptable LOS during the AM and PM peak hours at this intersection. The average delay for the overall intersection and for critical movements would be reduced to less than the 2035 Baseline condition (or to a level where the increase in delay would be less than the four-second threshold of significance for intersections operating at LOS F).

Significance after Mitigation: Less than Significant.

Impact TRANS-11: Buildout of the proposed project would cause the PM peak-hour LOS to degrade from an acceptable LOS D under 2035 Baseline conditions to an unacceptable LOS E at *Intersection #5 - Fruitvale Avenue / East 8th Street.* (Significant)

Mitigation Measure TRANS-11: Modify the PM peak-hour traffic signal timing at the intersection of Fruitvale Avenue / East 8th Street to provide increased green time for the east-west (East 8th Street) approaches and decreased green time for the north-south (Fruitvale Avenue) approaches.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below:
  - 2070L Type Controller
  - GPS clock installation (if not already in the City's ITS Master Plan)
  - ADA-compliant curb ramps on all corners (if not already installed)
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons)
  - Countdown Pedestrian Signals
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet
- Signal timing plans for the signals in the coordination group.

The project applicant shall fund the cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-11 would result in an acceptable LOS D during the PM peak hour at this intersection.

Significance after Mitigation: Less than Significant.

Impact TRANS-12: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM peak hour at *Intersection #6 - 35th Avenue and East 12th Street,* which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM and PM peak hours for the critical northbound (35th Avenue) through movement. (Significant)

Mitigation Measure TRANS-12: Restripe the northbound 35th Avenue approach at the intersection of 35th Avenue / East 12th Street to provide one shared left-through lane and

one shared through-right lane, which would require removal of two parking or loading spaces on the west side of 35th Avenue.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- A striping plan, and a traffic signal timing plan (if retiming of the traffic signal is needed).

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-12 would result in an acceptable LOS D during the AM peak hour at this intersection, and the average delay for the critical northbound through movement during the AM and PM peak hours would be reduced to less than the 2035 Baseline condition.

Significance after Mitigation: Less than Significant.

Impact TRANS-13: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at *Intersection #8 - San Leandro Street and 35th Avenue,* which would operate at LOS F under 2035 Baseline conditions. (Significant)

Mitigation Measure TRANS-13: Restripe the southbound 35th Avenue approach at the intersection of San Leandro Street / 35th Avenue to provide one shared left-through lane and one exclusive right-turn lane, which would require removal of up to three parking spaces on the west side of 35th Avenue. Also, modify the PM peak-hour traffic signal timing to provide increased green time for the westbound (San Leandro Street) through movement and decreased green time for the north-south (35th Avenue) approaches.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below:

  – 2070L Type Controller
  – GPS clock installation (if not already in the City's ITS Master Plan)
  – ADA-compliant curb ramps on all corners (if not already installed)
  – Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons)

  - Countdown Pedestrian Signals
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet

- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-13 would not result in an acceptable LOS during the PM peak hour at this intersection. The average intersection delay would be reduced to less than the 2035 Baseline condition.

Significance after Mitigation: Less than Significant.

Impact TRANS-14: Buildout of the proposed project would add more than 10 trips during the PM peak hour to *Intersection #9 - 37th Avenue / East 12th Street,* which would meet signal warrants, and would operate at LOS F under 2035 Baseline conditions. (Significant)

Mitigation Measure TRANS-14: Signalize the intersection of 37th Avenue / East 12th Street when California MUTCD signal warrants are met.

The project applicant shall pay for future signal warrant analysis (estimated to be $21,000 in 2009 dollars) to be done in three-year intervals, and its fair-share cost of signalization of this intersection.

Implementation of Mitigation Measure TRANS-14 would result in an acceptable LOS D or better during the AM and PM peak hours at this intersection.

Significance after Mitigation: Less than Significant.

Impact TRANS-15: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds at during the AM and PM peak hours *Intersection #10 - San Leandro Street / 37th Avenue,* which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical westbound (San Leandro Street) through movement. (Significant)

Mitigation Measure TRANS-15: Restripe the southbound 37th Avenue approach at the intersection of San Leandro Street / 37th Avenue to provide one exclusive left-turn lane and one shared through-right lane; and restripe the westbound (San Leandro Street) approach to provide one shared left-through lane, one through lane and one exclusive right-turn lane. The latter restriping would require removal of up to two parking spaces on the north side of San Leandro Street.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- A striping plan, and a traffic signal timing plan (if retiming of the traffic signal is needed).

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-15 would not result in an acceptable LOS during the AM and PM peak hours at this intersection. The average delay for the overall intersection and for critical movements would be reduced to less than the 2035 Baseline condition.

Significance after Mitigation: Less than Significant.

Impact TRANS-16: Buildout of the proposed project would cause the PM peak-hour LOS to degrade from an acceptable LOS D under 2035 Baseline conditions to an unacceptable LOS E at *Intersection #11 - International Boulevard / 38th Avenue*. (Significant)

Mitigation Measure TRANS-16: Modify the PM peak-hour traffic signal timing at the intersection of International Boulevard / 38th Avenue to increase the cycle length from 65 seconds to 67 seconds.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below:
  - 2070L Type Controller
  - GPS clock installation (if not already in the City's ITS Master Plan)
  - ADA-compliant curb ramps on all corners (if not already installed)
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons)
  - Countdown Pedestrian Signals
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet
- Signal timing plans for the signals in the coordination group.

The project applicant shall fund the cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-16 would result in an acceptable LOS D during the PM peak hour at this intersection.

Significance after Mitigation: Less than Significant.

Impact TRANS-17: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM peak hour at *Intersection #13 - International Boulevard / High Street,* which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical southbound (High Street) through movement. (Significant)

Mitigation Measure TRANS-17: Modify the AM peak-hour signal phasing at the intersection of International Boulevard / High Street to provide protected-permissive left-turn phasing for westbound (International Boulevard) and optimize the signal split during the AM peak hour.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below:
  - 2070L Type Controller
  - GPS clock installation (if not already in the City's ITS Master Plan)
  - ADA-compliant curb ramps on all corners (if not already installed)
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons)
  - Countdown Pedestrian Signals
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet
- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-17 would not result in an acceptable LOS during the AM peak hour at this intersection. The average delay for the overall intersection and for critical southbound through movement would be reduced to less than the 2035 Baseline condition.

Significance after Mitigation: Less than Significant.

Impact TRANS-18: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM and PM peak hours at *Intersection #14 - San Leandro Street / High Street,* which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay during the PM peak hour by more than four seconds for the critical northbound (High Street) through movement. (Significant)

Mitigation Measure TRANS-18: No feasible mitigation measure was identified to reduce the project impact to less-than-significant level. Optimizing the signal split times would improve the average delay for the overall intersection to better than 2035 Baseline conditions during the AM and PM peak hours, but would result in secondary impacts on critical movement delays. Widening either High Street or San Leandro Street to provide additional capacity would also lessen the project impact, but is not feasible due to right-of-way constraints.

As a condition of project approval, the traffic signal would be upgraded to current City of Oakland standards (e.g., GPS clock or interconnect, audible pedestrian signal heads, and ADA-compliant curb ramps on all corners), and the signal split times would be optimized.

Optimization of the traffic signal would reduce, but not avoid, a significant impact.

Significance after Mitigation: Significant and Unavoidable.

Impact TRANS-19: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM and PM peak hours at *Intersection #15 - Coliseum Way / High Street,* which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical southbound (High Street) left-turn movement. (Significant)

Mitigation Measure TRANS-19: Modify the AM peak-hour traffic signal timing at the intersection of Coliseum Way / High Street to provide increased green time for the southbound (High Street) approach and decreased green time for the northbound (High Street) left-turn movement. Modify the PM peak-hour traffic signal timing to provide increased green time for the north-south (High Street) approaches and decreased green time for the westbound (Coliseum Way) approach.

To implement this measure, the project applicant shall submit the following to City of Oakland's Transportation Services Division for review and approval:

- Plans, Specifications, and Estimates (PS&E) to modify intersection to accommodate the signal modifications. The signal should be designed to City standards in effect at the time of construction. All other facilities supporting vehicle travel and alternative modes through the intersection should be brought up to both City standards and ADA

standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for among other items the elements listed below:

  - 2070L Type Controller
  - GPS clock installation (if not already in the City's ITS Master Plan)
  - ADA-compliant curb ramps on all corners (if not already installed)
  - Full signal actuation (includes video detection, bicycle detection, pedestrian push buttons)
  - Countdown Pedestrian Signals
  - Signal interconnect for corridors identified in the City's ITS Master Plan for a maximum of 600 feet

- Signal timing plans for the signals in the coordination group.

The project applicant shall contribute its fair-share cost of preparing and implementing this measure.

Implementation of Mitigation Measure TRANS-19 would not result in an acceptable LOS during the AM and PM peak hours at this intersection. The average delay for the overall intersection and for critical southbound left-turn movement would be reduced to less than the 2035 Baseline condition.

Significance after Mitigation: Less than Significant.

Freeway Impacts

The following discussion of potential project impacts to traffic operating conditions on freeway ramps and mainline segments uses vehicle density (defined as passenger cars per mile per lane), consistent with the Caltrans guidelines for traffic impact studies (Caltrans, 2002), and with the methodologies in the 2000 HCM (as described on pages 4.3-12 to 4.3-13). This analysis methodology differs from the methodology required by the ACCMA for the CMP roadway evaluation, based on volume-to-capacity (v/c) ratios and the 1985 HCM. The required Congestion Management Program (CMP) evaluation is presented separately (starting on page 4.3-55).

Impact TRANS-20: Buildout of the proposed project would add traffic to the freeway ramps and mainline segments of I-880. (Less than Significant)

Freeway Mainline Segments

Existing, 2015 and 2035 freeway mainline traffic volumes and LOS based on vehicle density are shown in **Tables 4.3-12**, **4.3-13** and **4.3-14**, respectively, for conditions without and with buildout of the proposed project. As described on page 4.3-16, the ACCMA monitoring report indicates that there are no deficient (LOS F) freeway segments within the study area for this project; Table 4.3-12 corroborates that finding. As indicated in the following tables, the project traffic would not cause the LOS on any mainline segments to worsen, but buildout of the proposed project would

TABLE 4.3-12
EXISTING FREEWAY MAINLINE LEVELS OF SERVICE

Mainline Segment, Direction, & Location	Peak Hour	Existing			Existing with Project		
		Volume	Density[a]	LOS	Volume[b]	Density[a]	LOS
I-880 NB South of High Street	AM	7,188	24.8	C	7,189 (+1)	24.8	C
	PM	7,474	26.1	D	7,485 (+11)	26.2	D
I-880 NB btw 42nd Ave and 29th Ave	AM	7,230	38.0	E	7,232 (+2)	38.0	E
	PM	7,324	38.7	E	7,326 (+2)	38.7	E
I-880 NB north of Fruitvale Ave	AM	7,574	40.8	E	7,587 (+13)	40.9	E
	PM	7,231	38.0	E	7,242 (+11)	38.0	E
I-880 SB north of Fruitvale Ave	AM	7,074	36.8	E	7,077 (+3)	36.9	E
	PM	7,583	40.9	E	7,606 (+23)	41.1	E
I-880 SB South of High Street	AM	7,117	32.8	D	7,124 (+7)	32.8	D
	PM	6,863	31.0	D	6,870 (+7)	31.1	D

[a] Density is presented in passenger cars per mile per lane.
[b] The volume in parenthesis is the number of project-generated vehicles on the segment.
Segment direction is abbreviated as NB (for northbound) and SB (for southbound).

SOURCE: Dowling Associates, Inc., and Caltrans, 2009.

contribute to LOS E conditions that currently exist, and/or to LOS E and F conditions that are expected to occur in 2015 and 2035 without the proposed project, on some of the segments. The project traffic's contribution to those LOS E/F conditions would represent an increase in density that would not be noticeable to the average motorist from one day to the next. Therefore, the project impact would be less than significant.

Freeway Interchange Operations

Existing, 2015 and 2035 traffic volumes and LOS on freeway interchange (ramp) facilities are shown in **Tables 4.3-15**, **4.3-16** and **4.3-17**, respectively, for conditions without and with buildout of the proposed project. As indicated, the project traffic would not cause the LOS on any ramp area to worsen, but buildout of the proposed project would contribute to LOS E and F conditions that currently exist and/or are expected to occur in 2015 and 2035 without the proposed project in some of the areas. The project traffic's contribution to those LOS E/F conditions would represent an increase in traffic volume that would not be noticeable to the average motorist from one day to the next. Therefore, the project impact would be less than significant.

Mitigation: None required.

TABLE 4.3-13
2015 FREEWAY MAINLINE LEVELS OF SERVICE

Mainline Segment, Direction, & Location	Peak Hour	2015 Baseline			2015 With Project		
		Volume	Density[a]	LOS	Volume[b]	Density[a]	LOS
I-880 NB South of High Street	AM	8,239	29.4	D	8,240 (+1)	29.4	D
	PM	7,534	26.4	D	7,545 (+11)	26.4	D
I-880 NB btw 42nd Ave and 29th Ave	AM	8,056	>45	F	8,058 (+2)	>45	F
	PM	7,380	39.1	E	7,382 (+2)	39.1	E
I-880 NB north of Fruitvale Ave	AM	8,408	>45	F	8,421 (+13)	>45	F
	PM	7,403	39.3	E	7,414 (+11)	39.4	E
I-880 SB north of Fruitvale Ave	AM	7,335	38.7	E	7,338 (+3)	38.8	E
	PM	8,186	>45	F	8,209 (+23)	>45	F
I-880 SB South of High Street	AM	7,287	34.1	D	7,294 (+7)	34.1	D
	PM	7,466	35.5	E	7,473 (+7)	35.6	E

[a] Density is presented in passenger cars per mile per lane (pc/mi/ln).
[b] The volume in parenthesis is the number of project-generated vehicles on the segment.
Segment direction is abbreviated as NB (for northbound) and SB (for southbound).

SOURCE: Dowling Associates, Inc., and Caltrans, 2009.

Required Congestion Management Program (CMP) Evaluation

The ACCMA required CMP evaluation of roadway segments uses v/c ratios and the 1985 Highway Capacity Manual (HCM) analysis methodology. The roadway segment analysis differs from the methodology used for the analysis of freeway ramps and freeway mainline segments, which use a measure of vehicle density (defined as passenger cars per mile per lane), consistent with Caltrans guidelines for traffic impact studies, and with the methodologies in the 2000 HCM. The latter analysis is presented separately (starting on page 4.3-53).

The Alameda County CMP requires the assessment of development-driven impacts to regional roadways. Because the project would generate more than 100 “net new” AM and PM peak hour trips, the CMP requires the use of the ACCMA Model to assess the impacts on regional roadways near the project site. The CMP and Metropolitan Transportation System (MTS) roadways in the project vicinity identified in the NOP comments by ACCMA include selected segments of I-880, Fruitvale Avenue, International Boulevard, 42nd Avenue, High Street and San Leandro Street. The effects of the proposed project on CMP transit service (AC Transit and BART) are addressed on page 4.3-66.

TABLE 4.3-14
2035 FREEWAY MAINLINE LEVELS OF SERVICE

Mainline Segment, Direction, & Location	Peak Hour	2035 Baseline			2035 With Project		
		Volume	Density[a]	LOS	Volume[b]	Density[a]	LOS
I-880 NB South of High Street	AM	9,166	34.4	D	9,167 (+1)	34.4	D
	PM	8,522	30.7	D	8,533 (+11)	30.8	D
I-880 NB btw 42nd Ave and 29th Ave	AM	8,741	>45	F	8,743 (+2)	>45	F
	PM	8,315	>45	F	8,317 (+2)	>45	F
I-880 NB north of Fruitvale Ave	AM	8,910	>45	F	8,923 (+13)	>45	F
	PM	8,061	>45	F	8,072 (+11)	>45	F
I-880 SB north of Fruitvale Ave	AM	8,615	>45	F	8,618 (+3)	>45	F
	PM	9,213	>45	F	9,236 (+23)	>45	F
I-880 SB South of High Street	AM	8,567	>45	F	8,574 (+7)	>45	F
	PM	8,077	41.7	E	8,084 (+7)	41.8	E

[a] Density is presented in passenger cars per mile per lane (pc/mi/ln).
[b] The volume in parenthesis is the number of project-generated vehicles on the segment.

Segment direction is abbreviated as NB (for northbound) and SB (for southbound).

SOURCE: Dowling Associates, Inc., and Caltrans, 2009.

The impacts of the project on the regional MTS/CMP system were assessed using the latest version of the ACCMA Model, specifically the 2015 Baseline and 2035 Baseline forecasts, which uses Association of Bay Area Government's *Projections 2007* socio-economic forecasts. No land use change was made to the model because it is conservatively assumed that motorists currently using the existing parking lot on the proposed project site would continue to travel to the area and park their vehicles at other nearby locations. Rather, post-model adjustments were made to capture the effects of the 275 households added by the proposed project. The "with Project" forecasts at the roadway segments were obtained by manually adding the estimated project-generated trips (see Table 4.3-8, page 4.3-26) to the "Baseline" forecasts.

Due to differences in the land use assumptions and differences in analysis methodologies, the forecasted traffic volumes on the roadway links can be different from the intersection volumes, particularly at the local level. The first area of difference is the land use data sets employed for the intersection forecasts and the MTS forecasts. The intersection forecasts, which are used to assess project traffic impacts on City of Oakland intersections, are based on land use data adjusted to reflect all past, present, existing, approved, pending and reasonably foreseeable

TABLE 4.3-15
EXISTING FREEWAY INTERCHANGE LEVELS OF SERVICE (LOS)

Location	Analysis Type	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Ramp or Weaving Volume	LOS	Ramp or Weaving Volume	LOS	Ramp or Weaving Volume[a]	LOS	Ramp or Weaving Volume[a]	LOS
		Existing				Existing With Project			
NB Off-ramp to High Street	Diverge	787	C	1,031	D	788 (+1)	C	1,042 (+11)	D
NB On-ramp from 42nd Avenue	Merge	899	D	881	D	901 (+2)	D	883 (+2)	D
NB Weave btw Fruitvale/29th Ave on-ramp and 23rd Ave off-ramp	Weave	1,249	F	1,128	F	1,260 (+11)	F	1,137 (+9)	F
SB Weave btw 29th Ave on-ramp and Fruitvale Ave off-ramp	Weave	740	E	1,130	F	743 (+3)	E	1,153 (+23)	F
SB On-ramp from High St	Merge	1,239	D	904	D	1,246 (+7)	D	911 (+7)	D

[a] The volume in parenthesis is the number of project-generated vehicles on the segment.

SOURCE: Dowling Associates, Inc., 2009, using Leisch method for Weaving analysis, and HCM 2000 method for merge and diverge analysis.

TABLE 4.3-16
2015 FREEWAY INTERCHANGE LEVELS OF SERVICE

Location	Analysis Type	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Ramp or Weaving Volume	LOS	Ramp or Weaving Volume	LOS	Ramp or Weaving Volume[a]	LOS	Ramp or Weaving Volume[a]	LOS
		2015 Baseline				2015 With Project			
NB Off-ramp to High Street	Diverge	1,082	F	1,035	D	1,083 (+1)	F	1,046 (+11)	D
NB On-ramp from 42nd Avenue	Merge	899	D	881	D	901 (+2)	D	883 (+2)	D
NB Weave btw Fruitvale/29th Ave on-ramp and 23rd Ave off-ramp	Weave	1,775	F	1,412	F	1,786 (+11)	F	1,421 (+9)	F
SB Weave btw 29th Ave on-ramp and Fruitvale Ave off-ramp	Weave	766	E	1,138	F	769 (+3)	E	1,161 (+23)	F
SB On-ramp from High St	Merge	1,239	D	904	D	1,246 (+7)	D	911 (+7)	D

[a] The volume in parenthesis is the number of project-generated vehicles on the segment.

SOURCE: Dowling Associates, Inc., 2009, using Leisch method for Weaving analysis, and HCM 2000 method for merge and diverge analysis.

TABLE 4.3-17
2035 FREEWAY INTERCHANGE LEVELS OF SERVICE

Location	Analysis Type	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Ramp or Weaving Volume	LOS	Ramp or Weaving Volume	LOS	Ramp or Weaving Volume[a]	LOS	Ramp or Weaving Volume[a]	LOS
		2035 Baseline				2035 With Project			
NB Off-ramp to High Street	Diverge	1,443	F	1,088	F	1,444 (+1)	F	1,099 (+11)	F
NB On-ramp from 42nd Avenue	Merge	1,018	F	881	D	1,020 (+2)	F	883 (+2)	D
NB Weave btw Fruitvale/29th Ave on-ramp and 23rd Ave off-ramp	Weave	1,782	F	1,696	F	1,793 (+11)	F	1,705 (+9)	F
SB Weave btw 29th Ave on-ramp and Fruitvale Ave off-ramp	Weave	798	E	1,333	F	801 (+3)	E	1,356 (+23)	F
SB On-ramp from High St	Merge	1,239	F	904	D	1,246 (+7)	F	911 (+7)	D

[a] The volume in parenthesis is the number of project-generated vehicles on the segment.

SOURCE: Dowling Associates, Inc., 2009, using Leisch method for Weaving analysis, and HCM 2000 method for merge and diverge analysis.

projects in the City of Oakland, which differs from the data in the ACCMA Model. The second area of difference is the use of the Furness process.[5] The intersection forecasts use the output of the ACCMA Model as an input to develop intersection volumes in conjunction with existing traffic counts. The CMP and MTS roadway analysis is based on the outputs of the ACCMA Model directly on a roadway segment level. It is not unusual to have discrepancies given that the two analyses measure impacts at a different scale. For local streets, intersections are typically a more accurate measure of operating conditions because the capacity of an urban street, defined as the number of vehicles that can pass through its intersections, is controlled by the capacity at its intersections.

ACCMA does not have a policy for determining an LOS threshold of significance for the Land Use Analysis Program; local jurisdictions, in their role as Lead Agency for project review, should apply professional judgment to determine the significance of project impacts.

The CMP analysis focuses on roadway links on MTS and CMP highway segments, and does not extend to intersections. This is consistent with the guidelines of the 2005 Congestion Management Program. As stated under the Significance Criteria (pages 4.3-30), evaluation of operating conditions of MTS/CMP roadways was conducted to see if the proposed project would cause an MTS roadway segment to operate at LOS F, or would increase the v/c ratio by more than three percent for a roadway segment that would operate at LOS F without the project.

5 The furness adjustment (balancing) technique is used to modify projected (future) intersection turning movement volumes based upon a comparison of existing traffic volumes and the computer model calibration results. It uses mathematical formulae to balance roadway volumes approaching and departing from the intersection, and thus balances turning volumes that make sense compared to the counts and model calibration turning movements. In this way, the level of confidence of the future turning movement volumes is improved.

This criterion was developed based on professional judgment using a "reasonableness test" of daily fluctuations of traffic. For example, a change of v/c ratio of three percent has been found to be the threshold for which a perceived change in congestion is observed (this change is equivalent to less than one-half of the change from one level of service to the next).

CMP and MTS Highway Segments

The LOS for the designated links were analyzed in a spreadsheet using the Florida Department of Transportation LOS methodology, which provides a planning level analysis based on the 1985 HCM methods. As a planning level analysis, the level of service is based on forecasts of traffic and assumptions for roadway and signalization control conditions, such as facility type (freeway, expressway, and arterial classification), speeds, capacity and number of lanes. The assumption for the number of lanes at each link location was extracted from the ACCMA Model and confirmed through aerial and field observations.

Year 2015 Impacts on Regional and Local Roadways

Impact TRANS-21: Buildout of the proposed project would contribute to 2015 changes to traffic conditions on the regional and local roadways. (Significant)

A summary of 2015 LOS conditions is provided in the background Transportation Impact Analysis (Tables 24 and 25 - **Appendix E.1** of this EIR). With the addition of project trips, all of the MTS roadways would experience increases in volume, but no change in the LOS, with the exception of the eastbound San Leandro Street segment west of 35th Avenue, where the added project trips would cause the operations to degrade from LOS E to LOS F in the PM peak hour (a significant impact).

> **Mitigation Measure TRANS-21:** Mitigation of the project's significant impact on eastbound San Leandro Street west of 35th Avenue is not feasible. An additional lane on eastbound San Leandro Street would require removal of the parking lane or widening of San Leandro Street. However, such measures are considered infeasible due to physical constraints caused by on-street parking demand and existing right-of-way.
>
> **Significance after Mitigation:** Significant and Unavoidable.

Year 2035 Impacts on Regional and Local Roadways

Impact TRANS-22: Buildout of the proposed project would contribute to 2035 changes to traffic conditions on the regional and local roadways. (Significant)

A summary of 2035 LOS conditions is provided in the Transportation Impact Analysis (Tables 26 and 27 - **Appendix E.1** of this EIR). With the addition of project traffic, all of the MTS roadways would experience increases in volume, but no change in the LOS, with the exception of eastbound San Leandro Street west of High Street, where the added project trips would cause the operations to degrade from LOS E to LOS F in the PM peak hour.

Mitigation Measure TRANS-22: Mitigation of the project's significant impact on eastbound San Leandro Street west of High Street is not feasible. An additional lane on eastbound San Leandro Street would require removal of the parking lane or widening of San Leandro Street. However, such measures are considered infeasible due to physical constraints caused by on-street parking demand and existing right-of-way.

Significance after Mitigation: Significant and Unavoidable.

Construction Impacts

Project-specific construction information regarding the duration of the construction periods, the number of construction workers, worker parking requirements, estimates of daily truck trips, truck routing and other related construction activity data was not available for use in this EIR.

The project would be constructed in four phases in a roughly four-year period. It would be anticipated that construction of the project would include numerous disruptions to the transportation system in and around the project area and may include temporary street and sidewalk closures. Heavy vehicles would access the project area and would need to be staged for construction. Short-term construction activities and staging of construction vehicles and equipment would result in degraded roadway operations. Given the proximity to I-880, the use of local roadways would be limited. A construction-related traffic impact would exist if the traffic from the construction of the site would adversely affect traffic flow, parking, bicycle and pedestrian safety.

Recommendations

A specific Construction Traffic Management Plan developed by the project applicant prior to issuance of permits for the project site, in the context of a larger Construction Management Plan as required by the City's Standard Conditions of Approval, would address potentially significant impacts. The plan shall ensure maintenance of acceptable operating conditions on local roadways and transit routes. See TRANS-1, *Construction Traffic and Parking*, for a description of traffic management strategies applicable to potential traffic and parking conditions during project construction.

Vehicle, Pedestrian and Bicycle Safety

Pedestrian counts taken in April 2009 include counts for the intersection of 35th Avenue and East 12th Street, which is one of the heaviest travelled intersections adjacent to the project site. Peak hour counts for both AM and PM peak hours at this intersection total approximately 565 pedestrians. Bicycle counts are also among the highest at 35th Avenue and East 12th Street, where peak hours show a total of approximately 70 bicycle trips through the intersection. The streets surrounding the project site provide sidewalks on both sides and the internal project roadways would provide sidewalks and pedestrians paths. A number of access points for

emergency vehicles would be provided along the private alley, to be maintained by the applicant, on the southern border of the site.

The project site is located in an urban area where a large number of pedestrians and high degree of pedestrian amenities are found. The proposed project would result in an increase in pedestrian trips in the study area by residents, visitors and employees, particularly to access bus and rail service at the Fruitvale station and to the retail commercial and transit corridor on International Boulevard. The project would not be expected to change the existing pedestrian network and would provide sidewalks that conform to City standards along its frontage on 35th Avenue and 37th Avenue and on East 12th Street.

The project site plan shows pedestrian access at three locations in the northern portion of the site, i.e., on East 12th Street at 36th Avenue, and on 35th and 37th Avenues at East 12th Street. Project residents walking to and from the BART station would likely utilize the 35th Avenue access and cross at the signalized intersection. Alternatively, they could walk along the eastern sidewalk and cross to the BART station at the designated crossing at the median near the private alley.

The design of the sidewalks, curb ramps and other pedestrian amenities would be consistent with the City's design standards and would meet the accessibility guidelines of the Americans with Disabilities Act (ADA).

The proposed project would result in an increase in bicycle trips in the study area by residents and visitors. Those bicycle trips would be accommodated in existing and planned bikeways, as described on page 4.3-9. Neither the project nor the identified mitigation measures would displace any existing bicycle facilities, prevent creation of any planned bicycle facilities, or conflict with any adopted bicycle guidelines, plans, policies or standards.

Vehicle, Pedestrian and Bicycle Safety Impacts

The project site plan will continue to be refined to ensure consistency with design standards. The final project design would be required to minimize potential conflicts between various modes and to provide safe and efficient pedestrian, bicycle, and vehicle connections between the project and the surrounding circulation systems. The proposed project would also be required to not cause a significant impact by substantially increasing traffic hazards to motor vehicles, bicycles, or pedestrians due to a design feature.

Rail Crossings. The location and design of rail crossings affect vehicle, pedestrian and bicycle safety. This transportation analysis evaluates ten years of vehicle, pedestrian, and bicycle collision data at three rail crossings within the project study area to determine if the proposed project would contribute to an existing problem or if any improvements are recommended in order to alleviate potential effects of the project.

The project would add traffic to the railroad crossings on 29th Avenue, Fruitvale Avenue, 37th Avenue and High Street (though the amount of traffic added onto 29th Avenue would be minimal). According to field visual survey, all of these crossings have automated arm gates and

have proper signage that is consistent with California MUTCD recommendations. The potential for the project's added traffic to have impacts was investigated in the following areas:

- The potential for collisions between trains and vehicles as described in the Setting. Statewide Integrated Traffic Record System (SWITRS) records show that there were 22 collisions reported over the ten-year period between October 1, 1998 and September 30, 2008 within roughly 100 feet of the at-grade railroad track crossings on Fruitvale Avenue, East 9th Street / 37th Avenue, and High Street.[6] The project's added traffic would add to the potential for collisions at the crossings, but no threshold of significance is available for this impact. Given that, with the exception of 37th Avenue, the project would add less than five percent to the peak-hour traffic volumes in each scenario, it is presumed by this analysis that the project's impacts would not be significant at the Fruitvale Avenue and High Street crossings. The project would add five or more percent to the peak-hour traffic volumes to the 37th Avenue crossings in the AM peak hour under the Existing with Project and Year 2015 Interim scenarios. However, the total traffic volume traversing this crossing would remain low. Therefore, the impact is not considered significant.

- The potential for collisions between trains and pedestrians – Given the nature of adjacent land uses and the distance from the project site, pedestrian traffic from the project would not significantly increase at the crossings as a result of the proposed project. However, in light of the recent pedestrian fatality[7] near the Fruitvale Avenue crossing, educational material may be provided as a part of the sales material to new owners of the Fruitvale Transit Village II development. However, it is unlikely that the project would contribute significantly to the potential for train versus pedestrian collisions because the location of most attractions such as shops and transit corridors lie north of the project site (away from the rail crossings).

- Increases to the traffic queues on the approaches to the rail crossings – Based on field reconnaissance of existing queuing at intersections in proximity to rail crossings, and on calculated queue lengths under future with and without project scenarios (described in the background Transportation Analysis, **Appendix E.1** of this EIR), background traffic impact analysis report), the proposed project would not have a significant impact on traffic queues on the approaches to the rail crossings.

Emergency Vehicle Access

An access roadway with two-way traffic would be constructed between 35th and 37th Avenues along the south side of the project site and immediately north of the elevated BART tracks. The alley would allow emergency vehicles to access the south side of the development from the west via 35th Avenue and from the east via 37th Avenue. If one road were blocked, the other road could be used by emergency vehicles to reach the development. The south side project road would be designed to accommodate emergency vehicle access as well as residential vehicle circulation. Thus, the project would not cause a significant impact on emergency access.

6 As described on page 4.3-19, after September 2008, three additional motor vehicle-train collisions occurred at the Fruitvale Avenue crossing, the latest occurring on December 1, 2009 when a motorist drove his vehicle around the crossing gate and the vehicle was hit by a passenger train on the northbound direction (the motorist was killed in the collision).

7 During the preparation of this analysis, a southbound Amtrak train hit and killed a pedestrian at the Fruitvale Avenue crossing (July 5, 2009); the cause of the incident is not known at this time.

Consistency with Adopted Policies, Plans or Programs Supporting Alternative Transportation

A discussion of applicable polices and plans is provided below. In general, the proposed project is consistent with these policies, plans and programs.

The City of Oakland General Plan LUTE states a strong preference for encouraging the use of alternative transportation modes, such as transit, bicycling, and walking. The proposed project would encourage use of alternative modes because it is located adjacent to the Fruitvale BART station and in the vicinity of Fruitvale Avenue and near International Boulevard which are major AC Transit corridors.

The proposed project is consistent with the City of Oakland Pedestrian Master Plan by including features and improvements such as using existing traffic signals i.e., at 35th and 37th Avenues and their associated features (e.g., pedestrian signal heads) to improve pedestrian safety at intersections. The project identifies the primary pedestrian routes connecting the site to the surrounding transportation system and specifically the links to the BART station.

The project residential units are linked to each other and the parking structure with accessible pathways. Project buildings have been designed to accommodate the pedestrian. The new parking garage is set back from the street and would be ADA accessible.

The proposed project is consistent with the City of Oakland Bicycle Master Plan. Although Class II bicycle lanes are planned along East 12th Street, these lanes would be located west of Fruitvale Avenue, which is approximately four blocks west of the project site. The proposed project therefore would not alter any street segments that are proposed to be a Class II bicycle facility.

Thus, the proposed project would not cause a significant impact by conflicting with adopted policies, plans, or programs supporting alternative transportation.

4.3.5 Other Planning-Related Non-CEQA Issues[8]

The items discussed in this section include:

- Parking Considerations;
- Transit Considerations;
- Intersection Queuing Analysis; and
- Alternative Routes Analysis.

Parking Considerations

The Court of Appeal has held that parking is not part of the permanent physical environment, that parking conditions change over time as people change their travel patterns, and that unmet parking demand created by a project need not be considered a significant environmental impact

8 See page 4.3-29 for a definition of a non-CEQA impact.

under CEQA unless it would cause significant secondary effects.[9] Parking supply/demand varies by time of day, day of week, and seasonally. As parking demand increases faster than the supply, parking prices rise to reach equilibrium between supply and demand. Decreased availability and increased costs result in changes to people's mode and pattern of travel. However, the City of Oakland, in its review of the proposed project, wants to ensure that the project's provision of additional parking spaces along with measures to reduce parking demand (by encouraging the use of non-auto travel modes) would result in minimal adverse effects to project occupants and visitors, and that any secondary effects (such as on air quality due to drivers searching for parking spaces) would be minimized. As such, although not required by CEQA, parking conditions are evaluated in this document.

Parking deficits may be associated with secondary physical environmental impacts, such as air quality and noise effects, caused by congestion resulting from drivers circling as they look for a parking space. However, the absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, shuttles, taxis, bicycles or travel by foot), may induce drivers to shift to other modes of travel, or change their overall travel habits. Any such resulting shifts to transit service, in particular, would be in keeping with the City's "Transit First" policy.

Additionally, regarding potential secondary effects, cars circling and looking for a parking space in areas of limited parking supply are typically a temporary condition, often offset by a reduction in vehicle trips due to others who become aware of constrained parking conditions in a given area. Hence, any secondary environmental impacts that might result from a shortfall in parking in the vicinity of the proposed project are considered less than significant.

For informational purposes, this EIR evaluates the non-CEQA issue of whether the project's estimated parking demand (both project-generated and project-displaced) would be met by the project's proposed parking supply or by the existing parking supply within a reasonable walking distance of the project site. Project-displaced parking results from the project's removal of standard on-street parking, City or Redevelopment Agency owned/controlled parking and/or legally required off-street parking (non-open-to-the-public parking which is legally required). Therefore, the analysis must compare the proposed parking supply with both the estimated demand and the Oakland Planning Code requirements.

Project Parking

The evaluation includes the following:

- Comparison of the proposed parking supply to the City's parking requirements;
- Comparison of the proposed parking supply to the estimated project demand; and
- Summary of strategies to reduce parking demand and/or increase supply.

9 *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

Project Parking Supply

The proposed project would displace an existing private parking lot with approximately 547 fee-for-parking spaces. BART required replacement of these parking spaces; this requirement was fulfilled through the construction of the mid-rise parking structure and surface parking lot as a part of the Phase I project (in anticipation of the development of the project site).

City Off-street Parking Requirements

The project site is located in a Transit Oriented Development Zone (S-15) as defined by the City Zoning Regulations. In this zoning district, the Code requires one-half off-street parking space per residential unit, which results in 138 required spaces for the proposed development. The project proposes 277 spaces, which would exceed the City Planning Code requirements.

As stated on page 4.3-23, as a multi-family development, without private garages, one long-term bicycle parking space would be required for each four dwelling units, and one short-term bicycle parking space would be required for each 20 dwelling units. As a result, the applicant would be required to provide a bicycle parking supply of 5 long-term and 23 short-term spaces in Building 1, 4 long-term and 22 short-term spaces in Building 2, and 5 long-term and 24 short-term spaces in Building 3. For the project as a whole, a total of 14 long-term and 69 short-term bicycle parking spaces would be required by the City to be included in the parking garage or nearby.

Parking Demand Analysis

The project's parking demand was estimated based on data from *Parking Generation*, 3rd Edition published by the Institute of Transportation Engineers (ITE, 2004). ITE acknowledges that parking demand at urban sites differ from that at suburban sites. However, ITE data were primarily based on suburban sites with a demand range of 1.04 to 1.96 vehicles per dwelling unit. The single urban use site published in the ITE data has a parking demand of 0.85 vehicles per dwelling units. From these data, it is reasonable to estimate that the proposed 275 dwelling units, which are located in the City designated Transit Oriented Development Zone (S-15), would generate a parking demand in the range of 234 parking spaces (based on an urban survey site) to 286 parking spaces (based on the low end of the suburban data range).

Parking Demand

The proposed project is estimated to generate a parking demand of between 234 spaces and 286 spaces. As the project proposes to provide 277 spaces, there is a potential shortfall of 9 spaces. To determine if this shortfall could be accommodated by on-street parking, an evening on-street parking survey was conducted as the peak parking demand for residential developments generally occurs in the evening hours when most residents are home (see page 4.3-9). The survey has found that sufficient on-street parking is available within one or two blocks of the project site. With on-street parking, the potential demand of the proposed project can be fully accommodated.

Parking Analysis Conclusions

The project would provide sufficient parking supplies to meet both the Municipal Code required parking supply and the expected parking demand. If demand were to exceed supply (potential 9-space shortfall), spillover project parking would be accommodated by on-street spaces within proximity of the site.

Transit Considerations

The following aspects of transit operations are evaluated, to see if the proposed project would:

- increase the average ridership on AC Transit lines by three percent at bus stops where the average load factor with the project in place would exceed 125 percent over a peak 30-minute period;
- increase the peak-hour average ridership on BART by three percent where the passenger volume would exceed the standing capacity of BART trains;
- increase the peak-hour average ridership at a BART station by three percent where average waiting time at fare gates would exceed one minute; and/or
- increase traffic congestion resulting in substantially increased travel times for AC Transit buses.

The proposed project would result in an increased ridership on public transit services. As discussed in *Project Trip Generation* (page 4.3-25), about 24 percent of the project trips are projected to be undertaken by transit, bike or on foot. Of the 24 percent, it is estimated that 18 percent would be by transit, which translates to 21 trips (4 inbound, 17 outbound) in the AM peak hour and 25 trips (17 inbound, 8 outbound) in the PM peak hour. The 24 percent overall alternative mode use and the 18 percent transit split were conservative assumptions for the purpose of traffic impact analysis. However, they might understate the transit usage by the project, particularly during morning and after commute periods.

Project BART Ridership

Potential project-related effects on BART service were evaluated by calculating the average number of peak-hour ridership at the Fruitvale station using data obtained from BART. The project would generate about 11 BART trips (2 inbound, 9 outbound) in the AM peak hour and about 13 BART trips (9 inbound, 4 outbound) in the PM peak hour based on mode split assignment (see *Project Trip Generation*). The average ridership on the BART system through the Fruitvale station is about 14,630 people in the AM peak hour and 15,225 people in the PM peak hour, and the average number of riders at the Fruitvale station is about 1,330 people in the AM peak hour and about 1,400 people in the PM peak hour. The project would contribute less than 0.2 percent to the BART system in the peak hour and would increase the number of riders at the Fruitvale station by less than one percent.

Project AC Transit Ridership

The potential project-related impacts on AC Transit were evaluated by calculating the total number of bus trips generated by the project and distributing the trips to the bus routes near the project site. The project would generate about 10 bus trips (2 inbound, 8 outbound) in the AM peak hour and about 12 bus trips (8 inbound, 4 outbound) in the PM peak hour. There are ten bus routes serving the project area excluding Route 654 and Route 655, which serve middle schools and high schools, and Route 801, which is a night-owl route that operates between 11:30 PM and 7:00 AM. Of the ten routes, only Route 1R would have a maximum load factor of 125 percent and more with the project. However, the project would not increase the average ridership at the bus stop of Route 1R by three percent or more over a peak thirty-minute period.

Intersection Queuing Analysis

This transportation analysis evaluates the project's potential effect on 95th percentile queuing, to see if the proposed project would cause an increase in a 95th percentile queue length of 25 feet or more at a signalized study intersection.

Queuing analysis was carried out for all of the "with project" scenarios using the Synchro software. The software calculates the expected queue using a formula that extrapolates the length of queue based on two cycle lengths. This methodology provides reasonable results for locations operating in the LOS A through D, but can misrepresent conditions as intersection operations approach capacity. In these instances, the software output denotes the condition with a letter/symbol adjacent to the analysis output worksheet.

Instances where the project trips would add 25 or more feet to the baseline (without project) 95th percentile queue if the baseline 95th percentile queue was already over the available storage length, or where project trips would extend the queue over the available storage length, were identified. The findings are summarized below and detailed analysis and tables are provided in the background Transportation Analysis (**Appendix E.1** of this EIR).

Existing With Project Conditions

The analysis found that the project would not result in any significant queuing impact at any of the intersections.

2015 With Project Conditions

5. Fruitvale Avenue and East 8th Street: the queue for the eastbound East 8th Street left-turn and through movements would exceed available capacity during the PM peak hour under 2015 Baseline conditions, and the addition of project-generated traffic would cause the queue to increase by 41 feet. Signal timing optimization would reduce the queue length.

8. San Leandro Street and 35th Avenue: the queue for the eastbound San Leandro Street approach would exceed available capacity during the PM peak hour under 2015 Baseline conditions, and addition of project-generated traffic would cause the queue to increase by 35 feet. Implementation of Mitigation Measure TRANS-4 (eliminate

the protected left-turn signal phasing for westbound San Leandro Street and optimize the signal timing) would reduce the queue length.

10. San Leandro Street and 37th Avenue: the queue for the westbound San Leandro Street approach would exceed available capacity during the AM peak hour under 2015 Baseline conditions, and addition of project-generated traffic would cause the queue to increase by 69 feet. Signal timing optimization would reduce the queue length.

2035 With Project Conditions

5. Fruitvale Avenue and East 8th Street: the queue for the eastbound East 8th Street left-turn and through movements would exceed the available capacity during the PM peak hour under 2035 Baseline conditions, and addition of project-generated traffic would cause the queue to increase by 38 feet. Implementation of Mitigation Measure TRANS-11 (optimize the signal timing) would reduce the queue length.

6. 35th Avenue and East 12th Street: the queue for the northbound 35th Avenue approach would exceed the available capacity during the AM peak hour under 2035 Baseline conditions, and addition of project-generated traffic would cause the queue to increase by 40 feet. Implementation of Mitigation Measure TRANS-12 (restripe the northbound [35th Avenue] approach to provide one shared left-through lane and one shared through-right lane) would reduce the queue length.

10. San Leandro Street and 37th Avenue: the queue for the southbound 37th Avenue approach would exceed the available capacity during the AM peak hour under 2035 Baseline conditions, and addition of project-generated traffic would cause the queue to increase by 58 feet. Implementation of Mitigation Measure TRANS-15 (restripe the southbound 37th Avenue approach to provide one exclusive left-turn lane and one shared through-right lane, and restripe the westbound San Leandro Street approach to provide one shared left-through lane, one through lane, and one exclusive right-turn lane) would reduce the queue length.

Alternative Routes Analysis

The traffic impact and mitigation measure analysis identified one location for which the project impact could not be mitigated (i.e., would remain significant and unavoidable). Under the general trip assignment principle that "drivers would select an alternative route that is expected to have more available capacity and thus less delay," an Alternative Routes Analysis was prepared to identify alternative routes where project trips may be reassigned that would allow motorists to fully or partially bypass the locations with significant and unavoidable impacts to reach the same destinations. The findings of the Alternative Routes Analysis are presented here, with tables of 2035 LOS results provided in the background Transportation Impact Analysis (**Appendix E.1** of this DEIR).

It should be noted that in addition to choosing alternative routes to reach destinations, travelers to and from the project site could also choose alternative modes of travel, such as public transit, bicycles or walking. Although that mode switch is particularly probable for transit-oriented developments like the Fruitvale Transit Village development, to provide a conservative

assessment of potential traffic impacts, such potential mode switches are not considered in this analysis.

As described in Impact TRANS-18 (page 4.3-52), under the 2035 With Project scenario, buildout of the project would result in a significant and unavoidable impact at Intersection #14 – San Leandro Street / High Street during AM and PM peak hours. To minimize exposures to this congested location, project trips were reassigned as follows:

- *AM Peak Hour*: All outbound trips to southbound I-880 would use San Leandro Street to East 12th Street to 42nd Street (under the freeway) to reach Oakport Street and the on-ramp. The project analysis assigned 30 percent of the outbound trips to take this route, and 70 percent to take San Leandro Street to High Street to Oakport Street. Two-thirds of the outbound trips to southbound High Street would use East 12th Street to 42nd Street (under the freeway) to reach High Street; the project analysis assigned those trips to take San Leandro Street to High Street.

- *PM Peak Hour*: Ten percent of the inbound trips from southbound I-880 would use 42nd Street (under the freeway) and International Boulevard to reach the project site. The project analysis assigned those trips to High Street and San Leandro Street. Ninety percent of the inbound trips from I-880 would use High Street to Wattling Street to San Leandro Street to reach the project site; the project analysis assigned those trips to High Street and San Leandro Street.

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CHAPTER 5
Alternatives

5.1 Criteria for Selecting Alternatives

CEQA requires that the EIR compare the effects of a "reasonable range of alternatives" to the effects of the project. The alternatives selected for comparison would attain most of the basic objectives of the project and avoid or substantially lessen one or more significant effects of the project (CEQA *Guidelines*, Section 15126.6). The "range of alternatives" is governed by the "rule of reason" which requires the EIR to set forth only those alternatives necessary to permit an informed and reasoned choice by the decision-making body and informed public participation (CEQA *Guidelines*, Section 15126.6[f]). CEQA generally defines "feasible" to mean an alternative that is capable of being accomplished in a successful manner within a reasonable period, taking into account economic, environmental, social, technological, and legal factors.

The alternatives addressed in this EIR were selected based on the following factors:

1. The extent to which the alternative would accomplish most of the basic objectives of the project (identified in Chapter 3);

2. The extent to which the alternative would avoid or lessen any of the identified significant environmental effects of the project (discussed throughout Chapter 4);

3. The feasibility of the alternative, taking into account site suitability, availability of infrastructure, property control (ownership), and consistency with applicable plans and regulatory limitations;

4. The extent to which an alternative contributes to a "reasonable range" of alternatives necessary to permit a reasoned choice; and

5. The requirement of the CEQA *Guidelines* to consider a no-project alternative and to identify an environmentally superior alternative in addition to the no-project alternative (CEQA *Guidelines*, Section 15126.6(e)).

5.1.1 Significant Project Impacts

To determine alternatives that would avoid or lessen any of the identified significant environmental effects of the project, the significant impacts of the project must be considered. Impacts that are not mitigated to less-than-significant levels are considered "significant and unavoidable" ("SU"). The SU impacts identified for the proposed project are a cumulative increase in greenhouse gas emissions and the traffic impacts listed below, as they are identified,

respectively, in the *Air Quality* analysis in Section 4.1 and the *Transportation, Circulation and Parking* analysis in Section 4.3 of Chapter 4:

- **Impact AIR-6:** Construction and operation of the project would result in a cumulatively considerable increase in greenhouse-gas emissions. (This impact would be significant if the proposed BAAQMD thresholds are adopted.)
- **Impact AIR-7:** The project would conflict with an applicable plan, policy, or regulation of an appropriate regulatory agency adopted for the purpose of reducing greenhouse gas emissions. (This impact would be significant if the proposed BAAQMD thresholds are adopted.)
- **Impact TRANS-18:** Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM and PM peak hours at *Intersection #14 - San Leandro Street / High Street*, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay during the PM peak hour by more than four seconds for the critical northbound (High Street) through movement.
- **Impact TRANS-21:** Buildout of the proposed project would contribute to 2015 changes to traffic conditions on the regional and local roadways.
- **Impact TRANS-22:** Buildout of the proposed project would contribute to 2035 changes to traffic conditions on the regional and local roadways.

5.2 Alternatives Selected for Consideration

5.2.1 CEQA Alternatives

With consideration given to the selection criteria identified in Section 5.1, above, the City has selected the following reasonable range of project alternatives, which are discussed and analyzed throughout this chapter and summarized in **Table 5-1**, below:

- Alternative 1: No Project Alternative (continuation of the project site as a surface parking lot);
- Alternative 2: Lower Density Alternatives
  - Alternative 2.1 – 25 Percent and 50 Percent Lower Density
  - Alternative 2.2 – 80 Percent Lower Density; and
- Open Space/Passive Recreation Alternative (benches, tot lot, landscaping, walkways).

The City also considered a higher density project alternative and a mixed-use alternative that incorporated commercial uses for analysis in this EIR. Neither the mixed use alternative nor the higher density scenario is analyzed fully in this EIR because neither would meet the primary purpose of the CEQA alternatives analysis to consider project alternatives that would lessen one or more significant effects of the project, as previously discussed in Section 5.1. The scenarios are not analyzed fully in this EIR because the City determined that the alternatives selected for full analysis represent a reasonable “range of alternatives” necessary for decision-makers and the

TABLE 5-1
DESCRIPTION OF ALTERNATIVES

	Environmental Alternatives Analyzed						Considered but Rejected for Detailed Analysis in this EIR	
			Alternative 2: Lower Density Alternatives					
			Alt 2.1		Alt 2.2:			
	Proposed Project	Alternative 1: No Project	Lower Density (reduced 25 percent)	Lower Density (reduced 50 percent)	Lower Density (reduced 80 percent)	Alternative 3: Open Space / Passive Recreation	Higher Density (increased 45 percent)	Mixed-use with Commercial
Residential (units)	275	none	206	138	55	None	499	206
Commercial (square feet [s.f.])	None	None	None	None	None	None	None	10,000 s.f.
Institutional (s.f.)	None	None	None	None	None	None	30,000 s.f. (school, project gym or community space)	None
Buildings	3, 4-story apt bldgs	None	2, 4-story apt bldgs; undeveloped area remains surface parking	1, 4- story apt bldg; undeveloped area remains surface parking	1, 2-story apt bldgs; undeveloped area as open space or yards	None	11, 4-story townhomes; 3 residential towers over parking	2, 4-story apt bldgs
Parking (spaces)	277 (5-level parking structure)	547 (surface lot)	206 (4-level parking structure)	138 (3-level parking structure)	55 (surface parking lot)	None	599 (3-level podium under residential towers; 1 underground level)	206 (4-level parking structure)

public to make a reasoned and informed evaluation of the project and feasible alternatives, as also previously discussed in Section 5.1. Both scenarios are summarized in Table 5-1 and described in more detail in Section 5.5 at the end of this chapter.

5.3 Description and Analysis of CEQA Alternatives

Throughout this section, a detailed description of each alternative is followed by a discussion of impacts and how those impacts compare to those of the project and the City's CEQA thresholds.

As permitted by CEQA, the effects of the alternatives are discussed in less detail than the discussion of the impacts of the project in Chapter 4 (CEQA *Guidelines* Section 15126.6[d]). However, the alternatives analysis is conducted at a sufficient level of detail to provide the public, other public agencies, and City decision-makers adequate information to evaluate fully the alternatives and for the City to approve any of the alternatives without further environmental review.

The impacts associated with the project and each alternative are stated as levels of significance *after* implementation of mitigation measures and/or standard conditions identified in Chapter 4. For each alternative, the relative impacts compared to the project's significant and unavoidable impacts (greenhouse gas emissions and traffic impacts) are discussed first, followed by the relative impacts compared to the project's less-than-significant impacts. **Table 5-6**, Summary of Impacts: Project and Alternatives, provided at the end of this chapter, summarizes each alternative and indicates, the impact level for each environmental topic compared to the proposed project and each of the other alternatives fully analyzed herein. The analysis covered all the environmental topics in the Initial Study and the EIR.

5.3.1 Alternative 1: No Project Alternative

Description

The purpose of the "No Project" Alternative in the CEQA analysis is to allow a comparison of the environmental impacts that would result if the project were not approved with those that would occur if the project were approved. In some situations, as is the case with this proposed project, the existing environment (the existing development and uses on the property) would not change if a project is not approved, and the "No Project" alternative would be a continuation of existing conditions.

Under the No Project Alternative defined for this EIR analysis, the 547-space surface parking lot would remain and continue to be operated by the Project Applicant. The parking lot would continue to be open to the public and BART patrons, and there would continue to be a fee for parking in the lot. BART would retain ownership of the site. This alternative assumes that maintenance of the parking lot and ancillary facilities (e.g., lights, trees, etc.) would continue and that the physical conditions of the site would remain substantially unchanged.

Impacts

Compared to Significant and Unavoidable Impacts Identified for the Project

GHG Emissions

Compared to the proposed project, the No Project Alternative would avoid the significant and unavoidable increase in GHG emissions related to construction and operation of the proposed project. No new development would occur and no new vehicle trips would be generated from the project site, therefore, there would be no new GHG emissions.

Traffic Impacts

Compared to the proposed project, the No Project Alternative would avoid all of the significant and unavoidable impacts identified for the proposed project. No new development would occur on the existing surface parking lot, therefore, there would be no new vehicle trips generated from the project site.

Compared to Less-than-Significant Impacts Identified for the Project

Overall, the No Project Alternative would avoid all of the less-than-significant impacts (reduced after implementation of mitigation measures or standard conditions) identified for each environmental topic addressed in this EIR and in the Initial Study (provided in Appendix A to this document). However, as noted in the relevant sections below, there are site improvements that would occur with development of the proposed project that would not occur under the No Project Alternative, in which case the No Project conditions may be worse than with the proposed project. For example, new landscaping and open space areas that would be created by the proposed project would not be constructed, and therefore the impervious paved surface parking lot would continue to occupy the project site, and water quality improvements from reduced stormwater runoff (by replacing existing paved area with landscaping or other pervious surfaces) would not occur.

Aesthetics

Compared to the proposed project, this alternative would avoid the less-than-significant impacts identified for the project. No changes would occur on the project site, therefore this alternative would not result in new light and glare or shadow, or degrade any scenic resources or the visual character or quality of the project site and surroundings.

Air Quality

The less-than-significant impacts to air quality from construction and operation of the proposed project would not occur with this alternative, since no new development would occur on the site.

Biological Resources

Under this alternative, the 82 trees that are present on or along the periphery of the project site would remain in place. Therefore, birds nesting in those trees would not be disturbed, new plantings would not be needed, and no trees would be removed. Also, since no new development

or alterations would occur on the site, no biological resources (species or habitat) would be affected, and this alternative would avoid the less-than-significant impacts to biological resources identified for the project.

Cultural Resources

Project construction activities would not occur under this alternative, and subsurface disturbance would be avoided. Accidental damage or destruction of significant historic-period archaeological sites or paleontological resources would not occur. Any human remains at the project site would be undisturbed. Therefore, this alternative would avoid the less-than-significant cultural resources impacts identified for the project.

Geology and Soils

No construction or new development would occur on the project site under this alternative, therefore no new population or structures would be exposed to hazardous seismic, soil, or subsurface conditions. Also, construction activities associated with the proposed project would not occur, so potential soil erosion at the project site would not occur. Overall, this alternative would avoid the less-than-significant geology and soils impacts identified for the project.

Hazards and Hazardous Materials

Construction activities associated with the proposed project would not occur, and no new uses or structures would result on the project site. Therefore, this alternative would avoid the less-than-significant impacts identified with the proposed project related to the potential for accidental spills of hazardous materials during construction, and exposure of the public to any hazardous risks during construction and operations.

Hydrology and Water Quality

No potentially contaminated groundwater associated with construction activities, or any potential increases in contaminated stormwater runoff from the site during construction or operations would occur since no changes would occur to the project site with this alternative. Nor would any housing or other structures be developed to affect existing flood flows. Overall, this alternative would avoid the less-than-significant hydrology and water quality impacts identified with the project.

However, this alternative would maintain existing impervious surfaces, which is substantially greater than what would result with the proposed project, and consequently, it is possible that the existing potential for contaminated stormwater to enter the stormwater system or impact the storm drainage system capacity is greater with this alternative than for the proposed project. This analysis does not assume that existing stormwater runoff quality conditions from the site violate existing thresholds, only that improvements to existing conditions that would occur with the proposed project would not occur under this alternative.

Land Use and Planning

The project site and existing land use (BART-related surface parking) would remain unchanged from present conditions. Therefore, there would be no conflict with existing land use or communities.

Regarding applicable plans and policies adopted to address environmental effects, this alternative would not support the goals of the respective General Plan land use classifications or the Coliseum Redevelopment Plan. For example, SB 375 and the City's goals and plans supporting higher-density residential land uses and transit-oriented development at this project site adjacent to BART would not be realized. Although developing the proposed project would result in environmental impacts, this analysis acknowledges the broader positive environmental effects on local and regional vehicle trips and traffic-related air quality and greenhouse gas emissions gained through building new, higher-density housing near transit. Overall, this alternative would avoid the less-than-significant land use plan / policy impact identified for the project; the existing conditions are not considered to be in conflict with the City's existing land use plans or policies.

Noise

The less-than-significant noise impacts from construction and operation of the proposed project would be avoided under this alternative, since no construction or new development would occur.

Population and Housing

The additional population growth anticipated with the proposed project would not take place under this alternative since no new development would occur. This alternative would avoid the less-than-significant population impact identified for the proposed project.

Public Services / Recreation

No new development would occur and the demand for public services or use of recreational facilities would remain unchanged from the present state. This alternative would avoid the less-than-significant public services and recreation impacts identified for the proposed project.

Utilities and Service Systems

No new development would occur and the demand for utilities and service systems would remain unchanged from the present state. There would be no increased demand for wastewater treatment or stormwater drainage facilities, water supply, solid waste disposal services or facilities, or energy. This alternative would avoid the less-than-significant utility and service system impacts identified for the proposed project.

5.3.2 Alternative 2: Lower Density Alternatives

Alternative 2.1: 25 Percent and 50 Percent Lower Density

Description

Under this alternative, a total of either 206 or 138 units would be constructed, representing a 25 percent or 50 percent reduction, respectively, in the total number of units proposed by the project.

Compared to the four phases of development (three, four-story apartment buildings) proposed by the project, the 25 Percent Lower Density Alternative (206 units) would construct only two phases (two, four-story apartment buildings). The 25 Percent Lower Density Alternative would construct buildings on the northern portion of the project site (approximately 65 percent of the site area that would be occupied by the proposed project). The parking structure would be reduced to four levels (206 spaces) compared to five levels (277 spaces) with the project.

Compared to the four phases of development (three, four-story apartment buildings) proposed by the project, the 50 Percent Lower Density Alternative (138 units) would construct only one phase (one, four-story apartment building) of the proposed project. The 138-unit building would be constructed on the eastern portion of the project site (approximately 50 percent of the site area that would be occupied by the proposed project). The parking structure would be reduced to three levels (138 spaces) with this alternative, compared to five levels (277 spaces) with the project.

All other aspects of the 25 Percent and 50 Percent Lower Density Alternatives would be consistent with the proposed project, except that 1) the site area not occupied by residential buildings or parking structure would remain as a paved surface parking lot or circulation/access necessary to serve the project buildings and garage, and 2) there would be fewer landscaped courtyard areas located between the proposed buildings since there would be fewer buildings.

Alternatively, the potential exists for the lower density alternatives to be redesigned to utilize the entire 3.4-acre project site.

Impacts

Compared to Significant and Unavoidable Impacts Identified for the Project

GHG Emissions

Compared to the proposed project, the 25 Percent Lower Density Alternative would generate total CO_2e of 2,280; and the 50 Percent Lower Density Alternative would generate total CO_2e of 1,529, both of which are greater than the BAAQMD proposed GHG threshold and the proposed project emissions, as shown in **Tables 5-2** and **5-3** below. Therefore, both alternatives would continue to have similar significant and unavoidable GHG emissions impacts [Impact AIR-6 and AIR-7] as identified for the proposed project.

TABLE 5-2
25 PERCENT UNIT REDUCTION ALTERNATIVE (206 UNITS) – ESTIMATED EMISSIONS OF GREENHOUSE GASES FROM ALTERNATIVE OPERATIONS AND CITYWIDE

	Emissions (metric tons CO_2e per year)			
Emission Source	**CO_2**	**CH_4**	**N_2O**	**Total CO_2e**
Motor Vehicle Trips	1,163	4	73	1,240
Area Sources (i.e., Space Heating, Landscape maintenance, etc)	347	16	3	366
Indirect Electricity Generation	415	<1	1	416
Solid Waste Generation	---	258	---	258
Total Operational GHG Emissions from 25 Percent Lower Density	1,925	278	77	**2,280**
BAAQMD Proposed GHG Threshold				*1,100*
Total Operational GHG Emissions from Project				*3,042*

SOURCE: ESA, 2009

TABLE 5-3
50 PERCENT REDUCTION ALTERNATIVE (138 UNITS) – ESTIMATED EMISSIONS OF GREENHOUSE GASES FROM ALTERNATIVE OPERATIONS AND CITYWIDE

	Emissions (metric tons CO_2e per year)			
Emission Source	**CO_2**	**CH_4**	**N_2O**	**Total CO_2e**
Motor Vehicle Trips	779	3	49	831
Area Sources (i.e., Space Heating, Landscape maintenance, etc)	233	11	2	246
Indirect Electricity Generation	278	<1	1	279
Solid Waste Generation	---	173	---	173
Total Operational GHG Emissions from 50 Percent Lower Density	1,290	187	52	**1,529**
BAAQMD Proposed GHG Threshold				***1,100***
Total Operational GHG Emissions from Project				*3,042*

SOURCE: ESA, 2009

To reduce the total CO2e to below the GHG threshold (and the project's emission levels) would require reducing the density of the proposed project by approximately 72 percent. A comparable reduced density scenario is analyzed below as Alternative 2.2, the 80 Percent Lower Density Alternative.

Traffic Impacts

Compared to the proposed project, the 25 Percent Lower Density Alternative would generate 70 trips (compared to 88 for the proposed project) in the AM peak hour (including 12 inbound trips and 58 outbound trips) and 82 trips (compared to 105) in the PM peak hour (including 55 inbound trips and 27 outbound trips). As a result, this alternative would have less impact on the surrounding roadway network (i.e., reduce the number of intersections where a significant but mitigable impact would occur) when compared to the proposed project, and would not cause the significant and unavoidable 2015 and 2035 impacts [Impact TRANS-21 and 22] to regional MTS roadways identified for the project. However, the 25 Percent Lower Density Alternative would result in similar significant and unavoidable 2035 intersection impact as identified for the proposed project at Intersection #14 High Street / San Leandro Street [Impact TRANS-18]. (See the LOS data for this alternative in Appendix F.)

Compared to the proposed project, the 50 Percent Lower Density Alternative would generate 50 trips (compared to 88 for the proposed project) in the AM peak hour (including 8 inbound trips and 42 outbound trips) and 60 trips (compared to 105) in the PM peak hour (including 40 inbound trips and 20 outbound trips). As a result, this alternative would also have less impact on the surrounding roadway network (i.e., reduce the number of intersections where a significant but mitigable impact would occur) when compared to the proposed project, and would not cause the significant and unavoidable 2015 and 2035 impacts [Impact TRANS-21 and 22] to regional MTS roadways identified for the project. However, like the 25 Percent Lower Density Alternative, the 50 Percent Lower Density Alternative would also result in similar significant and unavoidable intersection impacts as identified for the proposed project in 2035 at Intersection #14 High Street / San Leandro Street [Impact TRANS-18]. (See the LOS data for this alternative in Appendix F.)

Compared to the Less-than-Significant Impacts Identified for the Project

Aesthetics

Compared to the proposed project, these alternatives would result in similar less-than-significant impacts as identified for the project. With less development (fewer buildings over less area) and resulting vehicle trips, light and glare impacts to surrounding homes and businesses, as well as shadow impacts, would be less than with the proposed project. With fewer new buildings, these alternatives would have a lesser effect on the visual character or quality of the surrounding area. In a scenario where the lower density alternatives could be developed over the entire project site, the impacts would still be less than identified for the proposed project given the overall reduced development (number of buildings and units).

Air Quality

With less development (fewer buildings over less area), the impacts to air quality from construction and operation with these alternatives would be less than for the proposed project. The resulting effect would be similar to the less-than-significant impacts identified for the project. In a scenario where the lower density alternatives could be developed over the entire project site, the impacts would still be less than identified for the proposed project given the overall reduced development (number of buildings and units to be constructed and operated).

Biological Resources

Under these alternatives, several of the trees that are present on or along the periphery of the site would remain in place, and consequently, birds nesting in those trees affected would be disturbed, as with the proposed project. The development under these alternatives would not be substantially different from the proposed project, except for the reduced site area impacted. Therefore, these alternatives would have similar less-than-significant impacts to biological resources (species or habitat) as identified for the project.

Cultural Resources

Project construction activities and subsurface disturbance resulting in the risk of accidental damage or destruction of significant historic-period archaeological sites or paleontological resources would be reduced under these alternatives, since less site area would be affected for construction. Likewise, the potential for human remains to be disturbed would be reduced. Therefore, these alternatives would result in similar but reduced less-than-significant cultural resources impacts as identified for the project.

Geology and Soils

Construction area required for these alternatives would be less than for the proposed project, however, the potential for soil erosion at the project site would occur. The result would be similar less-than-significant soils impact as identified for the project. New population and structures would occur on the site under these alternatives, and they would be exposed to existing potential hazardous seismic, soil, or subsurface conditions. Thus, these alternatives would have similar less-than-significant geology and soils impacts as identified for the proposed project.

Hazards and Hazardous Materials

Construction activities would occur and new uses and structures would be developed on the site under these alternatives. Therefore, these alternatives would result in similar less-than-significant impacts as identified with the proposed project related to the potential for accidental spills of hazardous materials during construction and exposing the public to any hazardous risks during construction and operations.

Hydrology and Water Quality

The impacts of contaminated groundwater associated with construction activities, or any potential increases in contaminated stormwater runoff from the site during construction or operations would be similar to that for the proposed project. The 25 Percent and 50 Percent Lower Density Alternatives have the potential to leave more existing impervious surfaces compared to the proposed project, since there would be less courtyard space given fewer buildings and since the undeveloped area would remain an existing paved surface parking lot. As a result, these alternatives would have the reduced but still less-than-significant water quality impacts compared to those identified for the project. Since fewer changes would occur to the project site (with fewer buildings being developed), these alternatives also would have less effect on existing flood flows, and the impact would be less than significant, as identified for the proposed project.

In a scenario where the lower density alternatives could be developed over the entire project site, the impact would also be less than that compared to the project since development of such a scenario would convert more of the existing paved parking lot area to open space or other pervious surface around the new buildings than would the proposed project.

Land Use and Planning

The 25 Percent and 50 Percent Lower Density Alternatives would alter the project site and existing land use similar to the proposed project. Therefore, these alternatives would result in similar less-than-significant land use impacts as identified for the project.

Regarding applicable plans and policies adopted to address environmental effects, these alternatives would support the goals of the respective General Plan land use classifications or the Coliseum Redevelopment Plan (as the proposed project would), but to a lesser degree. As similarly discussed under Alternative 1, these alternatives would support SB 375 and the City's goals and plans supporting higher-density residential land uses and transit-oriented development at this project site adjacent to BART less than the project would since fewer units would be developed on the site. However, these alternatives would reduce air quality and traffic impacts compared to the proposed project, and they would also have some level of broader positive environmental effects on local and regional vehicle trips and traffic-related air quality and greenhouse gas emissions gained by building housing (albeit at lower density than the project) near transit and services. Overall, these alternatives would have similar less-than-significant land use plan / policy impact as identified for the project.

Also, although these alternatives would not be a higher-density project as intended for S-15 Transit Oriented Development Zones, low-density housing is permitted in this zone. Depending on its ultimate configuration, low-density housing would be permitted outright or conditionally permitted.

Noise

Construction and operational noise impacts would be incrementally less in duration and relative levels than those of the proposed project because fewer structures would be constructed, resulting in a shorter construction period. Also, because there would be less development, traffic volumes and resulting roadway noise would be lower than those for the proposed project. These alternatives would result in reduced but similar less-than-significant noise impacts as identified for the project.

Population and Housing

Additional population growth would occur with these alternatives, and at levels less than with the proposed project. Therefore, these alternatives would result in similar less-than-significant population impact regarding substantial population growth that was identified for the proposed project. Like the proposed project, the Lower Density Alternatives would result in no adverse impacts to existing housing or people at the site since the site is currently used as a surface parking lot.

Public Services / Recreation

There would be less demand for public services and recreational facilities compared to the proposed project since less development would occur with these alternatives. Therefore, these alternatives would result in similar less-than-significant public services and recreation impacts as identified for the project. Also, the Lower Density Alternatives would provide for recreational activities for the residents within the project site similar to the proposed project.

Utilities and Service Systems

There would be less demand for utility and service systems compared to the proposed project since less development would occur with these alternatives. Specifically, there would be less demand for wastewater treatment or stormwater drainage facilities, water supply, solid waste disposal services or facilities, or energy. These alternatives would have similar less-than-significant utility and service system impacts as identified for the proposed project.

Alternative 2.2: 80 Percent Lower Density Alternative

Description

Under this alternative, a total of 55 units would be constructed, which reflects an 80 percent reduction in the total number of units proposed by the project.

Compared to the four phases of development (three, four-story apartment buildings) proposed by the project, the 80 Percent Lower Density Alternative (55 units) would be constructed in one phase (one, two-story apartment building). Either this low-density development could be clustered on the eastern portion of the project site, resulting in a large open space area on the western side of the site; or development could be spread throughout the site, resulting in large yards for each unit and large common areas throughout. Parking would be provided at a ratio of one space per unit (55 units), as with the proposed project, except that parking could be provided in close proximity to each unit, thereby eliminating the need for a parking structure.

The 80 Percent Lower Density Alternative is included in this analysis because it would reduce significant and unavoidable impacts identified for the project to less than significant (with mitigation and/or standard conditions). However, it would not meet relevant goals of the City in the General Plan LUTE for the San Antonio-Fruitvale-Lower Hills Planning Area, the 2004 Housing Element, and the Coliseum Area Redevelopment Plan, which identify transit-oriented areas as high-density areas with mixed-uses, as well as broader goals set forth in SB 375 supporting transit-oriented development to lower the impacts of greenhouse gases and climate change. In addition, this 80 Percent Lower Density Alternative, as well as the 25 and 50 Percent Lower Density Alternatives discussed as Alternative 2.1 above, would result in substantially fewer impacts than the 275 transit-oriented multi-family residential units proposed by the project and identified as a Project Objective (see Section 3.2 of the *Project Description*).

Impacts

Compared to Significant and Unavoidable Impacts Identified for the Project

Greenhouse Gas Emissions

Compared to the proposed project, the 80 Percent Lower Density Alternative would generate a total CO_2e of 684, which is lower than the BAAQMD proposed GHG threshold and the proposed project emissions, as shown in **Table 5-4** below.

TABLE 5-4
80 PERCENT LOWER DENSITY ALTERNATIVE (55 UNITS) – ESTIMATED EMISSIONS OF GREENHOUSE GASES FROM ALTERNATIVE OPERATIONS AND CITYWIDE

	Emissions (metric tons CO_2e per year)			
Emission Source	**CO_2**	**CH_4**	**N_2O**	**Total CO_2e**
Motor Vehicle Trips	381	1	24	406
Area Sources (i.e., Space Heating, Landscape maintenance, etc)	93	4	1	98
Indirect Electricity Generation	111	<1	<1	111
Solid Waste Generation	---	69	---	69
Total Operational GHG Emissions from Project	585	74	25	**684**
BAAQMD Proposed GHG Threshold				*1,100*
Total Operational GHG Emissions from Project				*3,042*

SOURCE: ESA 2009

As a result, the 80 Percent Lower Density Alternative would avoid the significant and unavoidable impacts greenhouse gas emissions [Impacts AIR-6 and AIR-7] that would occur with the proposed project.

As mentioned in the *Description* above, and discussed below in more detail under *Land Use*, Senate Bill 375 aims to reduce urban sprawl and encourages dense, sustainable development with walkable amenities and a lower carbon impact. SB 375 requires cities and counties to promote transit-oriented development in communities in order to lower the impacts of greenhouse gases and climate change. The project site location is ideal for meeting the requirements of transit-oriented development because of its proximity to the Fruitvale BART Station and the services and retail establishments available in the Phase 1 development adjacent to the project site, as well as the shopping district on International Boulevard one block away. City plans and policies also support the development of high-density housing at this BART location to reduce effects of greenhouse gas emissions and climate change in large part through reducing the need for automobile use. By developing only 55 units under this 80 Percent Lower Density Alternative, the full benefits of creating housing close to transit, services and commercial and retail uses would not be realized.

Traffic Intersection Impacts

Compared to the proposed project, the 80 Percent Lower Density Alternative would generate 24 trips (compared to 88 for the proposed project) in the AM peak hour, consisting of including 4 inbound trips and 21 outbound trips; and 28 trips (compared to 105) in the PM peak hour, consisting of 19 inbound trips and 9 outbound trips. As a result, this alternative would have a less intense impact on the roadway network, and would result in fewer significant impacts at the study intersections compared to the proposed project. In particular, this alternative would avoid the significant and unavoidable intersection impacts identified for the proposed project in 2035 at Intersection #14 High Street / San Leandro Street [Impact TRANS-18], and the significant and unavoidable 2015 and 2035 impacts [Impact TRANS-21 and 22] to regional MTS roadways identified for the project. Further, all of the significant impacts to study intersections could be mitigated to less-than-significant levels (see Traffic Impact Analysis in Appendix E) with the same mitigation measures required for the proposed project.

Compared to the Less-than-Significant Impacts Identified for the Project

Aesthetics

With substantially fewer units than the proposed project and fewer outdoor lights and vehicles, light and glare impacts to surrounding homes and businesses, as well as shadow impacts, would be less than for the proposed project. With only one building, which would be two stories lower than those proposed with the project, and more open landscaped space, this alternative would continue to change the visual character and quality of the surrounding area, but to a different (but still not adverse) effect compared to the project, given the substantial change resulting from a large new open space area or large residential yards throughout the site, instead of three additional new buildings, less open space (courtyards) and a parking structure, as proposed by the project. Overall, this alternative would result in reduced but similar less-than-significant aesthetics impacts as identified for the project.

Air Quality

The impacts to air quality from construction and operation with this alternative would be less than for the proposed project because of the reduced construction time and activities and because this alternative would result in fewer units and resulting vehicle trips and emissions. The resulting effect would be similar less-than-significant impacts as identified for the project.

Biological Resources

Under this alternative, several of the trees that are present on or along the periphery of the site would remain in place, and consequently, birds nesting in those trees affected would be disturbed, as with the proposed project. Overall, the same site area would be affected, although a greater area would be open space or large yards. This alternative would have similar less-than-significant impacts to biological resources (species or habitat) as identified for the project.

Cultural Resources

Project construction activities and subsurface disturbance resulting in the risk of accidental damage or destruction of significant historic-period archaeological sites or paleontological resources, or the

disturbance of human remains, would be reduced since only one structure would be built, although the entire site would be altered. Therefore, this alternative would result in similar but reduced less-than-significant cultural resources impacts as identified for the project.

Geology and Soils

Construction activities across most of the project site would be less than that required for the proposed project, and the result would be similar less-than-significant soils impact as identified for the project. New population and structures would occur on the site under this alternative, and they would be exposed to existing potential hazardous seismic, soil, or subsurface conditions. Thus, this alternative would have similar less-than-significant geology and soils impacts as identified for the project.

Hazards and Hazardous Materials

Construction activities would occur and new uses and structures would be developed on the site under this alternative. Therefore, this alternative would result in similar less-than-significant impacts as identified with the proposed project related to the potential for accidental spills of hazardous materials during construction to be avoided and exposure of the public to any hazardous risks during construction and operations.

Hydrology and Water Quality

The impacts of contaminated groundwater associated with construction activities, or any potential increases in contaminated stormwater runoff from the site during construction or operations would be similar to that for the proposed project. The 80 Percent Lower Density Alternative would result in more pervious surface area compared to the proposed project because development would either be clustered on the eastern portion of the project site, resulting in a large open space area on the western side of the site; or development could be spread throughout the site, resulting in large yards for each unit and large common areas. This would reduce the amount of stormwater entering the City's stormwater drainage system. As a result, this alternative would have the reduced but still less-than-significant water quality impacts compared to those identified for the project. Since fewer changes would occur to the project site (with fewer buildings being developed), this alternative also would have less effect on existing flood flows, and the impact would be less than significant, as identified for the proposed project.

Land Use and Planning

The 80 Percent Lower Density Alternative would alter the project site and existing land use, as would the proposed project, but the changes would differ from the project changes in that this alternative would include extensive open space or large yards across the site. The change to the site or the uses would not be adverse or conflict with existing land uses or communities. Therefore, this alternative would result in similar less-than-significant land use impacts as identified for the project.

Because this site has long been considered for higher density housing that would expand limited housing opportunities in the Fruitvale neighborhood and surrounding areas, an 80 Percent Lower

Density Alternative could be considered an unsatisfactory alternative. As previously discussed for the 25 and 50 Percent Lower Density Alternatives, regarding applicable plans and policies adopted to address environmental effects, this alternative would support the goals of the respective General Plan land use classifications or the Coliseum Redevelopment Plan (as the proposed project would), but to a substantially lesser degree than the proposed project, or the other reduced density alternatives. This alternative would fail to support SB 375 and the City's goals and plans supporting higher-density residential land uses and transit-oriented development at this project site adjacent to BART less than the project would since only 55 units would be developed on the site with much greater capacity. As also previously discussed in the *Description* of this alternative and the greenhouse gases discussions, above, the 80 Percent Lower Density Alternative would avoid significant and unavoidable air quality and traffic impacts compared to the proposed project, but would not substantially gain any broader positive environmental effects on local and regional vehicle trips and traffic-related air quality and greenhouse gas emissions resulting from building housing near transit and services. Overall, this alternative would have similar less-than-significant land use plan / policy impact as identified for the project, although it would not fully support existing plans and policies.

Also, although the proposed project would not be a higher-density project as intended for S-15 Transit Oriented Development Zones, low-density housing is permitted in this zone. Depending on its ultimate configuration, low-density housing would be permitted outright or conditionally permitted.

Noise

Construction and operational noise impacts would be incrementally less in duration and relative levels than those of the proposed project because fewer structures would be constructed, resulting in a shorter construction period. Also, because there would be less development, there would be less vehicle traffic and resulting roadway noise compared to the proposed project. This alternative result in reduced but similar less-than-significant noise impacts as identified for the project.

Population and Housing

Like the proposed project, this alternative would not result in the need to remove housing or people since no such uses exist on the site. As compared to the proposed project, this alternative would result in fewer residents at the site, therefore, it would result in similar less-than-significant population impact regarding substantial population growth as identified for the proposed project.

Public Services / Recreation

There would be less demand for public services compared to the proposed project since less development would occur with this alternative. Also, this alternative would result in a large open space area and/or larger common areas and yards, and could reduce the demand for recreational space more than would the proposed project. Also, this alternative would provide for recreational activities for the residents within the project site similar to the proposed project. Therefore, this alternative would result in similar less-than-significant public services and recreation impacts as identified for the project.

Utilities and Service Systems

There would be substantially less demand for utilities and service systems compared to the proposed project since less development would occur with this alternative. Specifically, there would be less demand for wastewater treatment or stormwater drainage facilities, water supply, solid waste disposal services or facilities, or energy. This alternative would have similar less-than-significant utility and service system impacts as identified for the proposed project.

5.3.3 Alternative 3: Open Space / Passive Recreation

The Open Space / Passive Recreation Alternative provides an alternative to residential land use on the project site and would reduce the significant impacts identified with the proposed project. Under this alternative, the entire 3.4-acre site would consist of open space with limited amenities, such as a tot lot, playground area, and benches. The site would have contoured terrain and landscaping throughout to discourage use of the site for field games. It is expected that the park would draw visitors from surrounding neighborhoods, who would arrive primarily by non-vehicular modes, by walking or biking. The park would also serve existing patrons and residents of the Fruitvale Transit Village. Children from the childcare center across 35th Avenue may visit the tot lot and playground, and the workers from nearby businesses may use the open space throughout the day.

Parking at the site under this alternative would be very limited or non-existent since the existing surface parking lot used for the public and BART patrons would be replaced with open space and not include new parking facilities.

The Open Space / Passive Recreation Alternative is included in this analysis because it would avoid or substantially reduce significant and unavoidable impacts identified for the project to less than significant (with mitigation and/or standard conditions). Although the Fruitvale area in general lacks sufficient open space and recreation facilities, Alternative 3 would conflict with nearly all of the Project Objectives outlined in Section 3.2 of the *Project Description*. However, this Alternative would develop an "underutilized property in a manner that improves environmental conditions at the site." It would fail to meet project objectives related to housing, strengthening the economic base of the area, or providing transit-oriented development, or align with other City plans and policies that envision high-density housing development at this Fruitvale BART location.

Impacts

Compared to Significant and Unavoidable Impacts Identified for the Project

Greenhouse Gas Emissions

Construction of the open space area would generate short-term greenhouse gas emissions impacts that would be considerably less than for the proposed project. Compared to the proposed project,

the operation phase of Alternative 3 would generate no or very little greenhouse gas emissions because it is assumed that users of the open space would arrive primarily by non-vehicular modes, such as walking or biking. Overall, this alternative would avoid the significant and unavoidable impacts greenhouse gas emissions [Impacts AIR-6 and AIR-7] that would occur with the proposed project.

Traffic Impacts

It is anticipated that the number of new vehicular trips generated by Alternative 3 during the weekday AM and PM peak hours would be far fewer than that of the proposed project and even that of Alternative 2, the Lower Density Alternatives. Therefore, this analysis determines that this alternative would avoid all significant and unavoidable traffic impacts identified for the proposed project and would not result in any transportation related impacts because the park would be designed in accordance with established standards and policies.

Compared to Less-than-Significant Impacts Identified for the Project

Aesthetics

Light and glare impacts to surrounding homes and businesses, and new shadow impacts, would be less than would occur with the proposed project. Although some on-site lighting would be provided for security purposes, this lighting would be directed inward toward the open space, consistent with applicable standard conditions. Street lighting would still be required along street rights-of-way. The park itself would provide a visually attractive addition to the neighborhood. The visual character and quality of the surrounding area would still change, but to a different (but still not adverse) effect compared to the project, given the substantial change resulting from a new park instead of the project development on the site. Overall, although the effects would be reduced, this alternative would result in less-than-significant aesthetics impacts, as identified for the project.

Air Quality

The impacts to air quality for this alternative would result from removing the existing pavement, grading, and installation of landscaping and limited park amenities. Operation of this alternative would result in substantially reduced air quality emissions because most users would walk or, for example ride bicycles to the park, and therefore there would be substantially fewer vehicle trips associated with the new use. Overall, although the effects would be less than with the project, this alternative would result in less-than-significant air quality impacts, as identified for the project.

Biological Resources

Most of the trees that are present on or peripheral to the site would remain in place, and consequently, birds nesting in those trees would not be disturbed. Fewer trees would be removed and new plantings would be required to conform to City goals and policies regarding landscaping in public parks. Although the effects would be less than with the project, this alternative would result in less-than-significant biological resources (species or habitat) impacts, as identified for the project.

Cultural Resources

Project construction activities and subsurface disturbance resulting in the risk of accidental damage or destruction of significant historic-period archaeological sites or paleontological resources would be substantially reduced because there would be no construction of buildings. Likewise, the potential for human remains to be disturbed would be reduced. Although the potential effects would be less than with the project, this alternative would result in less-than-significant cultural resources impacts, as identified for the project.

Geology and Soils

Construction activities associated with the proposed project would be reduced because of the immediate reuse of the site for landscaping and limited amenities. During the lifetime of the park, wind and water erosion would be limited because paved surfaces would be limited or non-existent. Potential damage and danger to structures or people from seismic events would be limited compared to the project. Although the potential effects would be less than with the project, this alternative would result in less-than-significant geology and soils impacts, as identified for the project.

Hazards and Hazardous Materials

Construction activities would be less than for the proposed project and consequently, the potential for accidental spills of hazardous materials during construction or operations would be avoided. Limited or no use of fertilizers or other potential contaminants would be used for landscaping. This alternative would have reduced potential effects to hazards and hazardous materials, and would result in less-than-significant impacts, as identified for the project.

Hydrology and Water Quality

The impacts of contaminated groundwater associated with construction activities, or any potential increases in contaminated stormwater runoff from landscape maintenance during operation would be less than for the proposed project. This alternative would result in substantially more pervious surface area compared to the proposed project because of the extensive landscaping and open space. This would reduce the amount of stormwater runoff from the site. Since only small recreational structures may be developed, this alternative would have less effect on existing flood flows, and the impacts would be less than significant, as identified for the proposed project.

Land Use and Planning

Alternative 3 would alter the project site and uses, although to a lesser degree than the proposed project since no new buildings would be constructed. The open space use would not be adverse or conflict with existing land uses or communities. Therefore, this alternative would result in similar less-than-significant land use impacts as identified for the project.

Regarding applicable plans and policies adopted to address environmental effects, this alternative would not fully support existing City plans and policies to develop high-density housing at this Fruitvale BART location, however, it would support General Plan goals to address the existing shortage of open space in the Fruitvale area. Also, it would not conflict with goals supporting the provision of increased open space benefitting climate change reduction strategies. Therefore, this

alternative would result in less-than-significant impacts regarding plans and policy consistency, as identified for the project.

This open space use may result in the need for a rezoning; however, this would not necessarily conflict with a land use plan since it may also trigger a need to amend the General Plan.

Noise

Construction and operational noise impacts would be less in duration and relative levels than those of the proposed project because no buildings would be constructed and there would be substantially fewer vehicle trips associated with the park use since most users would walk or, for example, ride bicycles to the site. Although substantially reduced, this alternative would result in less-than-significant noise impacts, as identified for the project.

Proximity to the BART tracks along the western portion of the site would result in noise levels that would vary at intervals throughout the day. As discussed in the *Noise* analysis in Section 4.2 in Chapter 4 of this EIR, based on the noise measurements conducted at the project site, persons onsite could experience outdoor noise levels ranging from 71 to 74 dBA Leq at 50 feet from BART, and 65 to 69 dBA Leq at 50 feet from East 12th Street. As shown in Figure 4.2-3, these noise levels are considered in the "normally acceptable" and "conditionally acceptable" range for "playgrounds and neighborhood parks," according to land use compatibility standards used by the City of Oakland. Therefore, this alternative would result in a less-than-significant noise compatibility impact identified for the project.

Population and Housing

Alternative 3 would result in no population growth since no residential uses or business would be developed. Also, no housing or people would be displaced from the project site. This alternative would have no impact, compared to the less-than-significant impact identified for the project.

Public Services / Recreation

There would be less demand for public services compared to the project, since it would not result in new development or increased resident population onsite. Compared to the proposed project, this alternative would not result in increased use of existing recreational facilities (but would likely relieve existing demand on nearby facilities), and although it would be a new recreational facility, its development or use would not result in adverse physical effects on the environment. Therefore, this alternative would have less-than-significant impacts regarding increased demand for public services and increased adverse effects from the new open space, and would have no impact regarding increased use of existing recreational facilities resulting from the project.

Utilities and Service Systems

Alternative 3 would result in reduced demand for water, and little or no demand for stormwater or wastewater treatment, solid waste disposal or energy compared to the proposed project. Although demand would be substantially reduced, this alternative would have less-than-significant utility and service system impacts, as identified for the proposed project.

5.4 Environmentally Superior Alternative

CEQA Guidelines requires that the EIR identify an environmentally superior alternative (CEQA Guidelines, Section 15126.6), which is the CEQA alternative that reduces or avoids the environmental impacts identified for the project to the greatest extent. The evaluation primarily considers the extent to which an alternative reduces or avoids the significant and unavoidable impacts identified for the proposed project. (These impacts are listed in Section 5.1.1, above.) The extent to which an alternative reduces or avoids less-than-significant impacts identified for the project is also considered, balanced by consideration of the extent to which the impact affects the physical environment.

The No Project Alternative would avoid all of the significant and unavoidable greenhouse gas emissions impacts and traffic impacts identified for the proposed project since no new development would occur and no new vehicle trips would be generated from the project site. This would make the No Project Alternative the environmentally superior since it would avoid all the significant and avoidable impacts, and most of the less-than-significant impacts, identified for the project.

However, CEQA requires that when the "no project" alternative emerges as the environmentally superior alternative, a second alternative shall be identified as environmentally superior (CEQA Guidelines, Section 15126.6(e)). Therefore, Alternative 3, Open Space / Passive Recreation, is the environmentally superior alternative because, when compared to the proposed project and each of the other alternatives *other than the No Project Alternative*, it would avoid all the significant and unavoidable impacts identified for the project [Impacts AIR-6 and AIR-7 regarding greenhouse gas emissions and policies; and Impact TRANS-18 regarding intersection impacts; and Impacts TRANS-21 and TRANS-22 regarding regional MTS roadways], and would reduce to the greatest extent most of the less-than-significant impacts identified for the project, as discussed in Section 5.3.3 above.

While Alternative 2.2, the 80 Percent Lower Density Alternative, would also avoid all the significant and unavoidable impacts identified for the project, Alternative 3 would reduce the environmental effects to the greatest extent given the substantially fewer vehicle trips that would be associated with the park use. The comparison of impacts resulting with the proposed project and all of the alternatives discussed in this chapter is summarized for convenience in Table 5-6 provided at the end of this chapter.

5.5 Alternatives Considered, but Rejected as Infeasible

As discussed under 5.2, above, the City considered the following scenarios for potential project alternatives, however, both scenarios were determined to be infeasible for the reasons described below. Because they were determined to be infeasible as alternatives to the proposed project for purposes of this CEQA analysis, they are not analyzed in detail in this EIR.

5.5.1 Higher Density Alternative

The project applicant, Unity Council, in partnership with a residential developer, previously proposed to construct Phase 2 of the Fruitvale Transit Village as a market-rate residential condominium and townhouse development, with limited institutional uses and/or project-serving amenities. This potential alternative would consist of a three-story parking podium, with three residential towers constructed on the parking podium. Approximately 11 four-story town homes would be constructed along the 37th Avenue and East 12th Street facades, and approximately 488 units would occupy the towers that would be constructed in varying heights toward the center of the site. An estimated 30,000 square feet of space on two levels at the highly visible intersection of East 12th Street and 35th Avenue would be used for either an approximately 150-student charter school or amenities (such as a gym and/or community space) for new project residents and the Fruitvale community.

The parking podium, which would consist of one subterranean level and two above-ground levels, would provide a maximum of one parking space per unit or 499 spaces for residents, and approximately 100 parking spaces that would either be fee-based or offered to residents as a second parking space.

Compared to the proposed project and the other alternatives analyzed above in Section 5.3, it is reasonable to estimate that the high density alternative described above would result in greater environmental effects to greenhouse gas emissions, traffic and related air quality and noise effects, as well as construction-period effects given the additional time and possible methods required to construct the 499 unit high-rise project and the subsurface parking level proposed. Other effects, such as aesthetics (light/glare, view corridors, shadow), or utility and public services demand would be greater than the proposed project due to the increased number of units (224 more, nearly 45 percent more than the project) and the three high-rise buildings proposed (compared to four, four-story buildings with the project). Therefore, the City determined that a high density alternative would not be fully analyzed in this EIR because it would not meet the primary purpose of the CEQA alternatives analysis to consider project alternatives that would lessen one or more significant effects of the project.

5.5.2 Mixed-Use with Commercial Alternative

The City considered an alternative to the proposed project that would incorporate commercial uses. It was assumed that a total of 10,000 square feet of these commercial uses would be developed on the ground floor of the residential buildings. In order to accommodate the 15-foot-high ceiling requirements for commercial use, the project would lose two floors of residential use – reducing the number of units to 206 (compared to 275 with the proposed project).

The environmental effects would be similar to those described for the 25 Percent Lower Density Alternative in Section 5.3.2; the only difference between the two is that the mixed-use with

commercial scenario would include 10,000 square feet of ground-floor commercial uses and result in additional vehicle trips generated by those uses. Thus, it would not avoid the significant and unavoidable greenhouse gas emissions impacts or traffic intersection impact, like the 25 Percent Lower Density Alternative. Also, as discussed in detail for each of the lower density alternatives, this scenario would support to a lesser extent the objectives of SB 375 and City plans and policies to reduce the impacts of greenhouse gases and climate change and develop transit-oriented development, which includes the development of high-density development near transit.

Since a mixed-use with commercial scenario would be similar in description and resulting impacts (compared to the proposed project) to those described for the 25 Percent Lower Density Alternative, which is fully analyzed in this EIR, the City determined that the mixed-use with commercial scenario was not warranted in this EIR in order to present a reasonable "range of alternatives" necessary for decision-makers and the public to make a reasoned and informed evaluation of the project and feasible alternatives, as previously discussed in Section 5.1.

The City also considered and rejected inclusion of alternatives that would develop other land uses on the site. Trip generation based on the ITE Trip Generation tables for the proposed project and several other potential land uses is presented in **Table 5-5** below.

TABLE 5-5
TRIP GENERATION

	Proposed Project Residential Condo/Townhouse (Average rate per dwelling unit)	Shopping Center (Average rate per 1,000 s.f.)	General Office Building (Average rate per 1,000 s.f.)	Recreation Community Center (Average rate per 1,000 s.f.)	Congregate Care Facility (per dwelling unit)
Daily Trips	5.64	42.94	11.01	22.88	2.02
AM Peak Hour Trips	0.42	1.00	1.55	1.62	0.06
PM Peak Hour Trips	0.50	3.73	1.49	1.45	0.17

SOURCE: ITE, 2008

As shown in the table above, several reasonably feasible non-residential land uses would result in substantially greater daily and peak hour vehicle trips, which would thereby result in substantially greater impacts regarding greenhouse gas emissions, traffic and related air quality and noise compared to the proposed project. While a congregate care facility use would result in less daily and peak hour trips, the City determined such land use to be infeasible at the project site given its inconsistency with the City's long-established plans and policies supporting intensified use at this Fruitvale BART location.

The City did not identify a feasible project alternative that would be compatible with the existing *Neighborhood Center Mixed Use* General Plan land-use designation and/or the S-15 Transit-

Oriented Development Zone for the project site, *and/or* that would generate substantially less peak-hour trips compared to the proposed project.

Table 5-6 below provides a summary of impacts for the proposed project and the alternatives.

TABLE 5-6
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

NOTE: *Significance levels shown in the table reflect levels of significance after mitigation or standard conditions of approval and indicate maximum impact during buildout and operation, unless otherwise specified.*	**Proposed Project**	**Alternative 1: No Project**	**Alternative 2: Lower Density Alternatives**		**Alternative 2.2: Lower Density (reduced 80 percent)**	**Alternative 3: Open Space / Passive Recreation**
			Lower Density (reduced 25 percent)	**Lower Density (reduced 50 percent)**		
	275 units, 3 bldgs plus parking structure	**Existing surface parking, 547 spaces**	**206 units, 2, 4-story bldgs**	**138 units, 1, 4-story bldg**	**55 units, 1, 2-story bldg with potential full site configuration**	**Limited amenities (benches, tot lot, landscaping, walkways)**
IMPACTS IDENTIFIED IN THE DRAFT EIR						
4.1 Air Quality						
Impact AIR-1: Activities associated with demolition, site preparation, and construction throughout development of the project would generate criteria air pollutants.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
Impact AIR-2: The project would result in increased emissions of criteria pollutants and their precursors from vehicular traffic to and from the project site; however, the emission increases from the project would not exceed BAAQMD significance criteria.	LS	N	LS⇩	LS	LS⇩	LS⇩
Impact AIR-3: Mobile emissions generated by project traffic would increase carbon monoxide concentrations at intersections in the project vicinity.	LS	N	LS⇩	LS⇩	LS⇩	N
Impact AIR-4: The proposed project could result in exposure of persons to substantial levels of PM2.5 concentrations and Toxic Air Contaminants (TACs) which may result in adverse health effects.	LSCM	N	LSC⇩	LSC⇩	LSCM⇩	LSCM⇩
Impact AIR-5: The proposed project is fundamentally consistent with the growth assumptions of the Bay Area Clean Air Plan.	LS	N	LS	LS	LS	LS
Impact AIR-6: Construction and operation of the project would not result in a cumulatively considerable increase in greenhouse gas emissions.	**SU**	N	LS⇩	LS⇩	LS	LS
Impact AIR-7: The project would conflict with an applicable plan, policy, or regulation of an appropriate regulatory agency adopted for the purpose of reducing greenhouse gas emissions. (Significant if the proposed BAAQMD thresholds are adopted.)	**SU**	N	SU	SU	LS	LS

Legend
LS Less than significant or negligible impact; no mitigation required
LSM Less than significant impact, after mitigation
LSC Less than significant impact, after standard conditions (LSCM – after standard conditions and mitigation)
SU Significant and unavoidable adverse impact, after mitigation
N No impact
B Beneficial
⇧⇩ Impact is more severe or less severe than project impact, after mitigation

TABLE 5-6 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

NOTE: *Significance levels shown in the table reflect levels of significance after mitigation or standard conditions of approval and indicate maximum impact during buildout and operation, unless otherwise specified.*	**Proposed Project**	**Alternative 1: No Project**	**Alternative 2: Lower Density Alternatives**		**Alternative 2.2: Lower Density (reduced 80 percent)**	**Alternative 3: Open Space / Passive Recreation**
			Lower Density (reduced 25 percent)	**Lower Density (reduced 50 percent)**		
	275 units, 3 bldgs plus parking structure	**Existing surface parking, 547 spaces**	**206 units, 2, 4-story bldgs**	**138 units, 1, 4-story bldg**	**55 units, 1, 2-story bldg with potential full site configuration**	**Limited amenities (benches, tot lot, landscaping, walkways)**
IMPACTS IDENTIFIED IN THE DRAFT EIR (cont.)						
4.2 Noise						
Impact NOI-1: Construction activities would intermittently and temporarily generate noise levels above existing ambient levels in the project vicinity.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
Impact NOI-2: Noise from project-generated traffic and other operational noise sources, such as mechanical equipment, truck loading/unloading, etc., would not exceed the Oakland Noise Ordinance standards and impact nearby sensitive receptors.	LS	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
Impact NOI-3: The project would place noise-sensitive multifamily residential uses in a noise environment characterized as “normally unacceptable” for such uses by the City of Oakland.	LSC	N	LSC⇩	LSC⇩	LSC⇩	N
Impact NOI-4: The project would expose sensitive residential uses to ground-borne vibration from trains passing by on the UPRR tracks.	LSC	N	LSC⇩	LSC⇩	LSC⇩	N
Impact NOI-5: The proposed project, together with past, present, existing, approved, pending and reasonably foreseeable future development included in the Oakland cumulative growth scenario, could result in long-term traffic increases that could cumulatively increase noise levels in the project area.	LS	N	LSC⇩	LSC⇩	LSC⇩	N

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LSM Less than significant impact, after mitigation
LSC Less than significant impact, after standard conditions (LSCM – after standard conditions and mitigation)
SU Significant and unavoidable adverse impact, after mitigation
N No impact
B Beneficial
⇧⇩ Impact is more severe or less severe than project impact, after mitigation

TABLE 5-6 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

NOTE: *Significance levels shown in the table reflect levels of significance after mitigation or standard conditions of approval and indicate maximum impact during buildout and operation, unless otherwise specified.*	**Proposed Project**	**Alternative 1: No Project**	**Alternative 2: Lower Density Alternatives**		**Alternative 2.2: Lower Density (reduced 80 percent)**	**Alternative 3: Open Space / Passive Recreation**
			Lower Density (reduced 25 percent)	**Lower Density (reduced 50 percent)**		
	275 units, 3 bldgs plus parking structure	**Existing surface parking, 547 spaces**	**206 units, 2, 4-story bldgs**	**138 units, 1, 4-story bldg**	**55 units, 1, 2-story bldg with potential full site configuration**	**Limited amenities (benches, tot lot, landscaping, walkways)**
IMPACTS IDENTIFIED IN THE DRAFT EIR (cont.)						
4.3 Transportation, Circulation and Parking						
Impact TRANS-1: Buildout of the proposed project would cause an increase in the average delay by more than six seconds during the PM peak hour for the critical eastbound (East 9th Street) through movement Intersection #4 Fruitvale Avenue / East 9th Street, which currently operates at an unacceptable LOS E.	LSM	N	LSM⇩	LSM⇩	LS	LS
Impact TRANS-2 Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at *Intersection #4 - Fruitvale Avenue and East 9th Street*, which would operate at an unacceptable LOS F under 2015 Baseline conditions.	LSM	N	LSM	LSM	LSM	LS
Impact TRANS-3: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the PM peak hour for the critical eastbound (East 12th Street) through movement at *Intersection #6 - 35th Avenue and East 12th Street*, which would operate at an unacceptable LOS F under 2015 Baseline conditions.	LSM	N	LSM	LSM	LSM	LS
Impact TRANS-4: Buildout of the proposed project would cause the PM peak-hour LOS to degrade from an acceptable LOS D under 2015 Baseline conditions to an unacceptable LOS E at *Intersection #8 - San Leandro Street and 35th Avenue.*	LSM	N	LSM⇩	LSM⇩	LS	LS
Impact TRANS-5: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at *Intersection #14 – San Leandro Street and High Street*, which would operate at an unacceptable LOS F under 2015 Baseline conditions.	LSM	N	LSM⇩	LSM⇩	LS	LS

Legend
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LSM Less than significant impact, after mitigation
LSC Less than significant impact, after standard conditions (LSCM – after standard conditions and mitigation)
SU Significant and unavoidable adverse impact, after mitigation
N No impact
B Beneficial
⇧⇩ Impact is more severe or less severe than project impact, after mitigation

TABLE 5-6 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

NOTE: *Significance levels shown in the table reflect levels of significance after mitigation or standard conditions of approval and indicate maximum impact during buildout and operation, unless otherwise specified.*	**Proposed Project**	**Alternative 1: No Project**	**Alternative 2: Lower Density Alternatives**		**Alternative 2.2: Lower Density (reduced 80 percent)**	**Alternative 3: Open Space / Passive Recreation**
			Lower Density (reduced 25 percent)	**Lower Density (reduced 50 percent)**		
	275 units, 3 bldgs plus parking structure	**Existing surface parking, 547 spaces**	**206 units, 2, 4-story bldgs**	**138 units, 1, 4-story bldg**	**55 units, 1, 2-story bldg with potential full site configuration**	**Limited amenities (benches, tot lot, landscaping, walkways)**
IMPACTS IDENTIFIED IN THE DRAFT EIR (cont.)						
4.3 Transportation, Circulation and Parking (cont.)						
Impact TRANS-6: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical southbound (High Street) through movement at *Intersection #15 - High Street and Coliseum Way*, which would operate at an unacceptable LOS F under 2015 Baseline conditions.	LSM	N	LSM⇩	LSM⇩	LS	LS
Impact TRANS-7 Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the PM peak hour for the critical southbound (Fruitvale Avenue) through movement at *Intersection #1 - Fruitvale Avenue / International Boulevard*, which would operate at LOS F under 2035 Baseline conditions.	LSM	N	LSM⇩	LSM⇩	LS	LS
Impact TRANS-8: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the PM peak hour for the critical southbound (Fruitvale Avenue) through movement at *Intersection #2 - Fruitvale Avenue / East 12th Street*, which would operate at LOS F under 2035 Baseline conditions.	LSM	N	LSM	LSM	LS	LS
Impact TRANS-9: Buildout of the proposed project would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical northbound (Fruitvale Avenue) through movement at *Intersection #3 - Fruitvale Avenue / San Leandro Street*, which would operate at LOS F under 2035 Baseline conditions.	LSM	N	LSM⇩	LSM⇩	LS	LS

Legend
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LSM Less than significant impact, after mitigation
LSC Less than significant impact, after standard conditions (LSCM – after standard conditions and mitigation)
SU Significant and unavoidable adverse impact, after mitigation
N No impact
B Beneficial
⇧⇩ Impact is more severe or less severe than project impact, after mitigation

TABLE 5-6 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

NOTE: *Significance levels shown in the table reflect levels of significance after mitigation or standard conditions of approval and indicate maximum impact during buildout and operation, unless otherwise specified.*	**Proposed Project**	**Alternative 1: No Project**	**Alternative 2: Lower Density Alternatives**		**Alternative 2.2: Lower Density (reduced 80 percent)**	**Alternative 3: Open Space / Passive Recreation**
			Lower Density (reduced 25 percent)	**Lower Density (reduced 50 percent)**		
	275 units, 3 bldgs plus parking structure	**Existing surface parking, 547 spaces**	**206 units, 2, 4-story bldgs**	**138 units, 1, 4-story bldg**	**55 units, 1, 2-story bldg with potential full site configuration**	**Limited amenities (benches, tot lot, landscaping, walkways)**
IMPACTS IDENTIFIED IN THE DRAFT EIR (cont.)						
4.3 Transportation, Circulation and Parking (cont.)						
Impact TRANS-10: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at *Intersection #4 - Fruitvale Avenue and East 9th Street*, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical eastbound (East 9th Street) through movement.	LSM	N	LSM⇩	LSM⇩	LS	LS
Impact TRANS-11: Buildout of the proposed project would cause the PM peak-hour LOS to degrade from an acceptable LOS D under 2035 Baseline conditions to an unacceptable LOS E at *Intersection #5 - Fruitvale Avenue / East 8th Street.*	LSM	N	LSM⇩	LSM⇩	LS	LS
Impact TRANS-12: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM peak hour at *Intersection #6 - 35th Avenue and East 12th Street*, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM and PM peak hours for the critical northbound (35th Avenue) through movement.	LSM	N	LSM⇩	LSM⇩	LSM	LS
Impact TRANS-13: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the PM peak hour at *Intersection #8 - San Leandro Street and 35th Avenue*, which would operate at LOS F under 2035 Baseline conditions.	LSM	N	LSM⇩	LSM⇩	LS	LS

Legend
LS Less than significant or negligible impact; no mitigation required
LSM Less than significant impact, after mitigation
LSC Less than significant impact, after standard conditions (LSCM – after standard conditions and mitigation)
SU Significant and unavoidable adverse impact, after mitigation
N No impact
B Beneficial
⇧⇩ Impact is more severe or less severe than project impact, after mitigation

TABLE 5-6 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

NOTE: *Significance levels shown in the table reflect levels of significance after mitigation or standard conditions of approval and indicate maximum impact during buildout and operation, unless otherwise specified.*	**Proposed Project**	**Alternative 1: No Project**	**Alternative 2: Lower Density Alternatives**		**Alternative 2.2: Lower Density (reduced 80 percent)**	**Alternative 3: Open Space / Passive Recreation**
			Lower Density (reduced 25 percent)	**Lower Density (reduced 50 percent)**		
	275 units, 3 bldgs plus parking structure	**Existing surface parking, 547 spaces**	**206 units, 2, 4-story bldgs**	**138 units, 1, 4-story bldg**	**55 units, 1, 2-story bldg with potential full site configuration**	**Limited amenities (benches, tot lot, landscaping, walkways)**
IMPACTS IDENTIFIED IN THE DRAFT EIR (cont.)						
4.3 Transportation, Circulation and Parking (cont.)						
Impact TRANS-14: Buildout of the proposed project would add more than 10 trips during the PM peak hour to *Intersection #9 - 37th Avenue / East 12th Street*, which would meet signal warrants, and would operate at LOS F under 2035 Baseline conditions.	LSM	N	LSM⇩	LSM⇩	LS	LS
Impact TRANS-15: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds at during the AM and PM peak hours *Intersection #10 - San Leandro Street / 37th Avenue*, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical westbound (San Leandro Street) through movement.	LSM	N	LSM⇩	LSM⇩	LSM	LS
Impact TRANS-16: Buildout of the proposed project would cause the PM peak-hour LOS to degrade from an acceptable LOS D under 2035 Baseline conditions to an unacceptable LOS E at *Intersection #11 - International Boulevard / 38th Avenue*.	LSM	N	LSM⇩	LSM⇩	LS	LS
Impact TRANS-17: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM peak hour at *Intersection #13 - International Boulevard / High Street*, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical southbound (High Street) through movement.	LSM	N	LSM	LSM	LS	LS

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TABLE 5-6 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

NOTE: *Significance levels shown in the table reflect levels of significance after mitigation or standard conditions of approval and indicate maximum impact during buildout and operation, unless otherwise specified.*	**Proposed Project**	**Alternative 1: No Project**	**Alternative 2: Lower Density Alternatives**		**Alternative 2.2: Lower Density (reduced 80 percent)**	**Alternative 3: Open Space / Passive Recreation**
			Lower Density (reduced 25 percent)	**Lower Density (reduced 50 percent)**		
	275 units, 3 bldgs plus parking structure	**Existing surface parking, 547 spaces**	**206 units, 2, 4-story bldgs**	**138 units, 1, 4-story bldg**	**55 units, 1, 2-story bldg with potential full site configuration**	**Limited amenities (benches, tot lot, landscaping, walkways)**
IMPACTS IDENTIFIED IN THE DRAFT EIR (cont.)						
4.3 Transportation, Circulation and Parking (cont.)						
Impact TRANS-18: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM and PM peak hours at *Intersection #14 - San Leandro Street / High Street*, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay during the PM peak hour by more than four seconds for the critical northbound (High Street) through movement.	**SU**	N	**SU**	**SU**	LS	LS
Impact TRANS-19: Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM and PM peak hours at *Intersection #15 - Coliseum Way / High Street*, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay by more than four seconds during the AM peak hour for the critical southbound (High Street) left-turn movement.	LSM	N	LSM	LSM	LS	LS
Impact TRANS-20: Buildout of the proposed project would add traffic to the freeway ramps and mainline segments of I-880.	LS	N	LS	LS	LS	LS
Impact TRANS-21: Buildout of the proposed project would contribute to 2015 changes to traffic conditions on the regional and local roadways.	SU	N	SU	SU	LS	LS
Impact TRANS-22: Buildout of the proposed project would contribute to 2035 changes to traffic conditions on the regional and local roadways.	SU	N	SU	SU	LS	LS

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IMPACTS IDENTIFIED IN THE INITIAL STUDY						
I. Aesthetics						
The proposed project could have a substantial adverse effect on a scenic vista.	LS	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state or locally designated scenic highway.	N	N	N	N	N	N
The proposed project could substantially degrade the existing visual character or quality of the site and its surroundings.	LS	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could create a new source of substantial light or glare, which would substantially and adversely affect day or nighttime views in the area.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could introduce landscape that now or in the future cast substantial shadows on existing solar collectors (in conflict with California Public Resource Code Section 25980-25986).	N	N	N	N	N	N
The proposed project could cast shadows that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors.	N	N	N	N	N	N
The proposed project could cast a shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space.	LS	N	LSC⇩	LSC⇩	LSC⇩	LS

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
I. Aesthetics (cont.)						
The proposed project could cast shadow on an historic resource, as defined by CEQA 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 Historic Resources or a historical resource survey form (DPR Form 523) with a rating of 1–5.	N	N	N	N	N	N
The proposed project could 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.	LS	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could create winds exceeding 36 mph for more than 1 hour during daylight hours during the year.	N	N	N	N	N	N
II. Agricultural Resources						
The proposed project could convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resource Agency, to non-agricultural use.	N	N	N	N	N	N

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
II. Agricultural Resources (cont.)						
The proposed project could conflict with existing zoning for agricultural use, or a Williamson Act contract.	N	N	N	N	N	N
The proposed project could involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.	N	N	N	N	N	N
IV. Biological Resources						
The proposed project could 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 Game or U.S. Fish and Wildlife Service.	LS	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could 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 Game or U.S. Fish and Wildlife Service.	N	N	N	N	N	N
The proposed project could 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.	N	N	N	N	N	N
The proposed project could interfere substantially 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.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
IV. Biological Resources (cont.)						
The proposed project could fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan.	N	N	N	N	N	N
The proposed project could fundamentally conflict with the City of Oakland Tree Preservation Ordinance (Oakland Municipal Code (OMC) Chapter 12.36) by removal of protected trees under certain circumstances. 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) the protected trees to remain, with special consideration given to native trees.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could fundamentally conflict with the City of Oakland Creek Protection Ordinance (OMC Chapter 13.16) intended to protect biological resources. 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 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.	N	N	N	N	N	N

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
V. Cultural Resources						
The proposed project could cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines δ15064.5. 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).	N	N	N	N	N	N
The proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to δ15064.5.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could disturb any human remains, including those interred outside of formal cemeteries.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
VI. Geology and Soils						
The proposed project could 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 (refer to Division of Mines and Geology Special Publications 42 and 117 and PRC δ2690 et. Seq.).	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
The proposed project could expose people or structures to substantial risk of loss, injury, or death involving strong seismic ground shaking.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could expose people or structures to substantial risk of loss, injury, or death involving seismic-related ground failure, including liquefaction, lateral spreading, subsidence, or collapse.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could expose people or structures to substantial risk of loss, injury, or death involving landslides.	N	N	N	N	N	N
The proposed project could result in substantial soil erosion or the loss of topsoil, creating substantial risks to life, property, or creek/waterways.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as it may be revised), creating substantial risks to life or property.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
VI. Geology and Soils (cont.)						
The proposed project could be located above a well, pit, swamp, mound, tank vault, or unmarked sewer line, creating substantial risks to life or property.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
The proposed project could 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.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
The proposed project could 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.	N	N	N	N	N	N
VII. Hazards and Hazardous Materials						
The proposed project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
The proposed project could 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.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
VII. Hazards and Hazardous Materials (cont.)						
The proposed project could be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could 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.	N	N	N	N	N	N
The proposed project could 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.	N	N	N	N	N	N
The proposed project could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
The proposed project could 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.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
VIII. Hydrology and Water Quality						
The proposed project could violate any water quality standards or waste discharge requirements.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
The proposed project could result in substantial erosion or siltation on- or off-site that would affect the quality of receiving waters.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could result in substantial flooding on- or off-site.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could create or contribute substantial runoff, which would exceed the capacity of existing or planned stormwater drainage systems.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
The proposed project could create or contribute substantial runoff, which would be an additional source of polluted runoff.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could otherwise substantially degrade water quality.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
VIII. Hydrology and Water Quality (cont.)						
Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map that would impede or redirect flood flows.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
Place within a 100-year flood hazard area structures, which would impede or redirect flood flows.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
Expose people or structures to a substantial risk of loss, injury or death involving flooding.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
Result in inundation by seiche, tsunami, or mudflow.	N	N	N	N	N	N
Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course, or increasing the rate or amount of flow, of a Creek, river or stream in a manner that would result in substantial erosion, siltation, or flooding, both on- or off-site.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
Fundamentally conflict with elements of the City of Oakland Creek Protection (OMC Chapter 13.16) ordinance intended to protect hydrologic resources. 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 water quality through (a) discharging a substantial amount of pollutants into a creek; (b) significantly modifying the natural flow of the water or capacity; (c) depositing substantial amounts of new material into a creek or causing substantial bank erosion or instability; or (d) substantially endangering public or private property or threatening public health or safety.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩

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SU Significant and unavoidable adverse impact, after mitigation
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B Beneficial
⇧⇩ Impact is more severe or less severe than project impact, after mitigation

TABLE 5-6 (Continued)
SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

NOTE: *Significance levels shown in the table reflect levels of significance after mitigation or standard conditions of approval and indicate maximum impact during buildout and operation, unless otherwise specified.*	**Proposed Project**	**Alternative 1: No Project**	**Alternative 2: Lower Density Alternatives**		**Alternative 2.2: Lower Density (reduced 80 percent)**	**Alternative 3: Open Space / Passive Recreation**
			Lower Density (reduced 25 percent)	**Lower Density (reduced 50 percent)**		
	275 units, 3 bldgs plus parking structure	**Existing surface parking, 547 spaces**	**206 units, 2, 4-story bldgs**	**138 units, 1, 4-story bldg**	**55 units, 1, 2-story bldg with potential full site configuration**	**Limited amenities (benches, tot lot, landscaping, walkways)**
IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
IX. Land Use and Planning						
The proposed project could physically divide an established community.	N	N	N	N	N	N
The proposed project could result in a fundamental conflict between adjacent or nearby land uses.	N	N	N	N	N	N
The proposed project could fundamentally conflict with applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect and actually result in a physical change in the environment.	LS	N	LS	LS	LS⇧	LS⇩
The proposed project could fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan.	N	N	N	N	N	N
The proposed project could result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.	N	N	N	N	N	N
X. Mineral Resources						
The proposed project could result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	N	N	N	N	N	N

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SUMMARY OF IMPACTS: PROJECT AND ALTERNATIVES

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
XII. Population and Housing						
The proposed project could induce substantial population growth in a manner not contemplated in the General Plan either directly (for example by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure), such that additional infrastructure is required but the impacts of such were not previously considered or analyzed.	LS	N	LS⇩	LS⇩	LS⇩	N
The proposed project could displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element.	N	N	N	N	N	N
The proposed project could displace substantial numbers of people, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element.	N	N	N	N	N	N
XIII. Public Services						
The proposed project could result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:						
i) Fire protection.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
ii) Police protection.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
XIII. Public Services (cont.)						
iii) Schools.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
iv) Other public facilities.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
XIV. Recreation						
The proposed project could increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LS	N	LS⇩	LS⇩	LS⇩	N
The proposed project could include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.	N	N	N	N	N	LS
XVI. Utilities and Service Systems						
The proposed project could exceed wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could require or result in construction of new storm water drainage facilities or expansion of existing facilities, construction of which could cause significant environmental effects.	LSC	N	LSC⇩	LSC⇩	LSC⇩	N
The proposed project could exceed water supplies available to serve the project from existing entitlements and resources, and require or result in construction of water facilities or expansion of existing facilities, construction of which could cause significant environmental effects.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩

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IMPACTS IDENTIFIED IN THE INITIAL STUDY (cont.)						
XVI. Utilities and Service Systems (cont.)						
The proposed project could result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the providers' existing commitments and require or result in construction of new wastewater treatment facilities or expansion of existing facilities, construction of which could cause significant environmental effects.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs and require or result in construction of landfill facilities or expansion of existing facilities, construction of which could cause significant environmental effects.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could violate applicable federal, state, and local statutes and regulations related to solid waste.	LSC	N	LSC⇩	LSC⇩	LSC⇩	LSC⇩
The proposed project could violate applicable federal, state and local statutes and regulations relating to energy standards.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩
The proposed project could result in a determination by the energy provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the providers' existing commitments and require or result in construction of new energy facilities or expansion of existing facilities, construction of which could cause significant environmental effects.	LS	N	LS⇩	LS⇩	LS⇩	LS⇩

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CHAPTER 6
Impact Overview and Growth-Inducing Impacts

6.1 Significant Unavoidable and Cumulative Environmental Impacts

A significant and unavoidable impact would result if a project reaches or exceeds the defined threshold of significance and no feasible mitigation measure is available to reduce the significant impact to a less-than-significant level. The proposed project would result in the following significant and unavoidable and cumulative environmental effects, as identified and discussed in Chapter 4 of this EIR:

- **Impact AIR-6:** Construction and operation of the project would result in a cumulatively considerable increase in greenhouse gas emissions if proposed BAAQMD thresholds are adopted.

- **Impact AIR-7:** The project would conflict with an applicable plan, policy or regulation of an appropriate regulatory agency adopted for the purpose of reducing greenhouse gas emissions if proposed BAAQMD thresholds are adopted.

- **Impact TRANS-18:** Buildout of the proposed project would cause an increase in the overall intersection average delay by more than two seconds during the AM and PM peak hours at *Intersection #14 - San Leandro Street / High Street*, which would operate at LOS F under 2035 Baseline conditions. The addition of project traffic also would cause an increase in the average delay during the PM peak hour by more than four seconds for the critical northbound (High Street) through movement.

- **Impact TRANS-21:** Buildout of the proposed project would contribute to 2015 changes to traffic conditions on the regional and local roadways.

- **Impact TRANS-22:** Buildout of the proposed project would contribute to 2035 changes to traffic conditions on the regional and local roadways.

6.2 Growth-Inducing Impacts

The proposed project would result in new growth consistent with the Oakland General Plan LUTE Objective T2, i.e., to provide mixed-use, transit-oriented development that encourages public transit use and increases pedestrian and bicycle trips at major transportation nodes. The City determined that the overall land use plan for the Fruitvale Transit Village Phase 2 project is consistent with the Transit Oriented Development Zone (S-15), which is intended to create, preserve and enhance areas devoted primarily to serve multiple nodes of transportation and to

feature high-density residential, commercial, and mixed-use developments to encourage a balance of pedestrian-oriented activities, transit opportunities, and concentrated development. Thus, the City has previously planned for the increased housing, population, and infrastructure that would occur as a result of the Fruitvale Transit Village Phase 2 project.

In addition, the project is not expected to be a catalyst for other significant development or population growth in the area, directly or indirectly, requiring new infrastructure *not previously planned for and analyzed*. New infrastructure required to develop the project is directly associated with the proposed project and generally located within the "contained" project site. No off-site infrastructure improvements are proposed that would potentially induce growth not otherwise anticipated. Off-site intersection improvements required by mitigation measures to address project and/or cumulative effects would not induce substantial new unanticipated growth in the project area.

The proposed project would occur on an infill site in an existing urbanized neighborhood in Oakland. It would not result in the extension of utilities or roads into exurban areas, and would not directly or indirectly lead to the development of greenfield sites in the East Bay. Because the project site is located within an existing urbanized area, and is near a major transit station (Fruitvale BART Station) as well as high-density urban residential units (in Phase 1 and surrounding areas), anticipated growth would benefit the existing transit system and could reduce adverse impacts associated with automobile use, such as traffic, air pollution and noise. Therefore, the population growth that would occur as a result of proposed project implementation would be largely beneficial and not considered substantial and adverse.

6.3 Significant Irreversible Environmental Effects

An EIR must identify any significant irreversible environmental changes that could result from implementation of a proposed project. These may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. CEQA dictates that irretrievable commitments of resources should be evaluated to assure that such current consumption is justified (CEQA *Guidelines* §15126.2(c)). The CEQA *Guidelines* identify three distinct categories of significant irreversible changes: (1) changes in land use that would commit future generations; (2) irreversible changes from environmental actions; and (3) consumption of large amounts of non-renewable resources.

6.3.1 Changes in Land Use Which Would Commit Future Generations

The proposed project is consistent with the land use designated by the City of Oakland's General Plan. Because the proposed project would occur on an infill site on land within an urban area surrounded by similar or compatible uses, it does not represent a significant change in land use.

6.3.2 Irreversible Changes from Environmental Actions

No significant irreversible environmental damage, such as alterations to ecological systems, would occur with implementation of the proposed project. Compliance with federal, State, and local regulations, the City of Oakland's Standard Conditions of Approval, and the implementation of mitigation measures identified in the Initial Study and in this report, would reduce to a less-than-significant level the possibility that construction and operation of the proposed project would cause irreversible changes to the environment from accidental hazardous materials spills or construction methods.

The proposed project is a comparatively small infill development in a heavily populated area of the City of Oakland. The existing public services and water supplies will be able to meet the demand of the residents of the proposed project. The proposed project would not affect historic resources or scenic views.

6.3.3 Consumption of Non-Renewable Resources

Consumption of non-renewable resources includes conversion of agricultural lands, loss of access to mining reserves, and use of non-renewable energy sources. The project site is located within an urban area of Oakland; no agricultural land would be converted to non-agricultural uses. The project site does not contain known mineral resources and does not serve as a mining reserve.

Construction of proposed project would require the use of energy, including energy produced from non-renewable resources. Energy consumption would also occur during the operational period of the proposed project due to the use of automobiles, lighting, and appliances. The project would be required to comply with all standards of Title 24 of the California Code of Regulations, which is aimed at the incorporation of energy-conserving design and construction. As a result, although the project will increase energy consumption, the impact on energy resources and standards would be less than significant.

In compliance with the City's Standard Conditions of Approval, the project applicant will prepare a Construction and Demolition Waste Reduction and Recycling Plan and an Operational Diversion Plan for review and approval by the Public Works Agency.

6.4 Effects Found Not To Be Significant

Meetings with representatives of the City of Oakland departments involved in the planning and review of development projects, and consultants for the City were held to determine the preliminary scope of the proposed project. In addition to those meetings, an Initial Study was prepared (included in Appendix A of this report). A Notice of Preparation was circulated on December 22, 2008, and a public scoping meeting was held on January 21, 2009, at the Planning Commission meeting, to solicit comments from the public and city officials about this proposed project. Written comments received on the NOP were considered in the preparation of the final scope for this document and in the evaluation of the proposed project.

The Initial Study analyzed all topics in Appendix G of the CEQA *Guidelines* and determined that with the exception of the topics of air quality, noise, and transportation, the proposed project would have a less-than-significant impact on the other resource topics with the application of the City's Standard Conditions of Approval and mitigation measures. The topics of air quality, noise, and transportation, are analyzed in detail in Chapter 4 of this focused EIR.

References – Impact Overview and Growth-Inducing Impacts

City of Oakland, *Envision Oakland, City of Oakland General Plan, Land Use and Transportation Element (LUTE),* as amended through March 24, 1998.

City of Oakland, *Open Space, Conservation and Recreation (OSCAR), An Element of the Oakland General Plan,* adopted June 1996.

CHAPTER 7
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